

**A STRATEGIC ACTION PLAN TO IMPROVE YOUTHS' LIFESTYLES
AND DECREASE NON-COMMUNICABLE DISEASES IN SOUTH-WEST
NIGERIA**

By

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DECLARATION

I declare that **A STRATEGIC ACTION PLAN TO IMPROVE YOUTHS' LIFESTYLES AND DECREASE NON-COMMUNICABLE DISEASES IN SOUTH-WEST NIGERIA** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

SIGNATURE

A handwritten signature in blue ink, appearing to be 'Adeosun Foluke Odunayo', written on a light-colored background.

ADEOSUN FOLUKE ODUNAYO

.....

Date

DEDICATION

I dedicate this work to:

God almighty, who gave me the grace to successfully complete the study, and my darling sister, Ogunmola Olubunmi, Olamilekan, and Olamiposi who gave me the support I needed throughout the study.

To my lovely daughter, Oluwatuminiu, who sacrificed a lot and shouldered many responsibilities to enable me to complete my studies.

With love

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ABSTRACT

A STRATEGIC ACTION PLAN TO IMPROVE LIFE STYLE AND DECREASE NON-COMMUNICABLE DISEASES AMONG YOUTHS IN SOUTH- WEST NIGERIA.

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Young people between the ages of 15 and 24 years constitute over one-third of Africa's population. This is the age where lifestyle behaviour patterns, such as healthy eating, moderate alcohol intake and regular physical activity are established, and can last a lifetime. If smoking, harmful alcohol consumption, physical inactivity and unhealthy dietary patterns, which are risk factors for non-communicable diseases (NCDs), continue into adulthood, it is challenging to change these unhealthy behaviours. Addressing the mentioned risk factors among young people through health interventions that support positive health attitudes and discourage negative ones can change the projected impact of NCDs in Africa.

The aim of this research was to develop a strategic action plan that can be implemented to inform youths about non-risky lifestyles in an attempt to decrease their levels of exposure to risks and ultimately decrease NCDs in South-West Nigeria.

A cross-sectional, sequential, mixed-methods design was employed over three phases to study risky lifestyle practices among youths, and developed a strategic action plan to improve lifestyle and prevent NCDs. Youths of both sexes, aged 15–24 years old, from six different tertiary institutions located within the six states of the south-west region of Nigeria, formed the population for this study. Pretesting of the questionnaire as well validation instrument were conducted. A combination of stratified convenient sampling

and convenient sampling techniques were utilised to select 384 youth respondents in Phase 1 (quantitative phase) and 25 Delphi experts in Phase 3 (qualitative phase). A self-completed questionnaire was used for data gathering in Phase 1, and an embedded assessment validation tool, using the e-Delphi Delphi technique, in Phase 3.

Descriptive statistics with frequency distribution tables were constructed and Chi-square tests were performed to identify possible associations between variables using the IBM SPSS version 22.0, in Phase 1. Data indicated that 50.5% of youths smoked, 54.7% consumed alcohol, 87.5% spent between 5 to 14 hours sitting daily; 71.9% (n=276) did not often consume fruits, while only 20.8% (n=80) regularly ate vegetables. It was identified that 24.2% of youths had already been diagnosed with lung disease, 18% with heart disease, 4.7% with cancer, 20.6% with uncontrollable weight gain, and 24.7% with diabetes. Of the respondents, 34.1% perceived that an unhealthy lifestyle would not cause NCDs; 10.7% had no idea that their lifestyle determined their health status, while 7.8% indicated that lifestyle cannot influence health status either positively or negatively. Of concern was that only 27.3% of youths were willing to quit smoking, 45.0 to stop drinking alcohol, 35.4% thought they could quit eating unhealthy food, while 37.5% thought they could exercise more. Youths' indecision in quitting unhealthy lifestyle practices was attributed to peer influence, low self-esteem, poor governmental control, parental influence, as well as uncontrolled freedom. Consequently, it was suggested that strict rules and regulations be imposed, youths be introduced to counselling, and health values be instilled in young people to help improve youths' quality of life and prevent NCDs. The draft strategic action plan, based on the findings of Phase 1 and the literature review in Phase 2, was validated in Phase 3. Consensus was reached after two rounds of e-Delphi, resulting in the final strategic action plan.

The strategic action plan needs to be adopted by government in the south-west region in Nigeria, implemented and monitored by all stakeholders, namely academics, healthcare practitioners, government officials from the Ministry of Health, Ministry of Education, Ministry of Youth Development, Ministry of Agriculture, Ministry of Information, and officials in the government agencies from the National Agency for Food and Drug

Administration and Control (NAFDAC), National Drug Law Enforcement Agency (NDLEA), the Nigerian Police Force (NPF) and Nigeria Customs Services (NCS), who were involved in the development and validation thereof.

Keywords: Youths; Lifestyle; Health; Non-communicable diseases; Smoking; Alcohol consumption, Diet, Physical activity; Strategic action plan, Delphi technique.

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ABBREVIATIONS

ABUAD	Afe Babalola University Ado-Ekiti
BMI	Body Mass Index
CHD	Coronary Heart Disease
CICMCN	Chattered Institute of Corporate Mentoring and Coaching Nigeria
COPD	Chronic Obstructive Pulmonary Disease
CRD	Chronic Respiratory Diseases
DNA	Deoxyribonucleic acid
FUTA	Federal University of Technology Akure
HPD	Health Promotion Division
IPOB	Indigenous People of Biafra
JABU	Joseph Ayo Babalola University
MASSOB	Movement for the Actualisation of the Sovereign State of Biafra
NAFDAC	National agency for food and drug administration and control
NBC	National Broadcasting Commission
NCD	Non-communicable disease
NCDD	Non-communicable disease division
NCS	Nigeria customs service
NDLEA	National Drug Law Enforcement Agency
NGO	Non-governmental organisation
NPF	Nigeria Police force
NUC	National universities commission
PAD	Peripheral artery disease
PRB	Population Reference Bureau
TPB	Theory of planned behaviour
TRA	Theory of reasoned action
UI	University of Ibadan
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations International Children’s Emergency Fund

UNILAG	University of Lagos
UNISA	University of South Africa
WEF	World Economic Forum
WHO	World Health Organisation

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Non-communicable diseases (NCDs) are diseases that are neither contagious nor infectious and cannot be passed directly from one person to another (Udjo & Lalthapersad-Pillay 2014:3). These diseases are said to contribute significantly to deaths globally, killing more people annually than the combination of all other causes (Awosan, Ibrahim, Essien *et al* 2014:2). The World Health Organisation (WHO) (2018:online) indicated that about 41 million deaths are recorded each year from NCDs, including cardiovascular diseases, diabetes and cancers. Fifteen million deaths occur in over 85% of developing countries among people between the ages of 30 and 69 (WHO 2018:1). These deaths are ultimately avoidable if healthy lifestyles can be promoted, specifically among youths. For instance, when positive health behaviours such as healthy eating and regular exercise are established at a young age, they are more likely to be carried through to adulthood. Thus, working with young people to mitigate risks and establish positive health behaviours early in life can foster a healthier adult population, and substantially decrease the burden of NCDs (Reshma & Kaneda 2015:1).

According to the Population Reference Bureau (PRB), it is anticipated that by the year 2030, a significant increase in the total number of deaths from NCDs can be expected in sub-Saharan Africa (Reshma & Kaneda 2015:2). Almost half of all deaths in this region will be attributed to NCDs, showing a remarkable increase from 28% in 2008 to 46% in 2030. The WHO has also recognised four main NCDs, namely cardiovascular diseases, diabetes, chronic respiratory diseases, and cancers; all of which are principally caused by four primary risk factors, including tobacco smoking, harmful alcohol consumption, physical inactivity, and unhealthy dietary patterns. These mentioned risk factors are typically engaged in during teenage years or in young adulthood, and set the stage for unhealthy lifestyle behaviour and diseases later in life (Reshma & Kaneda 2015:2).

Sub-Saharan African countries are faced with the triple burden of a feeble health system, a serious burden of infectious diseases, and the escalating health burden caused by NCDs (Ekpenyong, Udokang, Akpan *et al* 2012:2). Nigeria constitutes a significant part of the total population of sub-Saharan Africa and is saddled with the challenge of inadequate and inequitable distribution of resources for sustainable development. This prevents the population from having easy access to the education and services needed to prevent and treat NCDs (Ekpenyong *et al* 2012:2). Moreover, the burden of NCDs is on the increase in Nigeria as a result of various forces of globalisation, even though most of its risk factors can be averted by behavioural modification (Maiyaki & Garbati 2014:1).

In Nigeria, NCDs have become primary reasons for medical admissions, at least in urban areas. With the lack of adequate resources in Nigeria, the increasing occurrence of NCDs can thus drain household resources and constrain families in poverty (Ogah, Madukwe, Onyeonoro *et al* 2013:2; Odenigbo & Oguejiofor 2009:1).

1.2 BACKGROUND AND PROBLEM STATEMENT

The PRB reveals that over one-third of Africa's population is between the ages of 15 and 24 (Reshma & Kaneda 2015:2). This shows that Africa has the world's youngest population, with approximately 360 million young people. By 2050, these young people will have grown to become a population age of 45 and over; the age when NCDs primarily present themselves. A review of literature has shown that the incidence of NCDs in youth signifies a phase of experimentation, the development of an individual identity, and also a period when lifetime behaviour patterns become established. Thus, interventions that address the social and economic precursors of NCD risks, support positive health attitudes, and discourage negative ones among young people can drastically change the projected impact of NCDs in Africa. Positive behaviours such as healthy eating, moderate alcohol consumption and regular physical activity established during childhood or adolescence are more likely to be maintained through later life. In contrast, the earlier people begin using harmful substances such as tobacco and alcohol, the greater the risk of abuse and addiction later in life (Naik & Kaneda 2015:2). Typically, when unhealthy

behaviours persist into adulthood, they become difficult to change (Naik & Kaneda 2015:2).

Addressing these risk factors among young people can therefore drastically change the projected toll of NCDs in Africa. Conversely, failure to take urgent action to curb NCDs will add substantial pressure on already overburdened health systems (Reshma & Kaneda 2015:3). The researcher determined that for this study, the lifestyles changes required among youths (15–24 years) to prevent NCDs in Nigeria, specifically South-West Nigeria, must be addressed.

1.3 RESEARCH AIM/PURPOSE

The aim of this research is to develop a strategic action plan to inform youths about positive lifestyle changes in an attempt to reduce their exposure and decrease NCDs in South-West Nigeria.

1.4 RESEARCH OBJECTIVES

To reach the aim of this study, the following objectives applied:

1. Identify the current risky lifestyle practices among youths in South-West Nigeria.
2. Identify the factors contributing to the specific pattern of lifestyle.
3. Describe youths' perception of the impact of risky lifestyle patterns on NCDs.
4. Describe barriers to healthy lifestyle patterns among youths in South-West Nigeria.
5. Describe lifestyle changes that can contribute to the prevention of NCDs in South-West Nigeria.
6. Develop a strategic action plan that can be implemented to inform youths about risky lifestyles and promote non-risky lifestyles to decrease NCDs in South-West Nigeria.
7. Validate the strategic action plan to ensure reliability and applicability in the South-Western Nigerian context.

1.5 RESEARCH QUESTIONS

1. What are youths' perceptions of the impact of their lifestyle patterns on NCDs?
2. What are the factors contributing to the specific pattern of lifestyle among youths?
3. What lifestyle changes among youths can contribute to the prevention of NCDs?
4. What are the barriers to healthy lifestyle patterns among youths in South-West Nigeria?

1.6 THEORETICAL GROUNDING/THEORETICAL FRAMEWORK

A theory can be defined as a set of views, notions, ideas and statements that provide explicit explanations to problems arising from the actions or behaviour of people (Schaefer 2011:8; Ritzer 2015:3). Theories are descriptions of natural or social behaviour, occurrences, or observable facts. A scientific theory is a structure that provides a valid, methodical, and consistent explanation of a given phenomenon (Bhattacharjee 2012:25). Rather than just describing or predicting a phenomenon, theories help provide the reasons why given phenomena happen the way they do. The Theory of Planned Behaviour (TPB) from the Social Cognitive Models is the most relevant theory applicable to this study.

The TPB is a universal theory of human actions in the social psychology literature, used to study a wide variety of individual behaviour. It presumes that individual behaviour represents a conscious reasoned choice, and is shaped by cognitive thinking and social pressures. This theory presumes that individuals' attitude towards outcomes of behaviour is a determining factor for acting in certain ways. Behaviours are therefore based on one's objective concerning that behaviour, which, in turn, is the rationale behind the person's behavioural intention, the attitude towards the behaviour and subjective norms. Behavioural control involves a person's perception of both internal and external controls restricting the behaviour. Internal controls may include the person's capability to perform the intended behaviour (self-efficacy), while external control refers to the availability of external resources to perform that behaviour (facilitating conditions).

The TPB was developed as an extension of the theory of reasoned action, which incorporated attitude and subjective norm as important foundations of intention (Bhattacharjee 2012:30-31). This theory therefore explains the motive behind youths' behaviour in respect of their lifestyle. In general, to carry out any given action, people evaluate such actions positively in order to establish the consent of 'important others' before performing it. Living a healthy lifestyle among youths will determine the prevalence of NCDs in their future (see Section 4.9).

1.7 DEFINITIONS OF KEY CONCEPTS

1.7.1 Youth

According to the United Nations Development Programme (UNDP) (2014:9), youths are people between the ages of 15 and 24.

1.7.2 Disease

A disease can be defined as a universal phenomenon which affects the internal setting of the body, weakens the body system, and disrupts its normal functioning, causing harm to the body (Amzat & Razum 2014:7; Orubuloye 2016:2).

1.7.3 Lifestyle

Lifestyle can be defined as already established interests, personal routines, beliefs, attitudes, values, norms, habits and behavioural orientations of an individual, group or society (Lynn, Kahle, Angeline *et al* 2011:1; Fabbro, Frankus, Kekale *et al* 2011:3).

1.7.4 Risky lifestyle

According to Richmond (2014:1), risky lifestyles are those behaviours, interests, personal routines, beliefs, attitudes, values, norms, habits and behavioural orientations that expose people to potential harm, thereby preventing them from reaching their potential.

1.7.5 Lifestyle disease

Lifestyle diseases (also sometimes called diseases of civilisation) are diseases that appear to increase in frequency as countries become more industrialised and people live longer. It is a disease associated with the way a person or group of people lives. Lifestyle diseases include heart disease, strokes, obesity, type 2 diabetes, and diseases associated with smoking, harmful alcohol intake and drug abuse (Fabbro *et al* 2011:5).

1.7.6 Non-communicable diseases (NCDs)

NCDs are ailments that arise as a result of different habits and behaviours that prevent people from engaging in and carrying out their normal daily activities and drive them towards a sedentary lifestyle, which is detrimental to their health and pose near life-threatening consequences (Tabish 2017:1; Udjo & Lalthapersad-Pillay 2014:3). These diseases include cancer, diabetes, hypertension, arthritis and cardiovascular diseases.

1.7.7 Strategic action planning

Strategic action planning can be described as a set of actions which provides a structure for the execution and monitoring of outlined activities jointly agreed upon by all involved stakeholders (Nickols 2016:4; Clarke 2010:1).

1.8 OPERATIONAL DEFINITIONS

1.8.1 Risky lifestyle

In this study, the following behaviour is deemed risky lifestyle behaviours:

1.8.1.1 Physical inactivity

In this study, physical inactivity refers to not engaging in activities, such as walking for exercise, swimming or aquatic exercises, cycling or other aerobic, sports and fitness activities.

1.8.1.2 Unhealthy dietary patterns

In this study, unhealthy dietary patterns refer to inadequate consumption of water, fruits and vegetables, as well as uncontrolled consumption of pastries, pasta, fries, ice cream, and sweetened cold drinks.

1.8.1.3 Smoking

In this study, smoking refers to the inhalation of the smoke of burning tobacco encased in cigarettes, pipes and cigars, as well as the inhalation of nicotine via smokeless nicotine delivery devices.

1.8.1.4 Use of alcohol

In this study, the use of alcohol refers to the consumption of alcoholic drinks such as beer, wine, spirits or fermented cider.

1.9 RESEARCH DESIGN AND METHODOLOGY

1.9.1 Research design

A research design is a comprehensive plan for data collection in an empirical research project. It is an outline for empirical research aimed at answering specific research questions (Bhattacharjee 2012:44). A cross-sectional mixed-methods design was adopted in this study whereby snapshots of situations of unhealthy lifestyles among youths, which predispose them to NCDs later in life, were captured. Both qualitative and quantitative methods were employed to gather facts from respondents in the field, and the research was conducted over three phases, as discussed next.

1.9.1.1 Phase 1

Quantitative data were collected by means of a questionnaire (completion monitored by

the researcher to enhance the return rate) (see Annexure 2), based on a thorough literature review in order to inform the development of the strategic action plan.

1.9.1.2 Phase 2

The strategic action plan was developed using the data obtained from Phase 1 and a literature review on strategic action plan development.

1.9.1.3 Phase 3

The Delphi technique (qualitative) was used to validate the strategic action plan with stakeholders. The stakeholders were (1) academics, (2) healthcare practitioners, (3) government officials from the Ministry of Health, Ministry of Education, Ministry of Youth Development, Ministry of Agriculture, Ministry of Information, and (4) officials in government agencies, from the National Agency for Food and Drug Administration and Control (NAFDAC), National Drug Law Enforcement Agency (NDLEA), the Nigeria Police Force (NPF), and Nigeria Customs Service (NCS), that are associated with health system development, policy formulation, as well as the development of action plans, guideline and strategies.

1.9.2 Research setting

This study was conducted in six different tertiary institutions (both private and government-owned) located within the six states of the south-west region in Nigeria. The South-West region was the purposefully selected setting as a safety precaution due to the resurgence of ethnic agitation in Nigeria; including ethnic militias such as MASSOB/IPOB in Eastern Nigeria and the current Boko Haram insurgency in the Northern region of Nigeria. Since 2009, over 2,295 teachers have been killed, and 19,000 have been displaced as a result of the unrest. Over 57% of schools have been closed because of extensive damage or because they are in areas that remain unsafe (United Nations International Children's Emergency Fund (UNICEF) 2017: online; Ezemenaka &

Prouza 2016:98). Ethnic tension in Nigeria thus urged the researcher to consider the unstable environment.

1.9.3 Population

The population can be defined as all people or items with the characteristics one wishes to study and draw scientific inferences about (Bhattacharjee 2012:65).

1.9.3.1 Phase 1

There are six geo-political zones in Nigeria, with six states within the south-west zone. Approximately five million youths of both sexes from South-West Nigeria, aged 15–24 years old, formed the population for this study.

1.9.3.2 Phase 3

The population for this phase were experts from five major groups associated with health system development, policy formulation, strategic action plans, as well as the development of guidelines. The population comprised:

- Professors and senior lecturers at university and college levels involved in the teaching of medicine and nursing.
- Nurses/matrons who had been registered with the Nursing and Midwifery Council of Nigeria, who were directly involved in caring for patients with NCDs.
- Medical doctors who were consultants working for NGOs with special interest in providing solutions to health problems, and who had also designed policies, action plans and strategies in the past.
- Directors in the government ministries (from the Ministry of Health, Ministry of Education, Ministry of Youth Development, Ministry of Agriculture, Ministry of Information).
- Directors in the government agencies (from NAFDAC, NDLEA, NPF and NCS).

A total of 73 professors and senior lecturers (Group 1), 68 senior nurses/matrons (group 2), 10 medical doctors/consultants working for NGOs (group 3), 33 directors in the government ministries (group 4), and 13 directors in the government agencies (group 5) formed the population for this phase from which the Delphi panellists were drawn.

1.9.4 Sampling

Sampling is the process of selecting a segment (called a “sample”) from a population of interest with the aim of observing and providing statistical inferences about that population (Bhattacharjee 2012:65; Rahi 2017:3). In this study, a mixed-method sampling technique was employed. This allowed the researcher to generate complementary databases that include information that has both depth and breadth regarding the phenomenon under study (Creswell & Clark 2008:209).

1.9.4.1 Phase 1

For this study, a combination of stratified convenient sampling (equal representation per institution) and convenient sampling (selection of tertiary institutions and the selection of youths within each tertiary institution) were utilised to select a sample of 384 youths aged 15–24 years. Samples were drawn from each tertiary institution based on their total population in order to ensure even representativeness (see Section 3.5).

1.9.4.2 Phase 3

The Delphi method was carried out by selecting and questioning a particular group of experts at least twice in order to develop a common resolution via conclusive judgments (Szpilko 2014:1). For the Delphi technique, 25 experts were selected, as indicated in Table 1.1.

Table 1.1: Sample of Delphi panellists

Expertise	Work environment	Number
Academics	Institution A	1
	Institution B	1
	Institution C	1
	Institution D	1
	Institution E	1
Directors from government ministries	Ministry of education	1
	Ministry of Youth Development	1
	Ministry of Health	1
	Ministry of Information and Culture	1
	Ministry of Agriculture	1
Nurses/Matronas	Hospital 1	1
	Hospital 2	1
	Hospital 3	1
	Hospital 4	1
	Hospital 5	1
Directors from government agencies	NAFDAC	1
	NPF	2
	NDLEA	1
	NCS	1
NGOs	NGO 1	1
	NGO 2	1
	NGO 3	1
	NGO 4	1
	NGO 5	1
	Total	25

1.10 RESEARCH METHODS

Various methods and instruments were used to collect data in the different phases of the study, depending on the type of data required.

1.10.1 Research approach and design

1.10.1.1 Phase 1

A questionnaire (see Annexure 2) was used to describe the risky lifestyles of youths and their perception regarding lifestyle and NCDs. Both open and closed-ended questions were included. The open-ended questions enabled the researcher to give a qualitative description of youths' perceptions of the impact of risky lifestyle patterns on NCDs; the barriers to healthy lifestyle patterns; and youths' lifestyle changes that can contribute to the prevention of NCDs. The close-ended questions allowed easy quantification of data that identified current risky lifestyle practices among youths in South-West Nigeria and the factors contributing to the specific pattern of lifestyle (see Section 3.7.1 for a detailed discussion).

1.10.1.2 Phase 2

The findings obtained in Phase 1, and from a thorough literature review on youths' risky lifestyle practices and strategic action plan development, were used to develop a strategic action plan to enhance healthy lifestyles among youths and decrease NCDs in South-West Nigeria. The process of strategic action plan development followed the key steps taken by the WHO's (2013) global action plan for the prevention and control of NCDs (see Annexure 24).

1.10.1.3 Phase 3

After the development of the first draft, the strategic action plan was distributed to and reviewed by 25 Delphi panellists. The Delphi technique (qualitative) was used to validate the developed strategic action plan using an assessment tool for agreements, suggestions and comments for improvement (see Annexures 18 and 19). The Delphi method was thus an iterative process used to collect and extract the judgments of experts using a series of questionnaires interspersed with feedback. Each subsequent strategic action plan was developed based on the results of the previous round of feedback from

the participants. The process continued until 75% consensus was attained (see Section 3.7.2 for a detailed discussion).

1.10.2 Data collection

1.10.2.1 Phase 1

The researcher delivered the following documents in person to the gatekeepers at the tertiary institutions selected for this study: (1) a permission letter to carry out this research (see Annexure 7); (2) information letter for the participants (see Annexure 3); (3) a consent form for adult participants to sign if they agreed to take part in the study (see Annexure 4); (4) assent forms for minor participants (see Annexure 5); (5) a letter of request for a parent/guardian's authorisation (see Annexure 6); (6) the ethics certificate from the Health Ethics Research Committee, Department of Health Studies, UNISA (see Annexure 1 – issued 15 February 2017, with revised title approved on 20 October 2020). After the dean of students' affairs/the registrar of the tertiary institution that acted as gatekeepers gave approval for the researcher to conduct the study (see Annexures 10 to 15), an officer was assigned to assist the researcher with the study. The officer assisted in providing the researcher with the schedule of when to meet with all possible participants. The information letter for the participants; a consent form for adult participants to sign if they agreed to take part in the study; assent forms for minor participants; as well as a letter of request for parent/guardian's authorisation were then distributed to all the potential participants by the officers.

After signed parent/guardian consent forms (where applicable) and informed consent and assent letters from volunteers were received back from each institution, the researcher and research assistant met with the management of the school, introduced themselves and briefed them on the data gathering process. The date, time and venue for data collection were arranged with the volunteers in person. All students (youths aged 15–24 years) who met the inclusion criteria were approached shortly after they indicated to the college officers that they volunteered to participate in the study. A questionnaire (see

Annexure 2) informed by the study objectives and literature review was then given to each individual respondent by the researcher (see Section 3.11.1).

1.10.2.2 Phase 2

All the data obtained in Phase 1 and from the literature review on youths' risky lifestyle practices and strategic action plan development were incorporated to develop the draft strategic action plan (see Chapter 5).

1.10.2.3 Phase 3

In Phase 3, the developed draft strategic action plan was Delphied in two rounds, using an assessment tool (see Annexures 18 and 19). The gatekeepers provided the proposed panellists (identified experts) with a recruitment letter (see Annexure 8) via email to offer a brief description of the Delphi study and experts' proposed involvement in the study. The panellist could ignore the invitation by not clicking on the link provided in the recruitment letter or agree to participate by clicking on the link to gain access to the online assessment tool. The researcher gave the panellists who agreed to participate in the study enough time (2 weeks) to go through the developed draft strategic action plan with embedded assessment tool (see Table 5.3) and provide feedback until an agreement of 75% was reached for the various rounds (see Section 3.11.2).

1.11 DATA ANALYSIS

1.11.1 Phase 1

Data analysis in quantitative research refers to the process of organising, interpreting and communicating numerical information (Polit & Beck 2013:379). Quantitative data from close-ended questions were analysed using the IBM SPSS statistical software program, version 23.0. Descriptive statistics were done, frequency distribution tables were constructed, and the Chi-square test was utilised to identify possible associations between variables. A professional statistician assisted the researcher in analysing the

data for this study. For qualitative enhancement, the open-ended questions were analysed using open coding and quantitative content analysis, which allowed the researcher to convert responses to numerical data (Lebart 2012:6) (see Section 3.12.1).

1.11.2 Phase 3

Data from Delphi rounds were analysed by using simple percentages to rate the level of consensus of participants' responses on all items contained in the assessment tool. The narrative data were analysed using content analysis, as described by Tesch's eight steps to organise qualitative data (Creswell 2014:198). The plan was then adapted, and the process was repeated until 75% consensus was reached (see Section 3.12.2).

1.12 RELIABILITY AND VALIDITY

1.12.1 Reliability of the data collection instrument

Reliability is concerned with the consistency of measures by an instrument and the degree to which that instrument produces equivalent results for repeated trials (Claire, Higson-Smith & Sithole 2013:193-194).

1.12.1.1 Phase 1: Questionnaire

Reliability of the instrument was ensured by making it less dependent on subjectivity (Bhattacharjee 2012:56). The researcher ensured reliability by asking only those questions to which respondents may know the answer and by avoiding ambiguous items. As suggested by Polit and Beck (2009:336), the questionnaire was pre-tested on 30 youths to identify and detect any gaps inherent in the instrument and to determine the effectiveness and understandability of the tool (see Chapter 3).

1.12.1.2 Phase 3: Delphi technique

The Delphi technique is used whenever there is a need to devise a problem-solving strategy (Avella 2016:1). In social research, the Delphi survey is a very useful technique for gathering experts' opinion on a particular issue in order to reach consensus (Lv, Liu, Jiang *et al* 2013:2; Wilkes 2015:1). The Delphi tool of assessment that was employed in this study helped to enhance consistency as 75% consensus was used as the benchmark. In ensuring reliability, the researcher made certain that the major issues of credibility (truthfulness), fittingness (applicability), audibility (consistency) and confirmability were put in place. The assessment tool (see Annexures 18 and 19) was developed to allow for all possible comments from participants, individual input, and agreement on the final strategic action plan.

1.12.2 Measures to ensure validity

According to Kumar (2011:171), validity refers to the ability of a research instrument to demonstrate that it is investigating the intended phenomenon. It demonstrates whether a measurement instrument accurately appraises what it is supposed to measure.

1.12.2.1 Phase 1: Quantitative

The structured questionnaire was developed after a comprehensive literature review to integrate and correctly determine the main variables in the study. The researcher, supervisor and scientific review committee of the Department of Health Studies, UNISA, scrutinised the questionnaire for content and face validity. The questionnaire was also pre-tested to obtain comments from respondents.

1.12.3 Internal validity

In order to guarantee internal validity, the researcher endeavoured to eliminate study design bias, data collection bias, selection bias, information bias and non-response bias which were envisioned in Phase 1 of the study (see Section 3.8.2).

1.12.4 External validity

Polit and Beck (2012:250) posit that external validity has to do with the extent to which it can be inferred that the research findings hold true over variations in people, conditions and settings. Since the study population of this study was far less than the population of youth in Nigeria, and the difference in the study setting when compared to other parts of the country, the results cannot be generalised to the entire population of youths across the country (see Section 3.8.3).

1.12.5 Trustworthiness of Qualitative study (Phase 3)

To ensure trustworthiness, a two-round Delphi technique was used to validate and approve the strategic action plan developed to improve youths' lifestyle and decrease NCDs in South-West Nigeria. The principles of credibility, dependability, transferability, confirmability and authenticity were applied to enhance trustworthiness, as discussed in depth in Chapter 3.

1.13 ETHICAL CONSIDERATIONS

Ethical approval for the study was obtained from the Health Research Ethics Committee of the Department of Health Studies, University of South Africa (see Annexure 1). Approval to conduct this study was obtained from the dean of students' affairs/registrar of all six tertiary institutions (see Annexure 10 to 15). A written information letter (see Annexure 3) was provided to ensure informed consent for the protection of respondents' rights. Parental/guardian permission was obtained for participants younger than 18 years

of age (see Annexure 6). The nature, purpose and benefits of the study were thoroughly explained to the respondents in an information leaflet (see Annexure 3).

As suggested by Bless *et al* (2013:28), this research was strictly guided by the principles of (1) autonomy, which incorporates the freedom of individuals' actions and choices to decide whether to participate in research; (2) justice, which is based on the belief that people should be treated equally and not discriminated against; (3) fidelity, which implies faithfulness and keeping promises or agreements, specifically between the researcher and the participant; (4) confidentiality/anonymity, which has to do with the protection of information received from participants and not associating data with the name of the respondent; (5) non-maleficence, which means that participants must not be harmed by participating in this study; and (6) beneficence, which posits that this research must also contribute to the wellbeing of others. All the above principles were explained in the information letter (see Annexure 3).

1.14 SIGNIFICANCE OF THE STUDY

The study revealed that a significant proportion of youths in South-West Nigeria engage in unsafe and risky lifestyles (see Sections 4.4 to 4.7), mostly due to their personal attitudes, perceptions and beliefs. Effective implementation of the strategic action plan can help to inform youths about non-risky lifestyles and may contribute to a decrease in levels of exposure to risks in developing NCDs in South-West Nigeria, ultimately reducing the number of deaths from NCDs in the future (see Section 7.4).

1.15 STRUCTURE OF THE THESIS

The structure of the thesis is illustrated in Table 1.2.

Table 1.2: Thesis structure and chapter layout

Chapter	Content
1	The overview of the study
2	Literature review on: 1. The TPB 2. Youths' lifestyle and NCDs 3. Strategic action plan development
3	1. Research design 2. The methodology followed - population, sampling, data gathering techniques, ethical aspects, data gathering process as well validity and reliability of: 2.1 Phase1 2.2 Phase 2 2.3 Phase 3
4	Phase 1: 1. Data analysis and presentation 2. Interpretation of the findings 3. Discussion of the findings
5	Phase 2: 1. The principles of strategic action plan development 2. The development of the strategic action plan 3. The draft strategic action plan
6	Phase 3: 1. e-Delphi technique. 2. The validation process 3. Data interpretation and discussion of findings 4. The validated strategic action plan
7	1. Conclusions 2. Recommendations for implementing the strategic action plan 3. The limitations of the study

1.16 CONCLUSION

Chapter 1 provided an overview of the study and the motivation for the importance of developing a strategic action plan that can be implemented in Nigeria with the aim of reducing youths' engagement in risky behaviour, and ultimately decreasing mortality from NCDs in South-West Nigeria. How the study unfolded in order to reach all the objectives of the study is presented in the chapters to follow.

CHAPTER 2

LITERATURE REVIEW

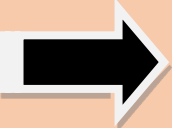
2.1 INTRODUCTION

This chapter (see Table 2.1) provides the literature review on the TPB, behavioural characteristics and lifestyles of youths that predispose them to NCDs as well as the processes, principles and requirements for strategic action plan development within the healthcare context. NCDs have been established to be a global problem (PRB 2015:1) and are the principal source of mortality (WHO 2014:7); accounting for about 41 million deaths every year (WHO 2018:online). Diseases such as cardiovascular diseases, cancer, chronic respiratory diseases, as well as diabetes keep escalating, particularly in low and middle-income countries (WHO 2010:2; Kenya National Bureau of Statistics (KNBS) 2015:3; WHO 2017:1). A large percentage of NCDs are avertable if there is a decrease in the four main behavioural factors that increase the risk of dying from an NCD, namely smoking, physical inactivity, harmful use of alcohol, and an unhealthy diet (WHO 2010:1; WHO 2017:1). Health-related behavioural choices in the early phases of individuals' lives determine the development of disease associated with lifestyle in later periods of life and need to be investigated (Wang, Xing & Wu 2013:1; Reshma & Kaneda 2015:9).

Diverse databases (Google search engine, Google scholar, Pub-med, UNISA Library repository, Science Direct, Research gate, Medline, WHO, PRB, UNDP, UNICEF) were searched, and the words 'health', 'disease', 'illness', 'NCDs', 'youth', 'lifestyle and risky lifestyle behaviours', 'theory of planned behaviour', 'strategic action planning' and 'socio-ecological model' were used to obtain relevant literature. Important fragments of medical, nursing and sociology textbooks, reports and documents were also thoroughly scrutinised in order to gain an understanding and provide background information about the key issues related to the topic and explore relevant narratives.

To further provide a concrete basis for this study, the theoretical foundation adopted for this study was the TPB.

Table 2.1: Thesis structure and chapter layout

CHAPTER	DESCRIPTION OF CHAPTER CONTENT	PURPOSE
CHAPTER 1	OVERVIEW OF THE STUDY	
CHAPTER 2 	LITERATURE REVIEW 1. The Theory of Planned Behaviour (TPB) 2. Lifestyle and non-communicable diseases among youths	Questionnaire Development

2.2 THEORETICAL BACKGROUND TO THE STUDY

2.2.1 Theory

A theory can be defined as a set of views, notions, ideas and statements that provide an explicit explanation to problems arising from the actions or behaviour of people. A theory is expected to perform both explanatory and predictive functions via interrelationships of ideas; thereby resulting in insights/solutions to important matters. An effective theory therefore shows a logical way of comprehending circumstances in order to predict, explain, or underpin the correlations between variables (Schaefer 2011:8; Ritzer 2015:3; Mahesh & Neena 2016:10; Udo-Akang 2012:2).

Several scholars agree that research cannot be carried out without utilising a theory to provide structure and direction (Udo-Akang 2012:4-5). One of the uses of theory is the provision of answers to research questions. A theory also helps to reveal how to deal with health-related questions by providing answers to questions stating “why,” “what,” and “how” (Mahesh & Neena 2016:10). Research has indicated that health theories have the capacity to explain why individuals involve themselves in certain behaviour; why people make the decisions they make; which important steps to take in order to effect change; what plans and actions are most likely to influence positive change; and how to evaluate positive change. A theory also guides researchers in how best to develop health-related policies and programmes that would consider the right audience in order to ensure effective impact. Conclusively, a theory makes provision for individuals’ understanding of various problems and providing interventions that translate into positive results (Koepl

& Robertson 2015:6). Having carefully perused the various theories that best explain the reasons for human actions and behaviours, the TPB was used to underpin the context of this work.

2.2.2 Theory of Planned Behaviour (TPB)

The TPB is broadly mentioned in behaviour theories because of its relevance and applicability to narratives, which border on the relationship between individuals' attitudes and behaviours. This theory presumes that individuals' attitude towards outcomes of behaviour is a determining factor for acting the way they do (Motalebi, Iranagh, Abdollahi *et al* 2014:1; Hasbullah Mahajar & Salleh 2014:2). However, these attitudes clearly show individuals' helpful or harmful assessment of a particular behaviour based on perceived social pressure from important others on whether to behave in certain ways (Kyle, White, Hyde *et al* 2014:18).

The TPB was developed from the theory of reasoned action (TRA), which points out that the intention to perform an action is the best predictor of behaviour. The fundamentals of the TRA come from the field of social psychology. Social psychologists tried to explain why attitude impinges on behaviour, which is, of course, very germane to this study (Otieno, Liyala, Odongo *et al* 2016:1). Using the theory to explain and predict likely behaviour could be a possible means of spotting different influences on risky behaviours that could be mapped out for change (Morris, Marzano, Dandy *et al* 2012:5).

Different contributions to literature by scholars indicate that behavioural intention, the attitude towards the behaviour and subjective norms are the major constructs on which the TPB is built. Behavioural intention (see Table 2.2) is the factor that motivates the manipulation of behaviour. The stronger the intentions to take part in a certain action, the stronger the likelihood to execute that behaviour. The attitude (see Table 2.2) of an individual towards certain behaviours is the degree to which an individual has either positive or negative inclinations towards such action. This implies that attitude entails behavioural beliefs and assessment of its outcome in the long run.

The last construct of this theory is the subjective construct (see Table 2.2), which is the compelling social power that spurs the choice of performing the behaviour or not (Cooke, Dahdah, Norman *et al* 2016:11; Bazargan-Hejazi, Teruya, Pan *et al* 2017:1; Asare & Heights 2015:2; Motalebi *et al* 2014:1).

Table 2.2: Theory of planned behaviour

Concept	Definition	Measurement Approach
Behavioural intention	Perceived likelihood of performing the behaviour.	Are you likely or unlikely to (perform the behaviour)?
Attitude	Personal evaluation of the behaviour.	Do you see (the behaviour) as good, neutral or bad?
Subjective norm	Beliefs about whether key people approve or disapprove of the behaviour; motivation to behave in a way that gains their approval.	Do you agree or disagree that most people approve of/disapprove of (the behaviour)?
Perceived behavioural control	Belief that one has, and can exercise, control over performing the behaviour.	Do you believe (performing the behaviour) is up to you, or not up to you?

(Division of Cancer Control and Population Sciences, National Cancer Institute, 2005)

Even though these three constructs are determinants of a person’s overall motivation for performing the behaviour, attitude was found to be the strongest determinant of intention, while intention was found to reconcile the relationship of willingness to carry out an action on perceived behavioural control. The TPB, illustrated in Table 2.2, differs from the TRA (see Figure 2.1) in that TRA incorporates one more construct, perceived behavioural control, which has to do with people’s belief that they are capable of controlling any behaviour (Cooke, Dahdah, Norman *et al* 2016:11; Bazargan-Hejazi *et al* 2017:1; Asare 2015:2; Motalebi, Iranagh, Abdollahi *et al* 2014:1).

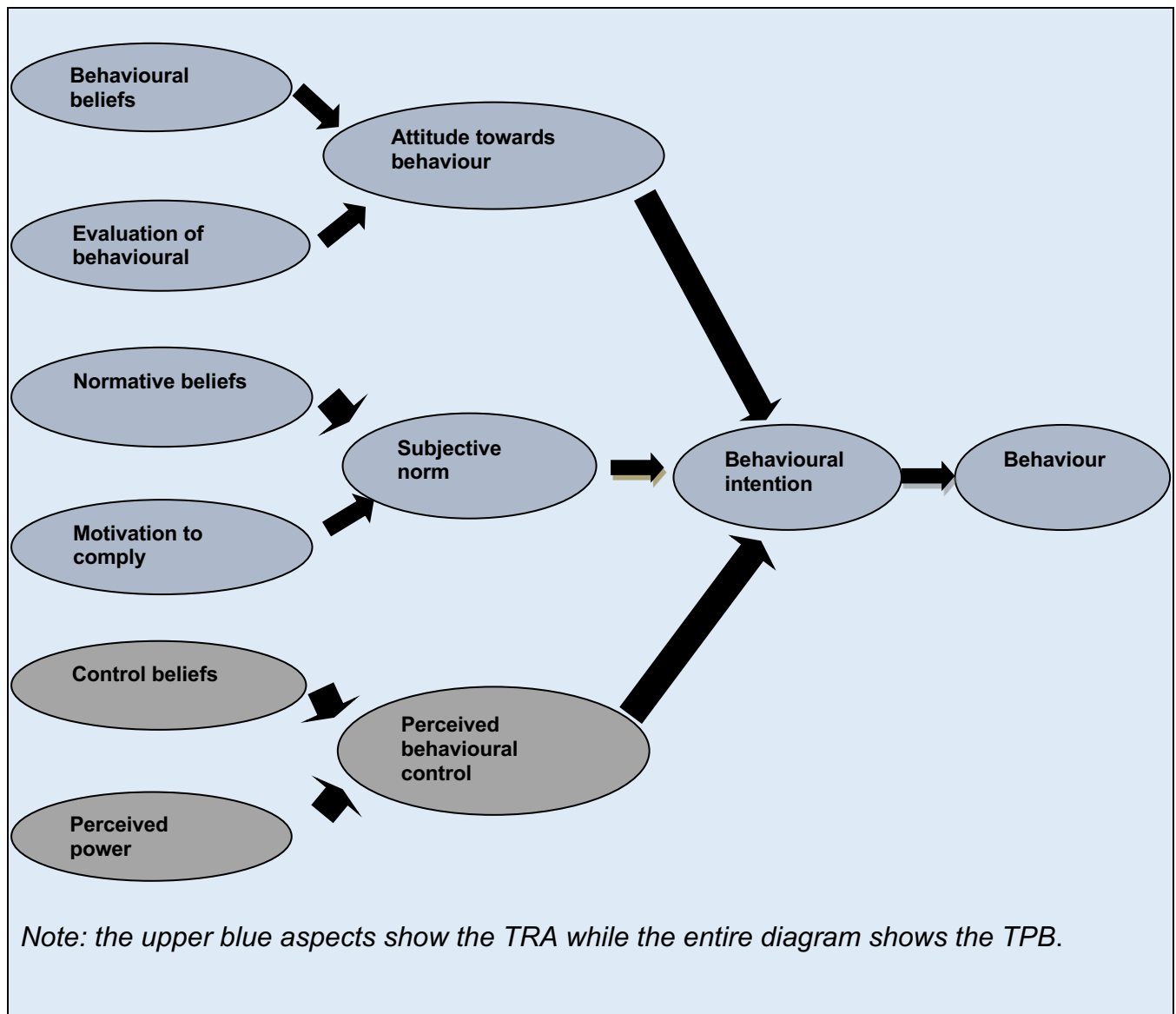


Figure 2.1: Theory of planned behaviour and reasoned action

(Division of Cancer Control and Population Sciences, National Cancer Institute, 2005)

Behavioural control is one’s view of internal or external controls restraining the particular behaviour in question. Internal controls may take account of the person’s capacity to execute the proposed behaviour (self-efficacy), while external control connotes the accessibility of external resources required to carry out that behaviour (facilitating circumstances). Generally speaking, individuals’ ability to carry out an action is dependent on strong intentions to perform the action and how convinced they are about what others think about performing such actions (Hasbullah, Mahajar & Salleh 2014:1; Bhattacharjee

2012:31). Having concisely explained the TPB, it is pertinent also to examine its relevance and applicability to this study.

2.2.3 Application of Theory of Planned Behaviour (TPB) to this study

Youths' behaviours are influenced by those they acknowledge as 'the significant others'. These significant others are their peers, friends and family members who play key roles in youths' daily activities. Behaviour that is deemed acceptable or unacceptable by peers, friends or family members will be followed by youth. The moment individual youths observe that the result from carrying out certain behaviours is either constructive or destructive, they begin to exhibit positive or negative attitudes towards such behaviour, as the case may be. Likewise, if 'significant others' (peers, friends or family members) regard a particular behaviour as either positive or negative, youths get motivated to meet their expectations.

Going by the conclusions made by various scholars on the three major constructs of TPB, youths' attitude towards both healthy and unhealthy/risky lifestyles (see Sections 2.3.1 & 2.5.1) is dependent on their perception of such behaviour as either healthy or unhealthy/risky. This implies that youths' attitudes towards healthy and unhealthy lifestyles entail behavioural beliefs and assessments of the outcome in the long run. Youths' attitude also entails the influence of compelling social power on their individual choices of either living a healthy or unhealthy/risky lifestyle. This theory therefore explains the motive behind youths' behaviours with respect to their lifestyle. The stronger youths' motivation to have a healthy behaviour is, the more likely it is that they will actually perform that behaviour. Extrinsic factors and restrictions can, however, prevent individual youths from performing a particular behaviour, even when they have the intention to do so (Health Communication Capacity Collaborative 2013:1).

Healthy lifestyle behaviours that seek to prevent NCD in the context of this study do not happen suddenly; it is a product of youths going through a decision-making process. This involves youths being able to process the information available to them, and then making

a decision on the line of action to take. Change from unhealthy behaviours to healthy behaviours among youths is expected to happen after they have carefully reflected on the outcomes and consequences of performing the behaviour and their beliefs about what other people expect them to do.

The Nigerian youth population is not exposed to sufficient information on the impact of their lifestyle on the development of NCDs and how it can be prevented, thus the urgent need to move towards youths' behaviour change. The TPB and reasoned action are relevant to behaviour change by showing that attitudes and beliefs are significant in people's choice of action. An action plan, underpinned by the TPB, can contribute to the prevention of risky lifestyles such as smoking, harmful consumption of alcohol, unhealthy diet, and physical inactivity among youths in order to reduce their risk of developing NCDs later in life. Youth should therefore be motivated, influenced by their significant others, to change their risky lifestyles and attitudes by outlining specific NCDs' preventive behaviours in certain directions and strengthening their beliefs about what their significant others expect from them. It is, however, important to consider what health and a healthy lifestyle is in order to fully understand the impact of lifestyle on the development of NCDs.

2.3 HEALTH AND THE YOUTH

Health dictates the value of any individual life, including the social and economic development of individuals in society. Good health promotes growth in both social and economic aspects (WEF 2013:4), and therefore all attempts must be made to contribute to the health of youth in society. Traditionally, health was defined solely in terms of the absence of disease, symptoms, signs or problems (Amzat & Razum 2014:1), but in 1948, rather than restricting health to the absence of illness, the WHO defined 'health' as a "complete state of physical, mental and social wellbeing, and not merely the absence of disease or infirmity" (WHO 1948:100). This definition is criticised by many scholars due to the lack of enough specificity for operational application to real-life circumstances because of the absoluteness of the word 'complete' in relation to wellbeing. Health as a concept should be more focused on individuals' ability to live with illness and develop

coping strategies (Card 2017:1; Awofeso 2012:3; Brüssow 2013:1; Huber, Knottnerus, Green *et al* 2011:1; Amzat & Razum 2014:3; Chirico 2016:1).

Health is therefore seen as central to societal development and forms the most important support for socio-economic development. Ensuring healthy lives and promoting the wellbeing of everyone at all ages is therefore paramount (Chirico 2016:3; UNAIDS, UNICEF, UNFPA & WHO 2012:3; WEF 2013:5). The need remains to consult many stakeholders and diverse cultures because individual health and longevity are influenced by many factors, such as the work people do, their level of education, income, where people live, economic conditions, income/wealth, education, gender, peace and security, genetics, behavioural patterns, health systems, and physical and social environments. These factors all have an impact on health, the quality of individuals' early childhood experiences, and the physical environment that surrounds them (Canadian Council on Social Determinants of Health (CCSDH) 2015:2; Huber *et al* 2011:2). Any individual can therefore be healthy or unhealthy, experiencing illness caused by disease itself or by risky health behaviour that speeds up the development of NCDs.

Literature reflects that current lifestyle behaviours and living conditions of youths can affect both their present and future health, as well as the health of future generations. Youths' health outcomes are embedded in their social environments as their behaviours are influenced at the individual, peer, family, school, community, and societal levels (Sixty-fourth World Health Assembly 2011:1; Loke & Mak 2013:1; UK cabinet office 2014:1). The need to examine who the youths are and how their lifestyles affect their health in the future therefore cannot be overemphasised.

Youths are individuals who fall between the age range of 15–24 years. This age range is often used by the United Nations (UN) and others for statistical purposes although 'youth', as a concept, differs from culture to culture and from society to society (UN 2020:online; Ministry of Health 2009:5). In most societies, the transition of children from childhood to youth occurs in systematic stages. These changes are no longer as predictable as before, and attempting to have a universal definition of 'youth' can be a very difficult task (Sixty-

fourth World Health Assembly 2011:1; Ministry of Health, 2009:6). About 1.8 billion young people globally fall between the ages of 15–24 years, making up the biggest cohort in history, thereby providing opportunities for different societies to shape the world's social, economic and health future through the youths. Moreover, this number is projected to increase to 2 billion by 2032, with 90% of these youths living in low- and middle-income countries (Gore, Bloem, Patton *et al* 2011:1).

In Africa, approximately 20% of the overall population are currently youths. Moreover, it is projected that the youth population in Africa will have increased by 42% by 2030 (UN 2015:1). The rate at which the youth population rises makes their health status critical, not only as a determinant of future population health, but also for social and economic development (Gore *et al* 2011:1). African youth therefore have the potential to be a great drive for Africa's development, as long as the necessary investments in both human capita and health are made (UN 2011:1).

Today, the health of young people is highly connected to their health-related behaviours and attitudes. Although NCDs and deaths from NCDs may present in adulthood, exposure to risk factors begins in early life. Young adulthood is also a major stage when adult behavioural patterns are established. Unhealthy lifestyles observed in adulthood are believed to be strongly connected with an unhealthy/risky lifestyle as a youth, yet the reality is that the basis of diseases found in society is dependent on lifestyle choices; still, the youth period is often overlooked (Bozlar & Arslanoglu 2016:1; Ssewanyana, Abubakar, Baar *et al* 2018:1). Typically, when risky and unhealthy behaviours persist into adulthood, they become difficult to change (WHO 2012:8; Essa & El-Shemy 2015:1; Reshma & Kaneda 2015:2; WHO 2011:3; Khuwaja, Khawaja, Motwani *et al* 2011:2; Cooper, De Lannoy & Rule 2015:1).

Therefore, in order to make the best of the youth population and to secure the future of any country, there is a serious need to invest in their health. Regrettably, the global public health system has fundamentally ignored the health of young people because youths are generally perceived as healthy (Gore *et al* 2011:1). Even though the WHO has already

warned against the rising number of NCD cases among young people, it is rather unfortunate that young people seem not to be aware of the effects of unhealthy behaviours on their health, so they are less likely to engage in health-promoting activities (Ellert & Kurth 2013:11; Essa & El-Shemy 2015:1). The effective implementation of youth policies in this area across all regions therefore demands that youth-related issues be given high priority in national development programmes; in the absence of urgent response, youths will be more burdened by NCDs (Reshma & Kaneda 2015:2). The lifestyles engaged in by the youths at different capacities that later impinge their health are discussed in the sections that follow.

2.3.1 Healthy lifestyle

A healthy lifestyle describes a way of life that reduces the risk of being ill or dying early. It is a way of life that helps people enjoy a greater quality of health throughout their lifetime. Healthy living also entails the creation and preservation of health (Li, Pan, Wang *et al* 2018:1; Saint & Krueger 2017:1). Evidence found in the literature indicates that adherence to a healthy way of life, regardless of age, compared to an unhealthy way of life, is connected with reduced risk of premature mortality from lifestyle-related diseases and prolonged life expectancy (Fazel-tabar, Zaroudi, Sepanlou *et al* 2016:1; Dima-Cozma, Gavriluta, Mitrea *et al* 2014:1; Kushner & Mechanick 2016:3). Aspects that contribute to a healthy lifestyle, among others, are a healthy diet, physical activity, smoking cessation, and moderate alcohol consumption.

2.3.1.1 Diet

Diet can be referred to as the food and drink an individual consumes daily and the physical conditions connected to eating. Diet is the greatest factor in lifestyle and has a direct and positive relation to health (Barb 2018:1; Farhud 2015:1). A healthy diet contains the prescribed daily required nutrients and calories that are important to successfully prevent diseases in the human body. Healthy eating also involves the consumption of foods in accurate portions according to the recommendations of the Food Pyramid (Irish Heart

Foundation & National Youth Council of Ireland 2010:39; Aleris-Hamlet 2016:2). Therefore, according to Gil, Ruiz-Lopez, Fernandez-Gonzalez *et al* (2014:4), a recommended daily diet should include the following:

- (i) Four to six portions of cereals (bread, pasta, etc.), with at least one-half of the foods from whole-grain cereals (1 portion = 60 to 68g of pasta or rice or 40 to 60g of bread).
- (ii) At least five portions (1 portion = 150 to 200g), alongside a minimum of two fresh portions of fruits, vegetables, and similar products which are rich in fibre and micronutrients.
- (iii) Two to three portions (1 portion = 200 to 250 ml of milk, 200 to 250g of yoghurt, or 80g of fresh cheese) of low-fat milk and dairy products, which are high in protein quality, with calcium and other minerals and vitamins.
- (iv) Three to five portions (1 portion = 10 ml) of healthy unsaturated oils, two to three portions of protein-rich foods of animal origin (range: 60 to 150 g) including poultry, other lean meats, eggs, fish, plant-based protein-rich foods, such as legumes and nuts.
- (v) Consumption of 1.5 to 2 litres of water, while wine should be consumed in moderation; one glass/day of red wine (150 to 200 ml) might be beneficial because of the presence of polyphenols.

Epidemiologic evidence in the literature suggests that healthy dietary parameters and a change in dietary preference help to reverse or moderate the disease burden associated with increased risk for developing coronary heart disease, diabetes, cancers, and stroke (Tomba 2011:3).

2.3.1.2 Physical activity

In addition to following a healthy diet, physical activity has been confirmed to be a lifestyle factor that reduces one's risk of being ill or dying early. Physical activity is defined as any bodily movement that involves the expense of energy and muscular effort, usually measured in kilocalories (kcal) per unit of time (Thirlaway & Upton 2009:85; Senapati,

Bharti & Bhattacharya 2015:2). The suggested guidelines for physical activity include moderate-intensity aerobic physical exercise of at least 150 minutes per week. Activity can be achieved by walking briskly, climbing stairs, dancing, gardening, or engaging in household chores. Vigorous physical activity of at least 75 minutes – achievable through gardening, running, fast cycling, fast swimming, or playing sport per week – or a combination of moderate and vigorous muscle-strengthening activities carried out two days per week is also recommended (WHO 2018:10; Lee, Eric, Kelly *et al* 2018:1). Physical activity can be beneficial in lowering blood pressure, increasing stability, increasing flexibility, improving blood cholesterol levels and weight management. It also improves and maintains muscle strength, coordination, balance, speed, agility, bone strength, motor skills, as well as lowering the body mass index (BMI). A lowered BMI, in turn, reduces the risk of coronary heart disease and hypertension/stroke, type 2 diabetes, colon cancer, breast cancer, musculoskeletal problems and depression (Commonwealth Secretariat 2011:19; Kottke, Wilkinson, Baechler *et al* 2016:10; Hamlet 2016:2; Irish Heart Foundation & National Youth Council of Ireland 2010:23).

On the continuum, the opposite of health is disease.

2.4 DISEASE

Just as the definition of health is complex, so is the definition of a disease. This is mostly because of the differences in the aetiology of disease itself. Disease is a universal phenomenon which affects the internal setting of the body, weakens the body system and disrupts its normal functioning, causing harm to the body (Amzat & Razum 2014:7; Orubuloye 2016:2; Brüssow 2013:1; Gall, Valkanas, Bello *et al* 2017:2). Disease can be classified as either communicable or non-communicable.

2.4.1 Communicable disease

A communicable disease is a disease that is transmitted from one person to another through contact with an infected person, animal, food, surface, arthropod, or inanimate

reservoir to a vulnerable host, blood and bodily fluids, inhaling airborne viruses, or by insect bites; causing illness (Alameda County Public Health Department (ACCPHD) 2013:1). Communicable diseases are therefore infectious and contagious (Vermont Department of Health Agency of Education 2015:1; Nova Scotia Health Authority 2015:5; UNICEF, AMREF & Ethiopia Federal Ministry of Health 2011:1).

2.4.2 Non-communicable disease (NCD)

An NCD is neither contagious nor infectious. It is a disease that develops over a long period of time because of its nature of slow progression or development (CDC 2013:4; Bloom, Cafiero, Jane-Llopis *et al* 2011:9). NCDs affect large numbers of people below the age of 60, presenting a significant burden on health, the economy, and human potential (WHO 2013:1). It is an established fact that NCDs are epidemics of the 21st century and are the major causes of death worldwide (WHO 2014:1; WHO 2015:10; Balbus, Barouki, Birnbaum *et al* 2013:1; Hunter & Reddy 2013:1; Islam *et al* 2014:1; Sheik, Evans, Morden *et al* 2016:1; Bloom *et al* 2011:7). Of the estimated 58 million annual global deaths, NCDs kill 41 million people each year, which is equivalent to 71% of deaths (WHO 2018a:1). The burden of NCDs causes a severe economic challenge, and has the capacity to push households into poverty and keep them in it.

NCDs have been estimated to become the leading cause of mortality in sub-Saharan Africa by 2030 (The Republic of Ghana Ministry of Health 2012:6; Dalal, Beunza, Volmink *et al* 2011:2; WHO 2013:7). Sadly, the global scourge of NCDs creates varying challenges for the health system (Hunter & Reddy 2013:3). In recent years, there has been an increasing impact of NCDs on the health status of different populations and an uneven occurrence of NCDs in developing countries (Islam *et al* 2014:1).

The WHO (2011a:9) documented that NCDs arise from a combination of modifiable and non-modifiable risk factors. These causes may be representations of lifestyle habits that present symptoms such as raised blood pressure, increased blood glucose, unusual thirst, frequent urination, slow-healing cuts, elevated blood lipids, obesity, laboured

breathing, blurred vision, unexplained tiredness, rapid weight loss, and so forth (Aryal, Mehata, Neupane *et al* 2015:3; Tabish 2017:1). Individual behaviour change, government involvement, policy development, and the development of universal health programmes are therefore crucial in tackling NCDs (WHO 2014:vii; Ige, Owoaje & Adebisi 2013:5).

To explain the focus of this study, the risk factors that lead to the onset of NCDs are discussed next.

2.5 RISK FACTORS FOR NON-COMMUNICABLE DISEASE

A risk factor is defined as anything that increases an individual's likelihood of developing a disease (Tabish 2017:2; WHO 2011a:9; Bloom *et al* 2011:9). There are a number of risk factors that lead to the onset and development of NCDs, and these are either modifiable or non-modifiable. The meaning of modifiable and non-modifiable risk factors are explained as follows.

- (i) Non-modifiable risk factors mean a risk factor that cannot be controlled or adjusted by the use of an intervention. It also denotes features that cannot be altered or changed by an individual or the environment. No matter how an individual tries to control or make an attempt to modify their lifestyle, it makes no difference or improvement to the risk factors. These factors include age, race, gender, and genetics (Tabish 2017:2; WHO 2011a:9; Bloom *et al* 2011:9).
- (ii) Modifiable risk factors refer to changeable individual attributes, characteristics or behaviours that can be improved on, changed, or combated by intervention, thereby decreasing the likelihood of disease occurrence. Modifiable risk factors are the features over which individuals have the capacity to modify and adjust in order to improve health outcomes (Bloom *et al* 2011:9; Tabish 2017:2; Wu, Guo, Chatterjet *et al* 2015:1; Hunter & Reddy 2013:2; Tagurum, Okoh, Inalegwu *et al* 2015:1). The WHO typically refers to the four major modifiable factors attributing to NCDs as tobacco

smoking, excessive and dangerous alcohol consumption, unhealthy diet, and a lack of physical activity (WHO 2011a:9).

2.5.1 Unhealthy lifestyle

Lifestyle is defined as the personal routines, attitudes, values, norms or habits of an individual or group of individuals. It is a person's regular way of life, which has already been established. An individual's lifestyle entails a mixture of personal habits, usual manners and approaches of getting things done, and reasoned actions which shows the individual's attitudes and standards (Fabbro *et al* 2011:3). People's lifestyles are generally acknowledged as affecting their individual health and either decreasing or increasing their risk of dying young (Buck & Frosini 2012:2). However, individuals' health status is dependent on their already established way of life, which could either be healthy or unhealthy. Literature reveals that a lifestyle with physical inactivity, tobacco smoking, harmful consumption of alcohol, and unhealthy diet are regarded as unhealthy, and a leading cause of preventable NCD mortality worldwide. The influence of modernisation on individual lifestyles has led to a decrease in healthy living and the development of various health challenges. This decline in healthy lifestyle has resulted in an alarming increase in NCDs (WEF 2013:4; WHO 2017:2).

Young adulthood is a major stage when adult behavioural patterns are established. Generally, this age group is at the peak of physical health, and their chances of being caught up in risk-taking lifestyle behaviours are very high, even though the negative consequences of these behaviours can be lifelong (Essa & El-Shemy 2015:1; Astrazeneca 2012:1; Northwest bulletin 2014:1). The WHO estimates that 70% of premature deaths in adults worldwide are the result of participation in risky behaviour at a young age (Reshma & Kaneda 2015:2; Chowdry, Kelly, & Rasul 2013:6). NCDs have also been confirmed in the literature to have their roots in unhealthy lifestyles engaged in during a young age; it is therefore important for young people to understand NCDs and their risk factors (WHO 2015:5; WHO 2014:3; UN 2015:5). It will thus not be out of place

to examine youths' level of involvement in the four major risk factors for NCDs, as identified by the WHO.

Lifestyle disorders are becoming more common in modern society, affecting younger populations, especially the young urban population. Therefore, choosing a healthy living is usually dependent on the influence of diverse factors, including social and environmental factors, lack of access to essential preventive measures, and lack of treatment and care. All these factors, and many more, prevent individuals from living healthily as these factors define individuals' everyday decisions (WHO 2011:7; Senapati, Bharti & Bhattacharya 2015:2; WEF 2013:5). The following lifestyles are considered detrimental to good health throughout a person's lifetime:

2.5.1.1 Unhealthy diet

Youths' dietary pattern is influenced by many aspects of society, including family set-up, communities, schools, child-care plans, healthcare providers, government agencies, the media, as well as food and beverage companies. Each sector plays an important role in improving and promoting the dietary behaviours of youths (WHO 2009:1; Chandon & Wansink 2012:8; Maltese Ministry for Education and Employment 2015:5).

Unhealthy dietary patterns established during youth increase an individual's risks for NCDs. This is because young adulthood is a significant stage where eating patterns have a major effect on individuals' health and wellbeing. Unhealthy diets often refer to those foods that are very high in specific nutrients that are most relevant for the development of NCDs (see Section 2.4.2) (Morgan 2012:4; Mozaffarian, Hao, Rimm *et al* 2011:7). It has been confirmed in the literature that, over time, the human diet has changed significantly as a result of the rapid impact of globalisation and urbanisation on the production and choice of food products. Also, poor dietary patterns have been documented to cause about 2.8 million casualties per annum (WHO 2011:8).

Flooding the market with cheap and enticing processed foods that are very high in refined starch, sugar, salt and dangerous fats are now the order of the day and are very detrimental to the health of the general populace (WHO 2011:9; Thirlaway & Upton 2009:61). The consequences of purchasing and consuming these products burden people with increased BMI (see Section 2.5.1.3), leading to overweight and obesity (see Section 2.5.1.3), which predispose people to serious health challenges such as the development of cardiovascular diseases (see Section 2.6.1), diabetes (see Section 2.6.2), and certain forms of cancer (Sassi, Cecchini, Lauer *et al* 2010:5; WHO 2011:9; Ekpenyong *et al* 2012:4; Awosan *et al* 2014:2; Li *et al* 2018:1).

2.5.1.2 Physical inactivity

Physical inactivity is described as the absence of bodily activity (Senapati *et al* 2015:2). About 20% to 30% of people who are not physically active are more prone to developing NCDs and succumbing to premature death than people who are physically active (WHO 2013b:6). Anyone who does not engage in moderate-intensity aerobic physical exercise such as walking briskly, climbing stairs, dancing, gardening or engaging in household chores is physically inactive. So also, any individual who fails to engage in vigorous physical activity such as gardening, running, fast cycling, fast swimming, or playing sport is said to be physically inactive (WHO 2018b:10).

Physical inactivity is an important risk factor for cardiovascular diseases, cancer and diabetes, which contribute to higher mortality. Unfortunately, an increasing number of people engage in sitting for prolonged hours every day due to changes in work patterns, transport, and increased use/dependence on technology at every point in their daily activities; this impairs their health, no matter what else they do. Physical inactivity accounts for increased levels of high blood pressure, an abnormal amount of lipid – mainly cholesterol or fats in the blood – high blood glucose, respiratory diseases, as well as obesity which is extensively connected with type 2 diabetes, hypertension and cardiovascular diseases (WHO 2011:4; Senapati *et al* 2015:2; PRB, 2015:5). These health conditions are, of course, connected to dangerous but preventable unhealthy

lifestyles (Inyang & Okey-Orji 2015:1; Kaur & Kaur 2015:1; WHO 2018b:10; WHO 2015:4; Commonwealth Secretariat 2011:19; WHO 2010:7). Inadequate physical activity among youths usually extends into adulthood and may increase their risk for developing NCDs by 20% to 30% (Essa & El-Shemy 2015:1; WHO 2013b:6; Awosan *et al* 2014:3).

In addition, approximately 3.2 million people die each year due to physical inactivity because people who are not physically active are at the risk of becoming obese (Essa & El-Shemy 2015:1; WHO 2013b:6; Awosan *et al* 2014:3), hence the need to further discuss obesity and its impact on human health.

2.5.1.3 Obesity

Obesity is an abnormal or uneven accumulation of excess fat that cause poor health and is on the rise, even among children and young people; it begins at some point in childhood or adolescence and continues into adulthood. This complicates the risk of developing diseases associated with obesity (Thirlaway & Upton 2009:55). The negative health outcomes range from increased risk of untimely death, to severe chronic conditions that decrease general quality of life (Agrawal 2015:1; Thirlaway & Upton 2009:53; Iyam, Inah, Udonwa *et al* 2013:13; Matheson, King & Everett 2012:1; Hamlet 2016:2). Moreover, the BMI is defined as the individual's weight in kilograms divided by the square of the height in metres (kg/m^2). The BMI is the metric presently employed for describing anthropometric height/weight characteristics in adults, stands for a check of an individual's corpulence, and is also broadly utilised as a determining factor for the onset of or the prevalence of several health issues. A BMI over $25 \text{ kg}/\text{m}^2$ is regarded as 'overweight', while a BMI of over $30 \text{ kg}/\text{m}^2$ is defined as 'obese' (Nuttall 2015:1; Chung 2015:1; Japanese Nursing Association 2014:3).

2.5.1.4 Smoking

Tobacco smoking has been listed as an unhealthy lifestyle and a leading cause of poor health. Smoking is defined as the act or routine of inhaling and exhaling the smoke of

tobacco or a drug, thus breathing in the smoke formed by the burning of an element (usually of tobacco in a cigarette, cigar, or pipe) through the mouth (Sweanor, Henningfield, Ann Rose *et al* 2019:1). At present, about 1 billion people across the world are smokers and are estimated to consume about 6 trillion cigarettes yearly (WHO 2012:17). Tobacco is the only legal drug that destroys a lot of its consumers when used exactly as proposed by manufacturers (bantobacco.org:online). Tobacco smoking (both smoking and smokeless tobacco products) globally is accountable for the untimely death of 7.2 million people every year, including effects from breathing in second-hand smoke (WHO 2017:2; WHO 2015:1; WHO 2012:1).

Quite a number of risks associated with smoking have been documented. In a report compiled by the PRB, tobacco use is the single most avertable and avoidable cause of disease, disability, and death worldwide; with about 3.4 million tobacco-associated global deaths (Reshma & Kaneda 2015:4; NCD Alliance 2011:6; Rao, Aslam, Zaheer *et al* 2014:1). Smokers are said to have a greater risk of developing cardiovascular disease and chronic lung disease (COPD), circulatory diseases, type 2 diabetes, as well as cerebral haemorrhages. Smoking can thwart the healing of stomach ulcers and also put individuals at risk of experiencing impaired wound healing after an operation (WHO 2017:2; Aleris-Hamlet 2016:4). Smokers suffer more health problems due to their smoking, and eventually die earlier – by a decade or more – than non-smokers because of regular inhalation of substances which contain nicotine or tar (Commonwealth Secretariat 2011:8; American Cancer Society & World Lung Foundation 2009:4; WHO 2011a:9; Kottke, Wilkinson & Baechler 2016:10). Young adulthood is the period when individuals are most vulnerable to starting smoking because they are more enthusiastic about taking risks as they become easily influenced by their peers, and are not considering their health (Villanti, Niaura, Abrams *et al* 2019:1).

Smoking is a behaviour learned through the phases of ‘preparation, initiation, experimentation, habitual smoking, and addiction’. Often, smoking represents a social norm among other individuals who are tagged ‘cool’, ‘sophisticated’, ‘rebellious’, or ‘fun-loving’. Youths act in response to this by copying such behaviour and attempting to smoke

themselves. Therefore, youths are more likely to smoke if their friends, family members or their siblings smoke (Benjamin 2012:3; Aslam, Zaheer, Rao *et al* 2014:9). In Africa, about one in 10 young people smoke cigarettes, and at the same time use other tobacco products such as chewing tobacco, snuff and pipes (Reshma & Kaneda 2015:3). Research shows that when smokers start to smoke at younger ages, they become addicted to tobacco smoking and their exposure to the risk of developing NCDs increases.

Addictions become extremely difficult to overcome later in life, thereby accelerating the onset of chronic diseases across the life course (Benjamin 2012:5). Adults who engaged in smoking in their teenage years can have lungs that did not grow to full maturity as a result of impairment on their growing lungs caused by the chemicals in cigarette smoke. This slows lung growth, and the lungs may never perform at full capacity as such impairment becomes permanent and increases the individual's risk of COPD and other NCD-related health conditions as they grow older (CDC 2014:2; Awosan *et al* 2014:3; WHO 2012:1; PRB 2013:1). Unfortunately, the advertisement and sales enhancement activities by tobacco companies are said to be responsible for the promotion of early involvement and continuation of smoking among youths (US Centers for Disease Control and Prevention 2012:1).

In addition to smoking, harmful use of alcohol has been listed as an unhealthy lifestyle practice that increases the risk of developing NCDs.

2.5.1.5 Alcohol consumption

Alcohol is a psychoactive substance, stimulant and intoxicant with dependence-producing properties (WHO 2014:xiii). Harmful use of alcohol includes high-level drinking every day, as well as single or repeated occurrences of drinking to intoxication (WHO 2014:11). When alcohol gets into the human system, it becomes transformed into a poisonous chemical known as acetaldehyde, which has now been confirmed to cause cancer by destroying the DNA and preventing the body cells from repairing and replacing the damaged ones (Cancer Association of South Africa (CANSAs) 2017:4; European Union

(EU 2017:1). The WHO's report on harmful use of alcohol reveals that it poses a major health, social and economic burden on society at large (WHO 2018b:12).

Alcohol is well known to be responsible for over 60 types of diseases and injuries (Lange, Manz & Kuntz 2017:1; WHO 2011a; Lim, Vos, Flaxman *et al* 2012:4). An estimated 2 billion adults globally consume alcoholic beverages on a regular basis, consuming about 13g of ethanol each day on average. Alcohol consumption is also said to cause many types of social, mental and physical injury depending on the quantity of alcohol that is consumed, the frequency of consumption, and the quality of alcohol taken (CANSA 2017:4; EU 2017:1; Hamlet 2016:2; Centre for Epidemiology and Evidence 2016:5).

Harmful drinking for women is defined as drinking more than six units a day or over 35 units a week, while harmful drinking for men is defined as more than eight units a day or over 50 units a week. Literature reveals that excessive alcohol intake has contributed to the development of cardiovascular disease, cancers of the oral cavity, colorectum, larynx, pharynx, oesophagus, liver, female breasts, and especially in organs which come into direct contact with alcohol (EU 2017:1; WHO 2014:11). Moreover, heavy consumption of alcohol over a long period of time increases the risk of waning the immune system, disrupting sleep patterns, osteoporosis, hormone imbalance, cerebral haemorrhages, dementia, epilepsy, muscular damage, and pancreatitis (Awosan *et al* 2014:3; Hamlet 2016:2; Thirlaway & Upton 2009:111).

Harmful consumption of alcohol among young people is becoming very worrisome in many countries across the globe. Today, young people's exposure to excessive alcohol consumption leads to the development of alcohol-related chronic diseases, poor health conditions, and increasing mortality (Newbury, Birch, Walker *et al* 2009:6; Centre for Health Protection 2014:2). An estimated 16% of drinkers aged 15 years or older get involved in heavy drinking globally. Young people who start drinking alcohol in their early teen years are more likely to become reliant on alcohol within 10 years compared to those who begin drinking in their late teen years and early 20s (WHO 2014:1; Awosan *et al* 2014:3; CDC 2014:1).

It is therefore important to discuss the major types of lifestyle diseases that have been identified as associated with lifestyle choices and how they impair people's health. This will shed more light on possible solutions to prevent the further development of NCDs.

2.6 TYPES OF NON-COMMUNICABLE DISEASES

NCDs are ailments that arise as a result of different habits and behaviours that prevent people from engaging in and carrying out their normal daily activities and drive them towards a sedentary lifestyle, which is detrimental to their health and pose near life-threatening consequences (Tabish 2017:1). NCDs are also known as lifestyle-related diseases, which are deeply linked to lifestyle choices (Tabish 2017:1; Japanese Nursing Association 2015:1). An important pointer to the health status of any given population is their behavioural conduct (Mehta & Myrskylä 2017:2). Lifestyle diseases are becoming increasingly rampant, affecting the health of younger populations globally (Senapati *et al* 2015:2). These lifestyle diseases connect to the individual's long-term involvement in four common modifiable risk factors, as discussed earlier in this study, namely tobacco smoking, harmful use of alcohol, unhealthy diet, and physical inactivity. This eventually results in the onset of lifestyle diseases (Alwan, Galea & Stuckler 2011:online).

For emphasis, this document will focus mainly on four major NCDs, including cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes.

2.6.1 Cardiovascular diseases

Cardiovascular disease is an umbrella name that includes a number of conditions affecting the normal functioning of the heart, some of which are genetic, and many of which are the result of lifestyle choices (American Heart Association 2017:2; The Heart and Stroke Foundation of South Africa 2017:1). Cardiovascular disease is the single most important cause for preventable deaths worldwide, and the number of deaths from it each year is constantly on the rise. Literature confirms that globally, cardiovascular deaths account for more than 17.1 million and it is projected to rise to annual 23.4 million by 2030

as more people die annually from cardiovascular disorders than from any other cause of death (The Republic of Ghana Ministry of Health 2012:6; WHO 2011: 21; Senapati *et al* 2015:2-3; Santulli 2013:1; Mohammadnezhad, Mangum, May *et al* 2016:2; Tabish 2017:2; Bloom *et al* 2011:7).

Modifiable risk factors for cardiovascular diseases include smoking, physical inactivity, obesity, unhealthy diet, and dangerous alcohol consumption (Tabish 2017:2). In the year 2010, reports showed that over 30% of all deaths were caused by cardiovascular diseases, and it is estimated that by 2030, cardiovascular diseases will be responsible for more deaths in low-income countries than communicable diseases (Tabish 2017:3; Nugent, Brouwer & Kariuki 2015:15). The outcome of cardiovascular diseases include strokes, heart attacks, heart failure, debilitating end-stage kidney disease, limb amputations and eye disease. Efforts to improve lifestyles and control lifestyle-related major cardiovascular risk factors will contribute to the early prevention of cardiovascular diseases (Nugent *et al* 2015:16; Santulli 2013:1; Mohammadnezhad *et al* 2016:2).

Cardiovascular diseases present themselves in different forms and types. Those associated with specific lifestyle choices include coronary heart disease (CHD), cerebrovascular disease, and peripheral arterial disease (PAD), as discussed next.

2.6.1.1 Coronary heart disease (CHD)

This is defined as a heart condition in which there is an imbalance between myocardial oxygen supply and demand as a result of the atherosclerotic coronary arteries' inability to supply the heart with oxygen due to partial or absolute blockage of the coronary arteries (CDC 2019:online). When this happens, the heart becomes overstressed and strained, leading to the occurrence of angina, heart attacks, and heart failure, among others. CHD is one of the most common types of heart predicaments found to burden people today (Tabish 2017:2; Schmidt, Duncan, Silva *et al* 2011:3).

2.6.1.2 Cerebrovascular disease

Cerebrovascular disease is another common manifestation of cardiovascular disease, which impairs the normal functioning of the human body as a result of individual lifestyle choices. It refers to a group of conditions caused by atherosclerosis that affect the blood vessels causing a blockage, malformation or haemorrhage, which deprives the brain cells from getting sufficient oxygen. When there is a shortage or cessation of blood supply to the brain, a person experiences a fatal condition known as stroke (American Heart Association 2017:2; Tabish 2017:2; Medterms Dictionary:online).

2.6.1.3 Peripheral arterial disease (PAD)

PAD refers to vascular diseases caused by atherosclerosis and thromboembolic pathophysiologic processes that involve the alteration of the normal formation of the aorta, iliac and lower-extremity arteries that impairs the normal functioning of the blood vessels that supply blood to the arms and legs (Olin, White, Armstrong *et al* 2016:2; Tabish 2017:3; Beckman, Findeiss, Golzarian *et al* 2011:3).

2.6.2 Diabetes

Diabetes is another type of NCD which is considered a leading cause of mortality worldwide. Diabetes mellitus is a severe and chronic disease described as hyperglycaemia arising from the inability of pancreatic β -cells to generate sufficient insulin in the body (WHO 2016:11). It is a disease which progressively develops when there is a defect in the body's ability to convert glucose (sugar) to energy. In this condition, the body no longer regulates and controls the sugar level in the bloodstream (WHO 2011a:24). Based on the WHO's estimates, 422 million people over 18 years were living with diabetes globally in 2014. Unfortunately, the number of affected persons is projected to continue growing at an alarming rate in the future (WHO 2016:6). Without urgent action, diabetes-related mortality will increase by more than 50% in 2020 (WHO 2010:1).

There are two types of diabetes (type 1 and type 2), and type 2 is associated with individuals' lifestyle choices.

2.6.2.1 Type 2 diabetes

Type 2 diabetes arises when the pancreas fails to produce adequate insulin, causing the blood glucose level to increase as a result of either insulin resistance or insulin shortage (Hassan 2013:1; Okur, Karantas & Siafaka 2017:5). This condition leads to an increase in the level of blood glucose (WHO 2016:11). Type 2 diabetes develops as a result of the combination of various risk factors that serve as contributors for accelerated development of the disease. It is the most common form of diabetes and accounts for as high as 85% to 95% of all detected cases of diabetes. As found in current literature, the occurrence of type 2 diabetes keeps growing at an alarming rate in all countries across the world and this fronts a very devastating burden on both public health and socio-economic progression worldwide (Jamaica Ministry of Health 2013:13; Bi, Wang, Xu *et al* 2012:2; Bloom, Cafiero, Candeias *et al* 2014:1).

There are quite a number of risk factors for type 2 diabetes, including obesity, family history of diabetes, prior history of gestational diabetes, impaired glucose tolerance, physical inactivity, unhealthy diets, high blood pressure, high cholesterol, heavy alcohol consumption, psychological stress, and more (WHO 2016:13; AstraZeneca 2012:4). Being overweight and obesity are the strongest risk factors for type 2 diabetes (WHO 2016:25; WHO 2016:12). Diabetes symptoms may comprise unclear vision, unexplained thirst, intermittent urination, slow-healing wounds, constant tiredness, rapid loss of weight, erectile dysfunction, and numbness of the hands or feet (Diabetes Research & Wellness Foundation 2017:2). Diabetes is also a known cause of serious health complications including heart disease, kidney failure, leg amputation, vision loss and nerve damage; leading to disability and premature death (WHO 2016:1; WHO 2016:6; WHO 2016:13; UCLA Centre for Health Policy Research 2014:1).

Type 2 diabetes is essentially preventable as weight reduction via physical activity, and a healthy diet provides a solution to the incidence of the disease (Islam, Chakrabarti, Dirani *et al* 2014:5; WHO 2016:35). Other factors such as multi-sectoral, population-based approaches through a combination of fiscal policies, legislation, positive changes to the environment and increased awareness of health risks are also very helpful in reducing the incidence of diabetes risk factors in the general population, and are of course more effective than medication (WHO 2016:35; WHO 2016:36).

Another common type of NCD that is a leading contributor to mortality and health burden worldwide is cancer, as explored next.

2.6.3 Cancer

Cancer is a generic term for a large group of diseases that affects different parts of the body and is characterised by a rapid creation of abnormal cells in that part and can invade other parts of the body as well (WHO 2011:16; WHO 2017:2). If these abnormal tissues are not closely monitored and checked, it destroys the affected body part and will eventually cause death. As documented by the WHO in one of its reports on cancers, more than 7 million people annually die of cancer, and 30% of these cancer types are attributed to lifestyle options, making cancer the second leading contributor to NCD mortality and causing a great deal of disease burden worldwide (WHO 2009:1; Academy of Science of South Africa (ASSAF) 2013:55; WHO 2017:2; World Cancer Research Fund International 2014:1; Union for International Cancer Control 2013:1; Hejmadi 2010:7).

Global cancer mortality has been projected to rise from 7.4 million in 2004 to 11.8 million by 2030 (The Republic of Ghana Ministry of Health 2012:6, WHO 2011:16, WHO 2017:1). Sadly, in 2012, 14 million new cases of cancer were recorded across the globe and 8.2 million people died of this ailment. The good news is that the WHO has estimated that by choosing to live a healthy lifestyle, one out of three new cases of cancer could be avoided (Istituto Superiore di Sanità (ISS) 2014:11).

Diverse types of cancer have been identified in the literature. Some are associated with lifestyle choices and are therefore discussed next.

2.6.3.1 Breast cancer

Breast cancer is a malignant tumour and a life-threatening neoplasm arising from the abnormal/uncontrollable growth and division of cells of the breast (Afroz, Rahman & Hossain 2017:1; Komen 2016:1; Balentine 2018:2). Breast cancer is undoubtedly the leading type of cancer in women in terms of both prevalence and mortality. The occurrence of lifestyle risk factors associated with breast cancer includes obesity, tobacco smoking, and alcohol consumption, among others (IstitutoSuperiore di Sanità 2014:7; Tabish 2017:3).

2.6.3.2 Lung cancer

Lung cancer, also known as bronchogenic cancer, is defined as a malignant tumour of the lungs developing around the epithelium of the bronchus (Cancer Council Australia 2016:8; Espino & Peace 2013:4). Lung cancer starts when cells in the lung grow and divide uncontrollably, presenting itself in the form of a nodule, tumour or lesion (American Society of Clinical Oncology 2017:1). The dangers for developing cancer of the lung are greater among smokers, and the substances contained in cigarettes have been a contributory factor to the increase in the number of deaths connected with lung cancer. When cigarette smoke is inhaled, toxic chemicals from the smoke damage the tissue and cells that connect the mouth and nose to the lungs. The longer an individual is exposed to cigarette smoking, the greater the danger of scarring the lung tissues, causing it to lose its elasticity, and making it incapable of effectively exchanging air through its pipes (CDC 2014:2). Lung cancer is therefore the leading cause of cancer death among smokers in all countries (Tabish 2017:3; IstitutoSuperiore di Sanità 2014:7).

2.6.3.3 Colorectal cancer

Colorectal cancer is a cancer that begins in the colon or the rectum. These cancers can also be called colon cancer or rectal cancer, depending on where they start (American Cancer Society 2016:1). Lifestyle factors, such as diet, obesity, and a sedentary lifestyle lead to the onset of colorectal cancers (IstitutoSuperiore di Sanità 2014:8; Tabish 2017:3).

2.6.3.4 Prostate cancer

Prostate cancer develops when cells in the prostate gland found in males begin to reproduce uncontrollably. These cells are responsible for making some of the fluid that is part of semen (American Cancer Society 2016:1). The risk of prostate cancer rises with tobacco smoking, alcohol consumption, an unhealthy diet, obesity, and inadequate physical exercises (IstitutoSuperiore di Sanità 2014:8; Tabish 2017:3).

2.6.3.5 Cervical cancer

When cancer starts in cells on the surface of the cervix, it is called cervical cancer. The cervix connects the vagina (the birth canal), leading to the upper part of the uterus (CDC 2016:1). Over time, cervical cancer can invade deeper into the cervix and nearby tissues, causing damage to the cells (US National Cancer Institute 2012:4; WHO 2013:2). Smoking has been confirmed to be an important cofactor for malignant transformation of cervical cancer (Tabish 2017:2; American Cancer Society 2017:20). General negative lifestyle behaviours such as smoking, alcohol consumption, physical inactivity, and poor dietary patterns – including obesity – among others, are considered risk factors for cancer (WHO 2009:1; American Cancer Society 2009:11; WHO 2011:16; Tabish 2017:3).

2.6.4 Chronic Respiratory Diseases (CRDs)

Chronic respiratory diseases (CRDs) are chronic diseases of the airways and other structures of the lungs (Navarro-Torné, Vidal, Trzaska *et al* 2015:1). CRDs are a strong

cause of death globally, with 90% of these deaths occurring in low-income countries (Senapati *et al* 2015:3; The Ohio State University Wexner Medical Center 2016:1). The different types of CRDs present themselves in different forms (such as chronic obstructive pulmonary disease (COPD), chronic bronchitis and emphysema), and are associated with specific lifestyle choices.

2.6.4.1 Chronic obstructive pulmonary disease (COPD)

COPD is rooted in airflow limitation that is not entirely reversible due to airway or alveolar abnormalities linked with a strange inflammatory reaction of the lungs to toxic elements or gases (WHO 2011:23; Ariel, Altraja, Belevskiy *et al* 2018:7; Vogelmeier, Criner, Martinez *et al* 2017:2). COPDs are the most common CRDs (Jamaica Ministry of Health 2013:13), and the condition is prevalent in smokers (Khan, Fell & James 2014:2). People with COPD have damaged airways and gradually die from a shortage of oxygen. Eight out of 10 cases of COPD are caused by smoking (CDC 2014:3). Globally, roughly 64 million people were burdened by COPD in 2004, and this number may grow to 100 million by 2030 (Senapati *et al* 2015:3; The Ohio State University Wexner Medical Center 2016:1). COPD is a progressive condition that could present itself as either chronic bronchitis or emphysema.

2.6.4.2 Chronic bronchitis

Chronic bronchitis is defined as a situation whereby there is increased swelling and mucus (phlegm or sputum) production in the breathing tubes (airways), thereby causing the inside of the breathing tubes to be smaller than usual (Lareau, Fahy, Meek *et al* 2019:1). Chronic bronchitis is experienced as frequent infections causing inflamed airways, increased mucus, shortness of breath, wheezing and chest tightness. The chief cause of chronic bronchitis is smoking (Ohio State University Wexner Medical Center 2016:1).

2.6.4.3 Emphysema

Emphysema is defined as the permanent expansion of the airspaces of the outer part of the terminal bronchioles, accompanied by destruction of their walls, without noticeable fibrosis (Pahal, Avula & Sharma 2020:online). This condition involves damage to the walls of the air sacs (alveoli) of the lung, causing the alveoli that link the acinus to the terminal airways to lose their elasticity and trap air (Lareau *et al* 2013:1; Mitzner 2011:2).

The extent to which NCDs have impaired the health of global populations, and the depth of the problems imposed on people by NCDs, are considered next in order to shed more light on the need for urgent intervention.

2.7 NON-COMMUNICABLE DISEASES: A GLOBAL HEALTH PROBLEM

NCDs are considered the leading cause of deaths globally, and one of the health challenges which are of major concern in the 21st century. The current global mortality rate from NCDs, as shown in Figure 2.3, remains disappointingly high; accounting for 71% (40 million) of the 57 million global deaths in 2016 (WHO 2018a:8). The prevalence keeps increasing, leading to threatened economic and social development, as well as impacting on the lives and welfare of people (WHO 2014:7; The World Bank 2011:vii). Finding a solution to this global problem is a significantly challenging task (WHO 2009:5; Bloom *et al* 2011:7).

Over the years, numerous WHO reports on NCDs in different countries across the globe revealed that NCDs account for more deaths than the aggregate of other diseases put together. In 2005, NCDs caused an estimated 60% of global deaths, compared to 43% in 1990. In 2008, it was recorded that NCDs caused a total of 36 million deaths globally. In 2012, NCDs accounted for 38 million deaths globally out of the overall 57 million deaths. In 2016, NCDs were responsible for 41 million (71%) deaths globally. Unfortunately, NCD deaths are projected to increase from 38 million in 2012 to 52 million by 2030 (Horton &

Lo 2013:2; WHO 2014:7; WHO 2014:8; WHO 2011:7; Tagurum, Okoh, Inalegwu *et al* 2015:1; Global Health Briefing 2013:23; Awosan *et al* 2014:2; WHO 2018a:10).

NCDs impact negatively on global national economies because of the poor health of adults when they are in their most productive years (WHO 2011:9). As NCDs increase, there is a ripple effect on labour supply and outputs, diminishing the total returns on human capital investments, crippling domestic expenditure and consumption, reducing tax revenues, and significantly adding to the total expenditure on public health and social welfare (World Bank 2011:6). The WHO estimates that the economic losses between 2011 and 2025, due to NCDs in both low- and middle-income countries, will be \$7 trillion (WHO, 2014:9), while the World Economic Forum (WEF) estimates a cumulative output deficit of US \$47 trillion over the next two decades (WEF 2013:4).

The WHO anticipates that this estimated figure will overshadow the total annual \$11.2 billion expenditure on putting workable interventions into action to decrease the yoke of NCDs on the already overburdened population (WHO 2014:7). These findings underpin the urgency to react positively to the NCD debate. Those affected by NCDs will increase significantly in the next few decades, and the need to examine the prevalence of NCDs in Africa is vital.

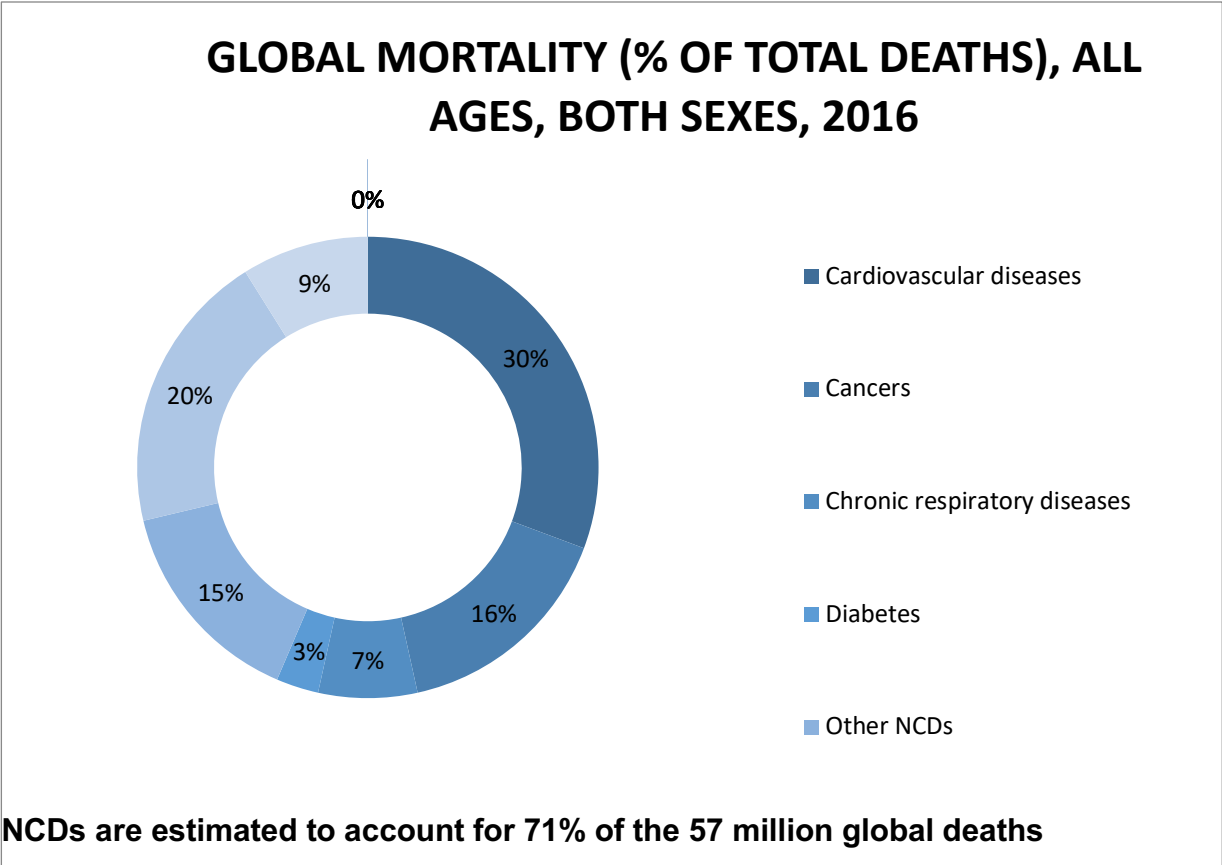


Figure 2.2: WHO - Global mortality estimates, 2016

2.8 NCDS: THE AFRICAN MILIEU

Due to the lack of reliable mortality and morbidity data from sub-Saharan Africa, accurate NCD data are not available (Ekpenyong *et al* 2012:2; Omoleke 2013:2). However, in the last three decades, there has been a rapid increase in the prevalence of NCDs in Africa because African countries are undergoing diverse degrees of human development (WHO 2011:11; Omoleke 2013:2; Dalal *et al* 2011:1). Moreover, it is estimated that by 2030, sub-Saharan Africa will experience the largest increase in the share of total deaths from NCDs, reflecting a dramatic increase from 28% in 2008 to 46% in 2030 (Reshma & Kaneda 2015:2; Omoleke 2013:2).

To further underpin the blow of NCDs on the Nigerian population, where this research was conducted, it is vital to examine the extent to which NCDs have impaired the health of the Nigerian population.

2.9 NIGERIA

Even though the changing pattern of disease is already occurring in Nigeria, the country lacks sufficient data on the prevalence of NCDs and the burden of NCD risk factors that could guide programmes targeted at its control (Ogah *et al* 2013:2). Sadly, Nigeria currently has no operational plan, unit, branch or department within the ministry of health that works to decrease the harmful consumption of alcohol, decrease sedentary lifestyle, and promote physical activity. Based on this premise, there are no facts-based national guidelines for the appropriate management of major NCDs through a primary care approach (WHO 2014:138). The burden of NCDs is also on the rise in Nigeria due to various forces of globalisation, even though most of its predisposing factors can be curtailed by behavioural modification (Maiyaki & Garbati 2014:1). With the lack of adequate resources in Nigeria, the increasing occurrence of NCDs can drain household resources and drive families into poverty (Ogah *et al* 2013:2).

Recent reports indicate that NCDs have overtaken communicable diseases as a cause of illness in Nigeria (Ogah *et al* 2013:2). Despite the increasing prevalence of risk factors for NCDs, most developing countries, including Nigeria, do not have up to date and dependable data on this situation. NCDs are estimated to account for 29% of total deaths in Nigeria (see Figure 2.3), which is, of course, preventable if healthy lifestyles are adopted from early childhood (WHO 2018b:153; WHO 2014:138; WHO 2012:1; WHO 2010:61).

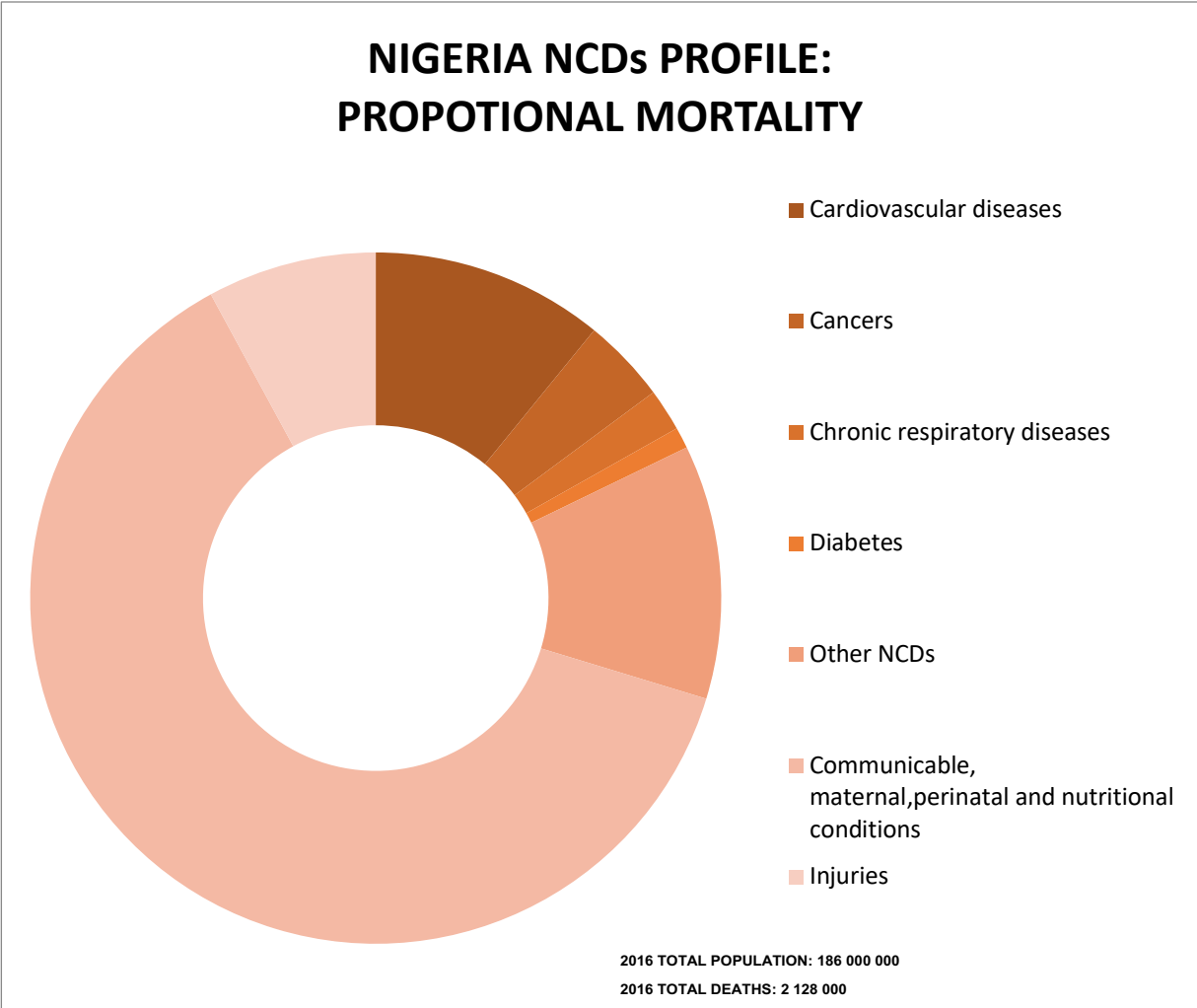


Figure 2.3: WHO–NCDs (NCDs) country profiles, 2016

2.10 PREVENTION OF NCDS

Having established that lifestyle diseases are a threat to the health and socio-economic aspects of nations globally, appropriate actions for their prevention and control become vital. Thus, interventions that tackle the social and economic challenges of NCD risks promote and encourage positive health behaviours, and discourage negative ones among young people can appreciably change the future tragedy of NCDs globally.

Positive health behaviours should be established during the youth period, such as smoking cessation, safe consumption of alcohol, healthy eating habits and regular

exercise. These are more likely to be carried through to adulthood via prioritising policies to implement behavioural-based interventions (Reshma & Kaneda 2015:2; WHO 2009:7; Mehta & Myrskylä 2017:2). Thus, the key to controlling the rising prevalence of NCDs in the world is primary prevention through comprehensive population-based programmes (Ogah *et al* 2013:1).

This implies that some NCDs can be prevented by controlling the habits, behaviours and lifestyle of people in order to reduce common modifiable risk factors. A population-wide approach to prevent NCDs goes a long way in decreasing the global health burden if these are complemented by healthcare interventions for individuals who either already have NCDs or those who are at high risk (WHO 2010:61). Preventing and acting in response to NCDs must incorporate a focus on adolescents. Mapping out certain national youth programmes is therefore crucial for preventing NCDs (WHO 2012:1; AstraZeneca 2014:1), and the level of attention given to NCDs is hereby discussed.

2.10.1 National systems response to NCDs

Improving youths' health and wellbeing is crucial for their wellbeing today, and their future economic productivity. Better youth health is dependent on the provision of high-quality health services, but is also intertwined with factors falling outside the realm of the health sector (Cooper & De Lannoy 2015:1). According to the report written by Chowdry *et al* (2013:6), since participation in risky lifestyle begins at a young age, programmes aimed at preventing these forms of behaviour should focus mainly on the start of the teenage years or even before the teen years.

Considering the rising danger of NCDs, acting now to reverse its course would significantly diminish the devastating hits of NCDs on national economies. Moreover, global interest in health has to explicitly focus on youth in order to achieve the objectives set by the WHO in the 2008-2013 Action Plan to prevent and control NCDs (WHO 2014:1; Duong 2015:7).

The WHO has responded by establishing nine global targets for 2025 which, when jointly carried out by member states, will help to achieve a global target of a 25% reduction in untimely death from NCDs by 2025 (WHO 2014:ix). Successfully promoting healthy living in a sustainable and universal way requires a combination of efforts invested by stakeholders to foster favourable atmospheres in which healthy choices are the easiest options for healthy living and drive long-term lifestyle changes (WEF 2013:4). Gathering and analysing available data on the extent and level of risk factors among youth can help provide insight into the likely future burden of NCDs and also help focus policies and programmes to mitigate against risks and promote healthy lifestyles (WHO 2015:80; Reshma & Kaneda 2015:1; WHO 2014:vii).

It is evident that health promotion and NCD prevention are vital for the long-term sustainability of health systems in any country as it fosters population productivity (WHO 2014:v). Policies and programmes to protect youths from harmful substances prevent behaviours that can increase individuals' risk of NCDs. Policies must therefore target:

- (i) product design,
- (ii) advertising, marketing, sponsorship and the promotion of harmful substances,
- (iii) mandate public places, schools and other places where adolescents gather to be 100% smoke and alcohol free, and
- (iv) enforce age limits on product purchases and raise taxes on unsafe products.

All these are an effective way to reduce the rate at which young people consume harmful substances (International Development Research Centre (IDRC) 2015:17; WHO 2012:1; WHO 2014:2; CDC 2014:7).

There is also an apparent need to reinforce harmonisation across various stakeholders to improve the effectiveness of these collective efforts. A multi-stakeholder and cross-sectoral move towards NCD prevention is the only means to facilitate the necessary system-level transformation. However, the role played by personal responsibility in

healthcare provision is also significant to individual lifestyle preferences for health (Brown 2013:1; WHO 2017:3; WEF 2013:5).

As stated, youths are a very important force that is overlooked in the prevention and battle against NCDs. Getting young people involved in health promotion and providing them with the tools and support needed to make decisions on how to influence their peers to make healthier decisions can be very effective in preventing NCDs. Instilling healthy behaviours among youth today will be easier than changing well-entrenched negative behaviours later in life (Baldwin, Kaneda, Amato *et al* 2013:2; Bernatas, Roth & Guevarra 2017:3).

Today, many young people who have first-hand access to information have the ability to take action that shapes their own lives and determine their health status based on the information they have. By using the media, young people can also connect with different communities to share information about NCD prevention. Piloting plans to encourage and promote healthy behaviour among youths, and making meaningful contributions to awareness programmes that educate decision-makers about NCD problems can be done by youths in order to provide effective prevention measures (Baker, Taylor, Essafi *et al* 2016:1). Young people can also raise campaigns for policies and practices aimed at improving NCD prevention and care in their various communities. In this regard, young people can increase their power to hold governments accountable (Heimans & Timms 2014:12).

2.11 SUMMARY

This chapter discussed the literature review undertaken for the study. The literature covered the theoretical background to the study, the concepts of health and disease, lifestyle diseases, NCDs, types of NCDs and their risk factors, risky lifestyle activities among youths, the control and prevention of NCDs, national systems' responses to NCDs, and the responsibility of youths to curb NCD prevalence. The literature review guided the researcher in the development of the research questionnaire for this study.

Chapter 3 describes the research design and methodology employed for this study, along with the research methodology followed while carrying out this study. An explanation is also provided of the study's design, research setting, study population, sampling techniques, data collection processes, and the data analysis methods employed in explaining the findings of this study.

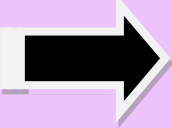
CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter 3 presents an in-depth description of the mixed-methods research design as the design of choice, the research setting, study population, sampling techniques, validity and reliability, data gathering processes and ethical considerations for Phase 1 and Phase 3 (see Table 3.1). Phase 2 did not require a specific technique as the data obtained from Phase 1, and the literature review were used to develop the draft strategic action plan (see Chapter 5).

Table 3.1: Thesis structure and chapter layout

CHAPTER	DESCRIPTION OF CHAPTER CONTENT	PURPOSE
CHAPTER 1	OVERVIEW OF THE STUDY	
CHAPTER 2	LITERATURE REVIEW 3. The TPB 4. Lifestyle and non-communicable diseases among youths	Questionnaire Development
CHAPTER 3 	1. Research design 2. The methodology followed (population, sampling, data gathering techniques, ethical aspects, data gathering process) as well validity and reliability of: 2.1 Phase 1 2.2 Phase 2 2.3 Phase 3	Methodology for Phase 1, Phase 2 and Phase 3

3.2 RESEARCH DESIGN

A research design refers to the overall structure, plan or blueprint for a research study (Grove, Burns & Gray 2013:195). It can be explained as the arrangement of conditions of

how research data will be collected and from whom, how it will be analysed, and how the findings will be interpreted to achieve the set of objectives that were identified (Rahi 2017:2). As mentioned in the overview of the study (see Section 1.9.1), the researcher adopted a cross-sectional mixed-methods design in this study. A short overview of the cross-sectional mixed-methods design and what the design entails will be provided. Then, a full description of the quantitative phase, with qualitative enhancement relevant to Phase 1, and the qualitative phase relevant to Phase 3, will be discussed.

3.2.1 Cross-sectional design

Cross-sectional studies are usually conducted in order to estimate the prevalence of the outcomes of interest for a given population; by providing a clearer picture of the outcome at a specific point in time. Cross-sectional studies are therefore conducted to investigate associations between risk factors and the outcome of interest (Sedgwick 2014:1; Hemed 2015:2; Zheng 2015:2). In this study, the cross-sectional design was used to enable the researcher to collect the data at one time and get an overall picture of youths' perception of the impact of risky lifestyle patterns on NCDs. It also allowed the researcher to gather data on the perceived barriers to healthy lifestyle patterns among youths. The data were gathered to obtain a picture of the risky lifestyle practices of youths, the lifestyle changes that can contribute to the prevention of NCDs, and the factors contributing to the specific pattern of lifestyle among youths in South-West Nigeria.

3.2.2 Mixed-methods design

Mixed-method research is defined as a technique that centres on the collection, analysis and merging together of both quantitative and qualitative data collected in a given study in order to provide a better understanding of the research problems through the combination of both quantitative and qualitative approaches (Creswell 2013:6; Christensen, Johnson & Turner 2012:234; Creswell 2014:43; Creswell & Plano Clark 2011:54). The advantages of both approaches can therefore enhance the quality of a study. While quantitative (mainly deductive) methods are ideal for measuring

pervasiveness of “known” phenomena and central patterns of association, including inferences of causality, qualitative (mainly inductive) methods allow for easy discovery of new processes that help provide explanations for the aetiology of observable facts and how these discoveries affect the population under study. The integration of both the quantitative and qualitative data in one study therefore provides a clearer picture of the research problems and how best to address the research questions (Zheng 2015:3; Fiorini, Griffiths & Houdmont 2016:6; Creswell 2013:4).

Creswell (2015:29) identified three major designs that make up all mixed-methods studies, namely convergent designs, explanatory sequential designs, and exploratory sequential designs. In this study, an exploratory sequential mixed-method design was utilised to gather data. This exploratory sequential design was conducted, starting with quantitative data gathering and analysis (see Phase 1 of this study, Chapter 4), followed by the development of an instrument or intervention (see Phase 2 of this study, Chapter 5). Thereafter, a qualitative phase followed (see Phase 3 of this study, Chapter 6). Quantitative data were collected by means of closed-ended questions in the questionnaire with a few open-ended questions for qualitative enhancement (see Annexure 2). This enabled the researcher to give a detailed description of youths’ perception of the impact of risky lifestyle patterns on NCDs, identify the barriers to healthy lifestyle patterns among Nigerian youths, and the positive lifestyle changes among Nigerian youths that can contribute to the prevention of NCDs.

In Phase 3 of this study, the Delphi technique (qualitative data gathering) was used to validate the draft strategic action plan (see Chapter 6) that was developed. The Delphi method was an iterative process used to collect and extract experts’ judgments using a series of rounds interspersed with feedback, as described by Wilkes (2015:1). The strengths and weaknesses of mixed-methods designs are hereby discussed.

3.2.2.1 Advantages of the mixed-method design

The advantages of mixed-methods designs, as identified by Migiro and Magangi (2011:7),

motivated the choice of this research approach as a suitable design for this study:

- A mixed-methods design helps to broaden the answers to research questions because the researcher is not restricted to just one design or approach. The mixed-methods design in this study enabled the quantitative and qualitative methods to complement each other, thereby leading to a robust database. The researcher was therefore able to get a clearer picture of youths' risky lifestyles and how best to address the problems of NCDs that could arise as a result of engaging in unhealthy lifestyles.
- Mixed-methods designs assist researchers in combining and utilising the strengths of both qualitative and quantitative approaches to gain a deeper understanding of the issue under study, and provide stronger evidence for conclusions by revealing findings that might be missed when only one method is utilised (Migiro & Magangi 2011:7). In Phase 1 of this study, the statistically analysed and interpreted data were used, together with a thorough literature review, to develop a strategic action plan (see Chapter 5). In Phase 3, the Delphi technique was used to validate the strategic action plan with expert panellists (stakeholders) (see Chapter 6). Comments from the Delphi panellists provided input to alter and improve the strategic action plan during the various rounds to enhance the quality of the developed strategic action plan.

3.2.2.2 Disadvantages of mixed-methods designs

Some of the challenges posed by the mixed-methods design include the following:

- The researcher must go through the rigour of learning different methods and approaches in order to understand how to mix them correctly. The researcher had to study both designs and the specific methods of data gathering. The researcher's supervisor provided assistance and support to manage the challenges experienced, as suggested by Wisdom and Creswell (2013:7), Creswell (2014:267) and Migiro and Magangi (2011:7).

- Mixed-methods research can be time-consuming (Migiros & Magangi 2011:7). In this study, the researcher employed the services of a research assistant (see Section 3.11) to assist with questionnaire administration to streamline data collection for Phase 1. The e-Delphi, a consensus-seeking qualitative data gathering technique, was utilised to obtain input from expert panellists via a software program and online forms. The analysis of the different rounds of Delphi and the amendments after each round were time-consuming, but an essential part of the process to enhance the quality of the developed draft strategic action plan and ensure stakeholders' involvement.
- Analysing both qualitative and quantitative data in mixed-methods designs is time-demanding. While conducting this study, the researcher and the statistician combined efforts in order to analyse data. The quantitative data analysis was done within a period of three weeks, while the analysis of qualitative data was completed within a period of nine weeks.

The quantitative study approach was utilised in Phase 1, while the qualitative study approach was employed in Phase 3 of this study.

3.2.3 Quantitative study approach (Phase 1)

A quantitative study approach focuses strictly on the collection and analysis of fresh, bias-free data based on the research problems. Quantitative data present measurable facts that help to develop efficient data collection methods, especially in a large population (Rahi 2017:2; Creswell, Klassen, Clark *et al* 2011:4). In this study, variables were measured, and numeric data that can be analysed statistically were collected using both closed-ended and open-ended questions for qualitative enhancement (see Annexure 2). Therefore, as suggested by Creswell (2003:21-22), a quantitative approach is best if the study is aimed at identifying factors that influence an outcome, or understanding the best predictors of outcomes. The quantitative approach was used in Phase 1 of this study to describe and allow easy quantification of data that identify the current risky lifestyle practices of youths in South-West Nigeria, and the factors contributing to the specific

pattern of lifestyle.

3.2.4 Qualitative approach (Phase 3)

Qualitative methods are used to gain an in-depth understanding of a particular topic (Creswell *et al* 2011:4). It is a methodical and careful form of investigation that helps researchers understand the processes which provide detailed information about a particular setting or context, and lay emphasis on participants' words in order to provide a clearer understanding of a given phenomenon (Rahi 2017:2; Creswell *et al* 2011:4). Qualitative research is concerned primarily with the purposeful selection of participants and the collection of useful information from them, that helps to understand the problem and the research question (Creswell 2014:239). Qualitative research seeks to provide explanations on 'how' and 'why' a particular social phenomenon operates within a given context (Mohajan 2018:3). The qualitative approach employed in Phase 3 of this study enabled the researcher to gather detailed information via the judgments and narrative contributions of experts during each round of the e-Delphi technique (see Chapter 6). The Delphi technique was utilised to validate the developed draft strategic action plan that can be implemented to inform youths about non-risky lifestyles in an attempt to decrease their exposure to risks, and ultimately decrease NCDs in South-West Nigeria. The action plan was enhanced by extracting experts' opinions.

3.3 RESEARCH SETTING

Nigeria is positioned on the shore of West Africa, close to the north-eastern angle of the Gulf of Guinea (see Figure 3.1). Nigeria is one of the countries with the largest population in Africa and is home to over 183 million citizens (National Bureau of Statistics (NBS) 2016:1). The Federal Republic of Nigeria has a total area of 923,769 square kilometres and comprises a land area of 909,890 square kilometres, and water area of 13,879 square kilometres. Nigeria is located between 4° and 14° north latitude and 3° and 14° east longitude. The longest distance from east to west is about 767 kilometres, and from north to south is 1,605 kilometres (NBS 2011:3).



Figure 3.1: Location of Nigeria in Africa continent (Theodora 2018:online)

The Federal Republic of Nigeria is situated in West Africa, and shares land borders with Niger Republic, Republic of Benin, Chad and Cameroon (see Figure 3.3). Nigeria is divided into six geo-political zones namely, south-south, south-east, south-west, north-central, north-west, north-east (Okorie, Ademowo, Saka *et al* 2013:3). The country has a total of 36 states (see Figure 3.3) and one federal capital territory (Abuja) (Nuffic 2017:6). This study was conducted in South-West Nigeria, located between longitude 2°311 and 6°001E and latitude 6°211and 8° 371N, with a total land area of 77,818 km². The study area shares boundaries on the east with the Delta and Edo states, the north with Kogi and Kwara states, the south with the Gulf of Guinea, and the west with the Republic of Benin. Ekiti, Lagos, Ogun, Ondo, Osun and Oyo are the six states that make up the south-

west region of Nigeria (see Figure 3.2). The area is home to two of Nigeria’s three largest cities: Lagos and Ibadan. The population of the region is estimated at 27,581,992 people (Nwokoye 2009:5), predominantly members of the Yoruba ethnic group, who make up approximately 21% of the national population (Faleyimu, Agbeja & Akinyemi 2010:1).

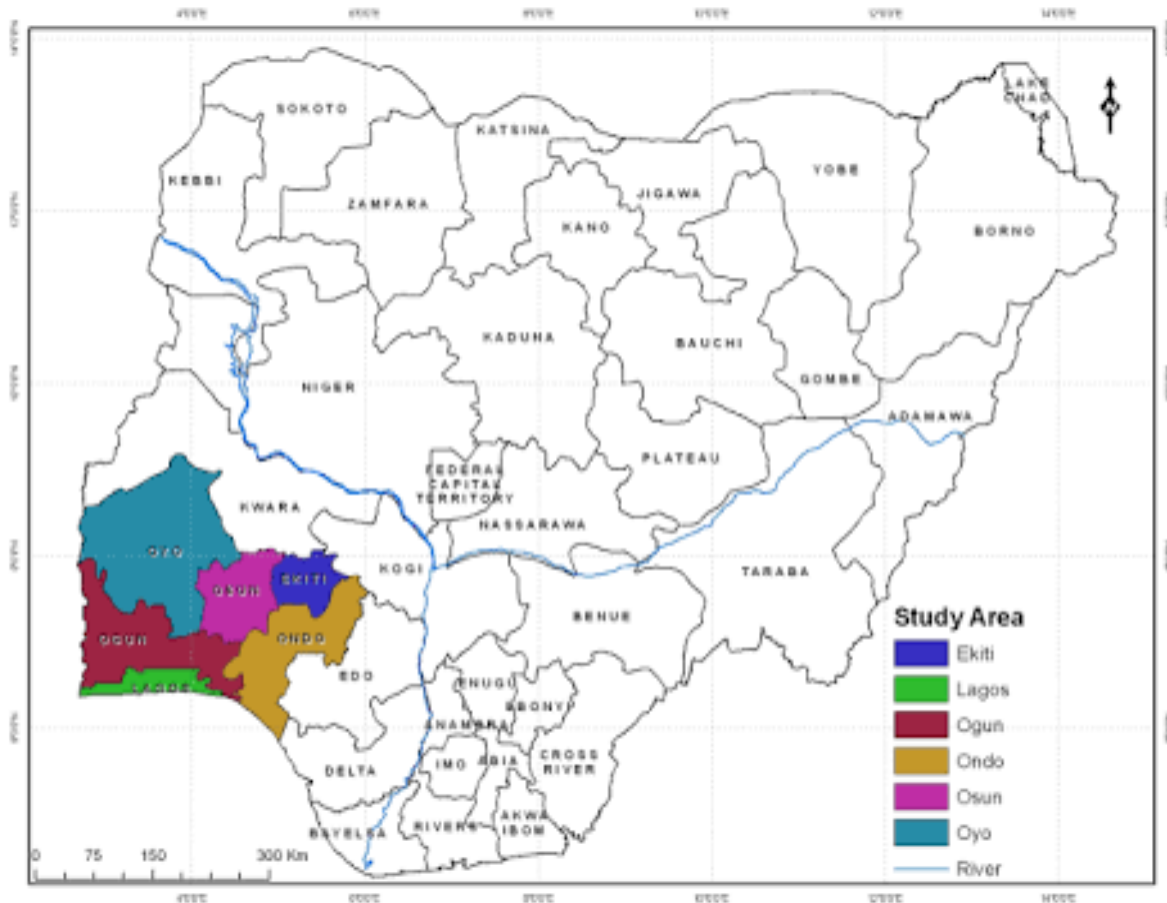


Figure 3.2: South-West region, Nigeria (Theodora 2018:online)

There are a total of 64 accredited tertiary institutions within the six states in South-West Nigeria (National Universities Commission 2018:online). This setting was purposively selected for the study as a safety precaution due to the resurgence of ethnic clashes in Nigeria; including ethnic militias such as MASSOB/IPOB in the eastern region of Nigeria and the Boko Haram insurgency in the north. Since 2009, well above 2,295 schoolteachers have been attacked and killed, while about 19,000 people have been displaced. Over 57% of schools have been closed down because of massive damage or

because they are in areas that remain unsafe (UN 2017:1; Ezemenaka & Prouza 2016:98). Ethnic tension in Nigeria thus urged the researcher to take the unstable environment into consideration.



Figure 3.3: Map of Nigeria (UN Department of Field Support 2014)

3.4 POPULATION

The research population is defined as an aggregate of all the people/individuals or items/objects to be studied with some common defining characteristics in order to draw scientific inferences (Bhattacharjee 2012:65; Polit & Beck 2012:738; Rahi 2017:3).

PHASE 1

3.4.1 Tertiary institutions

A total of 64 accredited tertiary institutions within the six states in South-West Nigeria formed the population from which tertiary institutions were selected for inclusion in Phase 1 of the study.

3.4.1.1 Youths

Young people (youths) between the ages of 15–24 years represent approximately 16% of the global population (UN 2018:1). Therefore, based on this premise, the population of youths in the south-west region of Nigeria was estimated to be approximately five million (Myguidenigeria 2017:online). The population for Phase 1 of the study included the five million youths in the south-west region of Nigeria.

PHASE 3

3.4.2 Delphi panellists (Qualitative)

For Phase 3 of this study, a total of 73 professors and senior lecturers (ABUAD 2018:online; UNILAG 2018:online; Covenant University 2018:online; UI 2018:online; FUTA 2018:online), 68 senior nurses/matrons, 10 medical doctors/consultants working for NGOs, 33 directors in the government ministries, and 13 directors in the government agencies (personnel estimate/budget, and research department) (Ekiti State Ministry of Local Government 2018) formed the population from which the Delphi panellists were selected.

3.5 SAMPLING AND SAMPLE SIZES

Sampling is the process of selecting a segment of the population for investigation (Polit & Beck 2012:738; Rahi 2017:3). For this study, a mixed-method sampling technique was employed. A combination of stratified convenient sampling (equal representation per institution) and convenient sampling (selection of tertiary institutions and the selection of youths within each tertiary institution) was deemed appropriate.

PHASE 1

3.5.1 Tertiary institutions

Convenience sampling is defined as the selection of respondents on the basis of easy availability (Taherdoost 2016:6). It is a type of nonprobability sampling that selects respondents from the target population based on practical standards, including easy accessibility, physical proximity and preparedness to take part in the study (Etikan, Musa & Alkassim 2016:2). Six tertiary institutions (one from each state) from the 64 accredited tertiary institutions within South-West Nigeria were selected via convenience sampling because of easy accessibility to the researcher, the data provided on the websites to describe each institution, as well as the willingness of the institutions to take part in the study.

3.5.1.1 The six selected tertiary institutions

The information that was used to select the six tertiary institutions was based on the details provided by the institutions' websites.

- (1) Tertiary Institution A: Institution A was established in 2009 by an outstanding lawyer, established farmer and industrialist from Ekiti State. The institution's main campus is located on a hilly part of the town, directly opposite the Federal Polytechnic Ado-Ekiti. The institution runs a collegiate system and has five undergraduate colleges,

conference halls, a post-graduate school, and a multisystem hospital for training medical and nursing students. At the time of data gathering, about 7,000 students were enrolled in the College of Sciences, College of Law, College of Engineering, College of Social and Management Sciences and College of Medicine and Health Sciences (ABUAD 2018:online).

- (2) Tertiary Institution B: Institution B was among the first-generation tertiary institutions in Nigeria, and has remained one of the most competitive in the country. The institution's main campus is at Idi-Araba, Surulere, Lagos, while the College of Medicine is situated a few kilometres from the main campus. Apart from its various faculties, the institution has other centres and institutes. The institution has one of the largest student populations in the country, with approximately 57,000 students enrolled at the time of data collection. Thus, the largest number of respondents was selected from institution B (University of Lagos 2018:online).
- (3) Tertiary Institution C: Institution C's main and only campus is situated in Ota, Ogun State, Nigeria, where all its academic activities are carried out. It is a private institution and a member of the Association of Commonwealth Universities. Institution C runs academic programmes in the College of Business and Social Sciences (CBSS), College of Leadership Development Studies (CLDS), Engineering (COE) and College of Science and Technology (CST). Approximately 15,000 students are enrolled in the institution (Covenant University 2018:online).
- (4) Tertiary Institution D: Institution D is located in the city of Ibadan, Oyo State, Nigeria, with approximately 33,000 student enrolments. In 2016, the institution made the top 1000 in the 'Times higher education rankings' although it had always made the top 10 in African webometrics rankings. There are 12 faculties in the institution, sports and residential services on campus (University of Ibadan 2018:online).
- (5) Tertiary Institution E: Institution E is a private institution located in Ikeji-Arakeji, Osun State, Nigeria. The institution was established by the Christ Apostolic Church (CAC)

Worldwide. Approximately 4,000 students were enrolled in the institution at the time of data collection. The existing location of the institution falls within the Oriade Local Government Area, Osun State. The institution is entirely residential (Joseph Ayo Baalola University 2018:online).

- (6) Tertiary Institution F: Institution F is situated in Akure, Ondo State, and approximately 15,000 students were enrolled in the institution at the time of data collection. There were seven schools within the institution, and according to webometrics ranking, the institution was ranked 11th best university and the 2nd university of technology in Nigeria, as of January 2017 (Federal University of Technology, Akure, (FUTA) 2018:online).

3.5.2 Youths

3.5.2.1 Sample size

Students were selected using the stratified convenient sampling technique. A stratified sampling method can be defined as the division of a population into strata. It is frequently used where variation is found within a population, and sufficient representation of every stratum is ensured (Taherdoost 2016:5). Convenience sampling is defined as the selection of respondents on the basis of easy availability (Taherdoost 2016:6). In this study, a sample size of 384 youths aged 15–24 years was drawn from the overall population of youths in South-West Nigeria based on Krejcie and Morgan's (1970) table for determining sample size from a given population (see Annexure 22). Stratified sampling was done to select a number of respondents from each tertiary institution based on the total population in each of the individual institutions in order to ensure even representation per institution (see Table 3.2).

Table 3.2: Sampling according to tertiary institution.

Tertiary institution per state	Total population per Institution	Calculation of % population	% population	Calculation of Number of respondents per institution	Number of respondents per institution
Institution A	7,000	$7000/131000 \times 100 = 5.3\%$	5.3%	$5.3/100 \times 384 = 21$	21
Institution B	57,000	$57000/131000 \times 100 = 43.5\%$	43.5%	$43.5/100 \times 384 = 167$	167
Institution C	15,000	$15000/131000 \times 100 = 11.5\%$	11.5%	$11.5/100 \times 384 = 44$	44
Institution D	33,000	$33000/131000 \times 100 = 25.1\%$	25.1%	$25.1/100 \times 384 = 96$	96
Institution E	4,000	$4000/131000 \times 100 = 3.1\%$	3.1%	$3.1/100 \times 384 = 12$	12
Institution F	15,000	$15000/131000 \times 100 = 11.5\%$	11.5%	$11.5/100 \times 384 = 44$	44
TOTAL	131,000		100%		384

As illustrated in Table 3.2, the samples drawn from each tertiary institution were dependent on the number of students enrolled in the institution to ensure equal representativeness. After obtaining permission to conduct the study from the selected tertiary institutions (see Annexure 10 to 15), the gatekeepers (the dean of students' affairs or registrar of the tertiary institution) introduced the researcher and research assistant to the college officers who were assigned as gatekeepers of the institutions to assist the researcher with the recruitment of respondents. The researcher used convenience sampling to recruit respondents based on their accessibility, physical proximity and interest in taking part in the study. Nearly the same number of volunteers as was required according to the required sample size per institution (see Table 3.2) agreed to participate and were therefore included in the study (see Table 3.3).

Table 3.3: Actual sample size

S/N	Tertiary institution per state	Calculated sample size	Actual sample size
1	Institution A	21	23
2	Institution B	167	171
3	Institution C	44	47
4	Institution D	96	98
5	Institution E	12	15
6	Institution F	44	47
TOTAL		384	401

As reflected in Table 3.3, the exact number of student respondents drawn from institution A, B, C, D, E and F were 23, 171, 47, 98, 15 and 47, respectively. Thus, a total sample size of 401 was attained, instead of the planned sample of 384.

PHASE 3

3.5.3 Delphi panellists

Expert sampling was utilised in this phase to select possible panellists. Expert sampling is a technique used to select participants in a non-random manner depending on their expertise regarding the phenomenon under study (Bhattacharjee 2012:69). For each expert group, the identified gatekeepers were (1) a provost of the College of Medicine, (2) a matron in an established multisystem hospital, (3) a permanent secretary in the government ministry, (4) a director in the government agency, and (5) a lead consultant of a relevant NGO. The gatekeepers were responsible for the selection of experts according to the stipulated criteria that defined expertise (see Section 3.5.3.1). The selection also ensured that all the stakeholders involved in the Delphi study had an equal voice in the validation process. The identified experts included (1) Group 1: five professors, (2) Group 2: five directors in the government ministries, (3) Group 3: five senior registered nurses/matrons, (4) Group 4: five directors in the government agencies, and (5) Group 5: medical doctors/consultants working for NGOs (see Table 3.4).

Table 3.4: Sample of Delphi panellists

Expertise group	Work environment	Number
Academics	Institution A	1
	Institution B	1
	Institution C	1
	Institution D	1
	Institution E	1
Directors from government ministries	Ministry of Education	1
	Ministry of Youth Development	1
	Ministry of Health	1
	Ministry of Information	1
	Ministry of Agriculture	1
Senior nurses	Hospital 1	1
	Hospital 2	1
	Hospital 3	1
	Hospital 4	1
	Hospital 5	1
Directors from government agencies	NAFDAC	1
	NPF	2
	NDLEA	1
	NCS	1
Medical doctors/consultants working for NGOs	NGO 1	1
	NGO 2	1
	NGO 3	1
	NGO 4	1
	NGO 5	1
	Total	25

3.5.3.1 Inclusion criteria for Delphi panellist

Experts complying with the required expertise for this specific phase were asked to volunteer to participate after the gatekeepers (see Section 3.11.2) shared a recruitment

letter with possible panellists until 25 panellists who volunteered were selected. All 25 panellists were included in the study based on the following required inclusion criteria, as described in Table 3.5.

Table 3.5: Criteria for expert’s selection

Group	Field of expertise	Designation
1	Academics	Professors
2	Government ministries	Directors
3	Nurses/ Matrons	Senior registered nurses or matrons
4	Government agencies	Directors
5	NGOs	Medical doctors/consultants working for NGOs

3.6 ETHICAL ASPECTS

Research ethics is described as what distinguishes acceptable and unacceptable behaviours while carrying out research. It includes norms or codes of conduct that guide researchers’ actions and behaviours (Parveen & Showkat 2017:1).

PHASE 1

3.6.1 Ethical considerations for Phase 1

In Phase 1 of this study, the protection of both the rights of individual respondents and the tertiary institutions were not taken for granted. The ethical principles emphasised by Polit and Beck (2013:231) were strictly adhered to and addressed.

3.6.1.1 Informed consent

As documented by Polit and Beck (2013:231), informed consent is defined as an agreement signed by respondents to take part in a given study after being provided with

sufficient information about the purpose, benefits, risks and the method of data collection. In this study, the steps taken to obtain consent are hereby discussed.

- **Consent from tertiary institutions**

A letter of request to conduct the study (see Annexure 7) within the university premises was written and personally delivered to the management of the tertiary institutions where the research was carried out. The letter was supported with the already obtained ethics certificate from Health Studies Research Ethics Committee (UNISA) (see Annexure 1 – issued 15 February 2017, with revised title approved on 20 October 2020), a copy of the guardian authorisation form (see Annexure 6), consent form for adult respondents (see Annexure 4), assent form for respondents below 18 years of age (see Annexure 5), as well as a copy of the research questionnaire (see Annexure 2). Approval was obtained before the researcher commenced with data gathering.

- **Consent from parents or guardians of respondents under 18 years**

After obtaining permission to conduct the study from the selected tertiary institutions (see Annexures 10 to 15), and the gatekeepers had introduced the researcher and research assistant to the college officers assigned to assist the researcher with the recruitment of respondents for the study, the researcher handed the parental consent forms to the college officers who distributed the forms (see Annexure 6) to those minors who were willing to participate and would share the documents with their parents/guardians for approval. The details of the youths (aged 15–17 years) whose parents also consented were later received from the gatekeepers.

- **Assent from respondents under 18 years**

After getting approval from the parents or guardians of respondents aged 15–17 years who volunteered to participate in the study, the researcher and the research assistant asked them to gather in a classroom at an agreed date and time. The researcher exhaustively explained the nature, purpose, benefits and possible outcome of the study in a very simple way and made sure they understood the information letter (see Annexure 5) by asking them a few questions about the information supplied to them. Respondents

were promised total confidentiality and privacy. Thereafter, assent forms were distributed before questionnaires (see Annexure 2) were handed to them for completion.

- **Consent from respondents who were between 18–24 years old**

After obtaining approval from the tertiary institutions to carry out the research study (see Annexures 10 to 15), the researcher provided information letters to all interested respondents who were 18 years and older (see Annexure 3). The letter explained the nature, purpose, confidentiality of the information they provided, benefits and possible outcome of the study in a very simple way. Respondents were asked by the researcher and research assistant to gather in a classroom at an agreed date and time. The researcher reiterated the information provided in the information letter and allowed time for questions to ensure that they understood their involvement in the study, including that their participation was voluntary and privacy was ensured. A consent or assent form (see Annexures 4 and 5) was provided to be signed before the questionnaires (see Annexure 2) were handed to respondents for completion. All respondents (youths aged 15–24 years) gave their consent and took part in the study (N=401).

3.6.1.2 Autonomy

Autonomy incorporates the freedom of individuals' actions and choices to decide whether to participate in research (Gallardo 2012:105; Schroder-Back, Duncan, Sherlaw *et al* 2014:3). In this study, respondents took part without being forced to participate and, where applicable, the guardians or parents, were provided with the information letter (see Annexures 3 to 5) which explained, the nature, purpose and benefits of the study in clear terms. The information letter also stated that they could opt-out of the research at any stage without being penalised or victimised, and that refusal to participate or discontinuance would not lead to any loss of personal benefit.

3.6.1.3 Justice

The principle of justice implies fairness and equity among gender, ages, races, and so forth. It is the researcher's obligation to treat respondents fairly and equitably while conducting research (Creswell 2014:133; Gallardo 2012:107; Schroder-Back *et al* 2014:4). The researcher ensured that all respondents were treated equally and not discriminated against, as there was no remuneration provided for participation in order to guard against any show of favouritism or preference. There was no class differentiation among the respondents in any way. All respondents who volunteered and who were conveniently available were included in the study.

3.6.1.4 Fidelity

Fidelity implies faithfulness and keeping promises or agreements, specifically between the researcher and the participant (Creswell 2014:133; Bhattacharjee 2012:138; Gallardo 2012:107). In this study, the researcher kept all promises and agreements to the letter by ensuring that no respondent was forced to continue participating in the study, and no personal information was divulged at any point in time. The results of the study were not shared with the parents of the respondents or with the gatekeepers in the tertiary institutions where respondents were recruited.

3.6.1.5 Confidentiality

Confidentiality of data has to do with the protection of information obtained from participants, as well as their identity (Gallardo 2012:106; Creswell 2013:140). The researcher ensured confidentiality by keeping personal information obtained from respondents private. This was achieved by not asking for the names, department and residential address of respondents. The researcher numbered questionnaires to ensure that the data could not be traced back to the respondents. Even though the phone numbers and email addresses of parents or guardians were obtained from respondents under the age of 18 years before participating in the study, they were only used to seek

their consent and was not linked to the data obtained from the individual respondents. Privacy and confidentiality were ensured through the seating arrangement, similar to examination requirements. No information regarding any respondent was disclosed to parents or guardians. During data analysis, confidentiality was maintained by making sure that the questionnaire was locked in a passcode-protected box, known and accessible to the researcher alone.

3.6.1.6 Anonymity

Anonymity has to do with dissociating names of respondents from their responses so that no one, including the researcher, can connect respondents' responses to their identity while carrying out the study (Gallardo 2012:106; Creswell 2013:139). Anonymity was maintained throughout the study by making sure that no names, personal addresses, email addresses, or phone numbers were provided on the questionnaires to ensure responses could not be linked to any of the respondents.

3.6.1.7 Non-maleficence

Non-maleficence is based on the belief that respondents must not be subjected to any harm or any form of discomfort while participating in a study (Gallardo 2012:106; Polit & Beck 2013:86). No harm, either emotional or social (shame, embarrassment and stigma) was envisaged. Moreover, no harm was expressed by any of the respondents as they had an opportunity to discontinue their participation in the study should they have any reasons to (see Annexure 3). The researcher provided the respondents with her contact details and that of her supervisor (see Annexures 4 and 5) should they have any questions about the study.

3.6.1.8 Beneficence

This principle is based on the belief that respondents should be selected from groups of people who will benefit from the research by contributing to their wellbeing (Creswell

2013:137; Gallardo 2012:105). The findings of this study were used to develop a strategic action plan that can be implemented to inform youths about non-risky lifestyles in an attempt to decrease their risk exposure and ultimately decrease NCDs in South-West Nigeria. The study respondents might not directly benefit, but youths in general and in future will benefit.

PHASE 3

3.6.2 Ethical considerations

The following ethical principles (already described in Sections 3.6.1.2 to 3.6.1.8) applicable to Phase 3 of the study were adhered to: right to autonomy; confidentiality/anonymity; non-maleficence; and beneficence. These principles were explained to the possible panellists of the e-Delphi in the recruitment letter (see Annexures 8 and 9). The means employed by the researcher to ensure that these principles were followed, are discussed below:

3.6.2.1 Autonomy

Participants' decision to participate in the study was voluntary. A recruitment letter (see Annexures 8 and 9) was shared with possible panellist by the gatekeepers (see Section 3.5.3). The panellist could ignore the invitation, thus decline to participate, or click on the link in the recruitment letter to gain access to the online assessment tool. By doing so, panellists agreed to participate.

3.6.2.2 Confidentiality and anonymity

Confidentiality and anonymity refer to the protection of information obtained from participants, on the one hand, and not associating the data gathered with the identity of the respondent, on the other (Roshaidai 2018:2). The researcher ensured that, as promised, confidentiality was maintained throughout the rounds. The data obtained from

the web-based assessment tool were received by the researcher as statistics and narrative data. No identifiable information was available to the researcher, and therefore the data could not be traced back to any individual panellist.

3.6.2.3 Non-maleficence

Non-maleficence means that participants must not be harmed by participating in research (Fleming & Zegwaard 2018:8). In this phase of the study, the researcher did not have to consider the possibility of panellists experiencing physical harm. The researcher also made sure that the researcher-participant rapport was not exploitative, as iterated by Polit and Beck (2012:152-153).

3.6.2.4 Beneficence

Beneficence posits that the research must contribute to the wellbeing of others (Claire, Higson-Smith & Sithole 2013:31). This research contributed to the wellbeing of youths by developing a strategic action plan to inform youths about non-risky lifestyles in an attempt to decrease their levels of exposure to risks and ultimately decrease NCDs in South-West Nigeria.

3.7 THE RESEARCH TECHNIQUES

Research techniques refer to the procedures and approaches used in a research study to collect, analyse and interpret data (Holloway & Wheeler 2010:293). The research technique of choice for Phase 1 was a questionnaire, and for Phase 3, the Delphi technique was chosen.

PHASE 1

3.7.1 The questionnaire

A questionnaire can be defined as a set of questions with fixed wording and sequence of presentation, as well as more or less precise indications of how to answer each question. A questionnaire was deemed suitable within the study context (Abawi 2013:3). The advantages of questionnaires that encouraged the researcher to employ this tool as a data gathering instrument included (Adesanya 2015:5):

- Data can be collected from a large number of respondents within a short period of time: In Phase 1 of this study, a total of 401 questionnaires were administered within a two-week timeframe because the researcher and the research assistant obtained permission to distribute questionnaires (see Annexure 2) to the volunteers within a classroom setting. Data gathered were easily analysed with the software within a short time. The closed-ended questions were easily analysed within one week, with the assistance of a professional statistician (see Annexure 20) using the IBM SPSS statistical software program, version 23, while the open-ended questions were open-coded by the researcher and analysed within two weeks.
- Anonymity (see Section 3.6.1.6) was ensured, thereby giving room for respondents' to express themselves and construct honest answers to questions without being influenced by anyone. The respondents' names or the personal identifying information of those who completed the questionnaires did not appear on the questionnaire and are not traceable to the respondents.

Questionnaires, as explained by Bhattacharjee (2012:74), Abawi (2013:3) and Mathiyazhagan and Nandan (2010:7), have some disadvantages. However, in this study the disadvantages were addressed in the following ways:

- Response rates can be poor when a questionnaire is utilised to gather data because people may not have the motivation to complete or return the questionnaire. The researcher ensured a group-administered questionnaire, whereby respondents (youths) were brought together at a common place (classroom) and time, and each respondent completed the questionnaire alongside other respondents, but they remained more than a metre apart to ensure privacy while in that room. Privacy and confidentiality were ensured by the seating arrangement, which was similar to examination requirements. To further enhance the response rate, the nine respondents who were not able to complete the questionnaire in the provided time, were allowed to return the completed questionnaires in a sealed envelope to gatekeepers in the college office. The researcher remained in the room, without disturbing any respondent, in order to address questions should any arise.
- A questionnaire makes it difficult to determine the truthfulness of responses provided by respondents. In this study, the researcher ensured that some open-ended questions, which served as qualitative enhancement, were included in the questionnaire. This strategy allowed individual opinions on questions, thereby ensuring truthful responses.
- Questionnaires can also be disadvantageous because they can only be used with respondents who can read and write the language in which the questionnaire is presented. All respondents were current students who could read, write and relate to the questions asked in English without any problem.

3.7.1.1 Development of the questionnaire

While designing the questionnaire for data collection, the researcher was guided by the study objectives and the reviewed literature; it included the WHO Stepwise approach to surveillance of NCDs as explained by the WHO (2017:239). The self-developed questionnaire consisted of both open-ended and closed-ended questions. Questions were framed to ensure that respondents were able to read, understand and respond to

them in a meaningful way. Complicated, negatively worded, ambiguous, biased, value-laden, double-barrelled, imaginary and presumptuous questions were avoided, ensuring that the questions were plain and simple in order to prevent incomparable responses that cannot be interpreted correctly, as explained by Bhattacharjee (2012:74) and Giesen, Meertens, Vis-visschers *et al* (2012:26). The questionnaire was assessed by the research supervisor and a scientific review committee. All suggested changes were implemented before the pilot study was conducted.

The characteristics of data collection tools are described hereafter.

3.7.1.2 Characteristics of the questionnaire

A questionnaire with 70 items, informed by the study objectives, was developed to collect data among youths targeted for this study, aged 15–24 years (see Annexure 2). The questionnaire consisted of seven sections:

- (i) Section A - General questions: this section consisted of questions pertaining to respondents' geographical location and informed consent.
- (ii) Section B - Biographic data: namely the age, gender, level of education and marital status of respondents.
- (iii) Section C - Included questions on lifestyle practices among youths, such as tobacco use, alcohol consumption, dietary patterns, as well as physical activity.
- (iv) Section D - Health status: this section focused on questions pertaining to the current health status of respondents in order to confirm the extent to which lifestyle habits have impacted negatively on the health of youths.
- (v) Section E - Included questions on respondents' perception of the impact of lifestyle patterns on NCDs.
- (vi) Section F - This section consisted of questions on barriers to healthy lifestyle patterns among youth. Questions on the possibility of youths quitting smoking, alcohol consumption, their sedentary lifestyle and poor diets in order to improve the health of youths were asked.

- (vii) Section G - Included questions on lifestyle changes that can contribute to a healthy lifestyle and prevent NCDs.

The questionnaire was pre-tested before the main study commenced (see Section 3.10).

PHASE 3

3.7.2 The Delphi technique

The Delphi technique is a method used by researchers to achieve consensus of experts' opinion on a particular issue in order to provide solutions to problems whenever the need to devise a problem-solving strategy arises (Avella 2016:1; Wilkes 2015:1; Lv *et al* 2013:2). The e-Delphi (also a type of questionnaire) entails the use of email or online web surveys that can be repeated continuously until consensus is achieved (Gill, Leslie, Grech *et al* 2013:4). The advantages of the Delphi technique encouraged the researcher to use this method as a validation tool, as supported by Donohoe, Stellefson and Tennant (2012:3) as well as Fink-Hafner, Dagen, Dousak *et al* (2019:5). The advantages are discussed next.

- **Anonymity**

The e-Delphi technique reduces the risk of group dynamics influencing research outcomes in a negative manner. The identified panellists could ignore the invitation to participate in the e-Delphi, thus decline the invitation, or click on the link provided in the recruitment letter to gain access to the web-based assessment tool; by doing this, they agreed to participate. Using a web-based tool, such as JotForm, meant anonymity (see Section 3.6.1.6) could be ensured. Also, respondents had the liberty to freely express their opinions without the constraints or influence of personality differences and social status. This, in turn, encouraged originality, honesty and a stable consideration of ideas, thereby reducing the risk of group dynamics negatively influencing research outcomes.

- **Flexibility and reflexivity**

The Delphi technique allows the researcher to adapt the technique to the research context, design the study to suit the research, and structure data gathering with considerable flexibility. The e-Delphi enabled the researcher to collect rich data as panellists were able to consider their input and took enough time to think through the problems between rounds in order to enhance the validity of the data.

- **Convenience**

The use of the e-Delphi assessment tool offers convenience to both the researcher and the respondents, as the researcher can log into the web-based assessment tool to update or monitor the activities while respondents can gain access to the web-based assessment tool at any time, anywhere, and when it is most convenient for them, as long as there is an internet connection.

- **Saves time and money**

The e-Delphi helps save time and cost as it does not require proximity or a face-to-face meeting between experts and the researcher. The 25 Delphi panellists were able to complete all the e-Delphi rounds within a six-week timeframe (see Chapter 6). Neither the panellists nor the researcher had any travelling and accommodation costs because the technique lacks geographical limitations.

The e-Delphi technique's limitations (Donohoe *et al* 2012:6) were addressed in the following ways:

- **Internet access and technology**

Internet accessibility challenges, the cost of purchasing data, and technological difficulties are factors that mitigate against e-Delphi techniques in a study (Donohoe *et al* 2012:6). In the third phase, the researcher ensured that the web-based assessment tool was compliant with both computer and mobile Apps since access to mobile networks is now readily available in Nigeria with wider coverage. The researcher and supervisor made themselves available for technical support for the e-Delphi study by providing their phone

numbers and email addresses in the recruitment letters (see Annexures 8 and 9). A pre-test was carried out to test the assessment tool in order to avoid misinterpretation and technological problems, and receive recommendations for improvement (see Section 3.10).

- **Experimental control**

Experimental control borders on possible distractions and time management problems associated with the e-Delphi technique. In this phase, the researcher identified vacation periods, high-season times, and major conferences as possible distractions to respondents and avoided gathering data during these times. The researcher also considered important design features such as ease of use, accessibility and data analysis options of the web-based software before selecting the web-based software. The JotForms was used to collect data because it possesses all the identified features. Depending on the response rate, the gatekeepers were asked to send the recruitment letter to all panellists again to act as a reminder in order to reduce the attrition rate.

3.7.2.1 Development of the assessment tool for validation

While designing the assessment tool for validation, the researcher was guided by the developed draft strategic action plan, and the assessment tool was embedded within the strategic action plan to ensure that every aspect could be validated. Complicated and unrealistic options were refrained from (Bhattacharjee 2012:74; Giesen *et al* 2012:26), ensuring that the options were simple in order to prevent incomparable responses. The assessment tool was checked by the researcher's supervisor, and all suggested changes were implemented before the pre-test of the assessment tool was conducted (see Section 3.10).

3.7.2.2 Characteristics of the assessment tool

An assessment tool with 86 items, informed by the draft strategic action plan, was developed by the researcher to gather experts' opinions to validate the draft strategic

action plan (see Table 5.3). The assessment tool consisted of five sections, asking panellists' opinions and comments on:

- (i) the inclusion of each strategy in the strategic action plan,
- (ii) the inclusion of the action statements provided,
- (iii) the methods suggested,
- (iv) the responsible persons for each action, and
- (v) the suggested time frames within which each action should be completed (see Table 5.3).

3.8 VALIDITY, RELIABILITY AND TRUSTWORTHINESS OF THE DATA COLLECTION INSTRUMENTS

PHASE 1

As emphasised by Zohrabi (2013:5-6), when undertaking any research study, consideration must be given to issues of validity. Validity in quantitative research refers to the extent to which a measure adequately represents the underlying construct that it is supposed to measure and might be enhanced via careful sampling, suitable instrumentation and correct statistical handling of the data (Bhattacharjee 2012:67). The following were measures taken to ensure validity.

3.8.1 Face validity

Face validity was assured by conducting a broad and comprehensive literature review on the concepts under investigation to correctly determine the main variables in this study. A part of the questionnaire was based on the WHO Stepwise approach to the surveillance of NCDs (see Annexure 21), a validated tool that has been used extensively internationally. The draft questionnaire was discussed with the researcher's supervisor and the scientific review committee to determine its relevance, comprehensiveness, readability and applicability. This allowed the easy gathering of data that identify current

risky lifestyle practices among youths in South-West Nigeria and the factors contributing to the specific lifestyle.

3.8.2 Internal validity

In order to guarantee internal validity, the forms of bias that could nullify the results of the study, as envisaged by the researcher, and how they were avoided in this study, are discussed below:

- In this study, the researcher envisaged design bias which was eliminated via the use of a combination of both closed and open-ended questions. This ensured the collection of rich information on the research topic, since the strengths of both designs were enhanced.
- Non-response bias which could raise questions about the validity of the study's results was also envisioned. To avert this, the researcher made sure that respondents were duly informed of the relevance and importance of the study's content by providing respondents with the information letter which explained, in clear terms, the nature, purpose and benefits of the study before asking them to volunteer to participate in this study. If a survey examines issues of relevance or importance to respondents, they are more likely to respond than to surveys that do not matter to them (Bhattacharjee 2012:82). Questions that are clear, non-offensive, and easy to respond to were asked to attract higher response rates. Finally, assurances of confidentiality and privacy (see Sections 3.6.1.5 and 3.6.1.6) helped improve response rates.

3.8.3 External validity

External validity has to do with the extent to which it can be inferred that the research findings hold true over variations in people, conditions, and settings. It refers to the extent to which conclusions can be generalised beyond the sample used in the study (Polit & Beck 2012:250; Grove *et al* 2013:202). Since the study population was far less than the

population of youths in South-West states in Nigeria, and in light of the difference in the study setting when compared to other parts of the country, the results of the study cannot be generalised to the entire population of youths across the country. However, since the study only focused on the South-West region of Nigeria, the outcomes can be generalised to South-West Nigeria. It will also be possible for other researchers to access the population's characteristics and the data trail provided to determine the level of similarity that may exist.

3.8.4 Reliability

When undertaking any research study, consideration must be given to matters relating to the reliability of the data collection instrument (Zohrabi 2013:5-6). Reliability is the degree to which the measure of a construct is consistent or dependable (Bhattacharjee 2012:56). The reliability of the research instrument used during Phase 1 of this study is hereby discussed.

PHASE 1

3.8.4.1 Reliability of the research questionnaire

The instrument itself is reliable when it is less dependent on subjectivity (Bhattacharjee 2012:56). The researcher ensured reliability by asking questions to ensure that respondents could understand clearly and knew the answers to questions, and by avoiding ambiguous items. In this study, open-ended questions were used as an equivalent-form of reliability test so that respondents had the opportunity to motivate their answers for a more personal opinion that serves as qualitative enhancement. The questionnaire administration method in this study was the same for all the respondents. The statistician also double-checked the reliability of data by utilising various conditions to confirm similarities and differences in data analysis, as suggested by Mouter and Noordegraaf (2012:1). The reliability of the research questionnaire was assessed using Cronbach's alpha coefficient, which was found to be 0.979. This instrument is reliable as

all the items and scales in the research instrument are highly correlated, indicating a high level of internal consistency (see Table 3.6).

Table 3.6: Reliability test on the research questionnaire

Intra-class Correlation Coefficient						
	Intra-class Correlation ^b	95% Confidence Interval		F Test with True Value 0		
		Lower Bound	Upper Bound	Value	df1	df2
Single Measures	.526 ^a	.477	.580	47.659	193	7913
Average Measures	.979 ^c	.975	.983	47.659	193	7913

PHASE 3

3.9 TRUSTWORTHINESS OF QUALITATIVE STUDY

To ensure trustworthiness, the principles described by Billups (2014:1-4) were taken into consideration during all three rounds of the Delphi technique. The assessment tool for validation allowed for individual input on each aspect of the draft strategic action plan until a 75% consensus between all panellists was reached. The principles of credibility, dependability, transferability, confirmability and authenticity were applied and are hereby discussed.

3.9.1 Credibility

Credibility relates to the extent to which qualitative data can be truthful, believable, and holistically represent the phenomenon under study (Keeney, Hasson & Mckenna 2011:3; Billups 2014:1). To ensure credibility in this phase, the Delphi assessment tool (see Annexures 18 and 19) was subjected to a number of reviews by the researcher, the supervisor, and the input received from a sample of panellists who assisted with the pre-test of the assessment tool. The researcher ensured that only experts with expertise in relevant careers (see Section 3.5.3) participated in the validation process.

3.9.2 Dependability

Dependability relates to strength, consistency, and the stability of qualitative data collected over time across various conditions (Miles, Huberman & Saldana 2014:3). In this phase, dependability was promoted through comment sections in the assessment tool. The researcher examined the comments from panellists and the categories that were generated from the data. The supervisor also examined documentation on all the steps taken by the researcher, reviewed all the categories, and authenticated the analysis of results.

3.9.3 Transferability

Transferability relates to how rich, detailed and relevant the description of the generated information is. The more detailed the description of the information, the higher the likelihood that the findings can be transferable to similar cases (Keeney *et al* 2011:3; Billups 2014:3). Transferability in this phase was attained by presenting a rich, detailed and relevant description on how consensus of experts' ideas, opinions, submissions and judgements on the developed draft strategic action plan was attained (see Chapter 6).

3.9.4 Confirmability

Confirmability entails how neutrality and objectivity are strengthened within the context under study (Keeney *et al* 2011:3; Billups 2014:4). To ensure confirmability, the researcher precluded the risk of bias by making sure that any form of relationship, whether casual acquaintance or strong intimacy between researcher and potential panellists, was avoided. The panel members were isolated from each other in order to give room for individuals to freely express their opinions without outside influence (Avella 2016:5-6). The researcher made sure that the qualification and experiences of panellists were taken into account while selecting them for participation (see Section 3.5.3).

3.9.5 Authenticity

Authenticity relates to the intended benefits of the research to the target population (Bhattacharjee 2012:111; Keeney *et al* 2011:3). To ensure authenticity, the researcher stated the intended aim of the study, which was to develop a strategic action plan that can be implemented to inform youths about non-risky lifestyles in an attempt to decrease their levels of exposure to risks and ultimately decrease NCDs in South-West Nigeria. This will contribute positively to the health of the youth population in Nigeria.

3.10 PRE-TEST

Pre-testing is defined as a means of cross-checking that questions asked in a research instrument are well understood and interpreted by the target population as intended in order to detect misinterpretation, ambiguity, or other problems that respondents may come across while completing the research instrument (Hilton 2017:1).

PHASE 1

3.10.1 Questionnaire

Prior to data collection, a pre-test of the questionnaire was done to identify and detect any gaps inherent in the instruments, assess the feasibility of the study, and determine how well the respondents were able to understand and correctly interpret the questions in the data collection tool. The pre-test also availed the researcher the opportunity to test the effectiveness, validity and reliability of the data collection tool and incorporate comments from the pre-test respondents in order to finalise the final data collection instrument (Abawi 2013:9).

As suggested by tools4dev (2014:3), the questionnaire was pre-tested on 30 respondents (youths aged 15–24 years) who volunteered to participate in the pre-test exercise. These volunteers were from a tertiary institution in South-West Nigeria, which has similar

characteristics as the institutions used in the main study, and were selected after obtaining approval from the gatekeepers (dean of students' affairs) (see Annexure 17). The volunteer respondents and the data gathered were excluded from the main study. The researcher and research assistant met with the management of the institution, introduced themselves and briefed them on the pre-test process. Due to the gatekeepers' (dean of students' affairs) tight schedule, an officer was assigned to assist the researcher with the pre-test. The officer was thoroughly intimated with the age group (15–24 years) needed for the process.

The officer assisted in providing the researcher with students who met the inclusion criteria and scheduled when to meet with all possible participants. On the scheduled day, the officer took the researcher and the research assistant to a large classroom where 82 students were waiting to be addressed by the researcher. The students were briefed in simple terms by the researcher on the nature, purpose, benefits and possible outcome of the study, as the information letter explained (see Annexure 3). The researcher made sure they understood the content of the information letter by asking them a few questions about the information supplied to them, and the students were promised total confidentiality and privacy (see Section 3.6).

Thirty students (youths aged 15–24 years) volunteered to participate in the pre-test. Of those, eight were minors and were provided with assent forms (see Annexure 5), an information letter to their parents (see Annexure 3), as well as the parental/guardian consent forms (see Annexure 6). Informed consent letters (see Annexure 4) were given to the remaining 22 volunteers. The date, time and venue for the pre-test were arranged with the volunteers to accommodate those who needed to obtain parental/guardian approval. After the signed parental/guardian consent, the signed informed consent and assent forms (see Annexure 4 and 5) were returned, questionnaires (see Annexure 17) were distributed and completed in the classroom on the scheduled date. The researcher shared the results of the pre-test with her supervisor. A total of 23 respondents complained about the length of the questionnaire, and it therefore had to be shortened to improve respondents' adherence to answer all questions without compromising the

information to be received. The necessary amendments (see Table 3.7) were made to the instrument before the final version of the instrument was printed and ready for administration (see Annexure 2).

Table 3.7: Summary of the amendments made to the research instrument

S/N	Section of research instrument	Adjustments made
1	Too many questions regarding lifestyle practices.	<ol style="list-style-type: none"> Seven questions were rephrased for better understanding. Two questions were deleted because of duplication. Number of questions asked was reduced from 65 questions to 36 questions.
2	Too many questions regarding the perception of youths on the impact of lifestyle patterns on NCDs.	<ol style="list-style-type: none"> Four questions were rephrased for better understanding. Number of questions was reduced from 26 questions to nine questions.
3	Barriers to healthy lifestyle pattern among youth.	<ol style="list-style-type: none"> One question was rephrased for better understanding. Number of questions asked was reduced from seven questions to three questions.
4	Too many questions regarding the lifestyle changes that can contribute to the prevention of NCDs.	<ol style="list-style-type: none"> Number of questions asked was reduced from 15 questions to five questions.

PHASE 3

3.10.2 Delphi assessment tool for validation

The pre-test enabled the researcher to identify and detect the gaps inherent in the assessment tool, assess the feasibility of the exercise, and determine how well the

participants were able to understand and correctly interpret the questions in the assessment tool. The pre-test also availed a researcher the opportunity to test the effectiveness and the trustworthiness of the assessment tool (Abawi 2013:9) and incorporate comments from the pre-test respondents in order to finalise the final assessment tool.

Seven participants with the required expertise (see Section 3.5.3), who agreed to participate in the pre-test exercise and had similar characteristics as the experts used in the main Delphi, pre-tested the assessment tool. The participants and the data gathered were excluded from the main study. The researcher sent a recruitment letter to the participants through the gatekeepers (see Section 3.11.2) to intimate them with the purpose of the study. The recruitment letter prompted the participants to click on the link provided to direct them to the assessment tool only if they agreed to participate. The researcher received the data online with comments in the spaces provided, once the participants clicked on the submit button. The pre-test results were carefully considered by the researcher and her supervisor. Thereafter, the researcher adapted the initial instruction to participants regarding the persons to be responsible for carrying out the action statements using the outlined methods (see Table 5.3), in order to improve the consensus rate without compromising the information to be received. Other suggested amendments (see Table 3.8) were made to the assessment tool before the final version was ready for administration in the main Delphi (see Annexure 18).

Table 3.8: Summary of the amendments made to the assessment tool

S/N	Section of assessment tool	Adjustments made
1	Instruction to participant on responsible persons	Responsible persons were changed to responsible person/s
2	Instructions to participant on responsible persons	“Please choose the most appropriate persons to be responsible. Please tick all the possible options where more than one option is possible” was modified to:

S/N	Section of assessment tool	Adjustments made
		"Please tick the most appropriate responsible person/s. Please only tick one option."
3	Incomplete Instructions to participants regarding the methods to reach the objective	"If you ticked disagree, please proceed to (method number)" was added to the tool.

3.11 DATA GATHERING PROCESS

PHASE 1

3.11.1 Administration of the questionnaires

The researcher and one research assistant participated in the data collection. The research assistant was selected due to her ability to communicate in English, and her experience in assisting with conducting research. The research assistant assisted with travelling to the tertiary institutions to follow up on the letters of approval to carry out the research. The research assistant also assisted in the distribution of research questionnaires to the respondents to make the process faster. The following steps were taken during the administration of questionnaire:

Step 1:

Before commencement of the research, an information letter to ask for permission to conduct research (see Annexure 7) was hand-delivered to the gatekeepers (the dean of students' affairs or alternatively the registrar of the tertiary institution) of each tertiary institution. The letter also included the information letter for the respondents (see Annexure 3), a consent letter for adult participants to sign if they agreed to take part in the study (see Annexure 4), assent forms for minor respondents (see Annexure 5), as well as the ethics certificate from the Health Ethics Research Committee, Department of Health Studies, UNISA (see Annexure 1).

After obtaining permission to conduct the study from the six selected tertiary institutions (see Annexures 10, 11, 12, 13, 14 and 15), the gatekeepers (the dean of students' affairs or alternatively the registrar of the tertiary institution) introduced the researcher and the research assistant to the college officers who were assigned to assist the researcher with the recruitment of respondents for the study. The researcher and the research assistant briefed the college officers on the data gathering process. The college officers were thoroughly intimated with the age group (15–24 years) needed for this study. They therefore mobilised students to attend a voluntary scheduled meeting to provide information pertaining to their possible involvement in the study.

Step 2:

On the scheduled day, which was the second visit to the tertiary institutions, the college officers (assigned by the gatekeepers) went to the lecture rooms to remind students aged 15–24 years who were willing to participate to assemble in a lecture room at the appointed time in order to meet with the researcher and the research assistant. The students who gathered in the classroom at the appointed time were briefed in simple terms by the researcher on the nature, purpose, benefits and possible outcome of the study in order to reiterate the content of the information letter. The researcher made sure they understood the information by asking them a few questions about the information supplied to them. After the briefing, the principles of autonomy, confidentiality, anonymity, justice, fidelity, non-maleficence and beneficence (see Section 3.6) were guaranteed, and the researcher asked the students to volunteer to participate in the study.

The gatekeepers provided all underaged respondents (youths aged 15–17 years) who volunteered to participate in the study with parental/guardian consent forms to share with their parents/guardians for signing (see Annexure 6 and Section 3.6.1). Thereafter, assent forms (see Annexure 5) were distributed to all volunteers between the ages of 15–17 years while all volunteers between the ages of 18–24 years received consent forms (see Annexure 4) to read and sign, indicating their understanding of the conditions and purpose of the study and an agreement to participate in the study (see Section 3.6.1). The volunteers submitted the signed forms in a box placed in the college officer's office.

The date, time and venue for data collection were arranged with the volunteers by the college officers and communicated to the researcher to come for data collection.

Step 3:

Two days before the third visit to the tertiary institutions, the researcher contacted the college officers to assist with the mobilisation of students who volunteered to participate in this study. On the third visit, the researcher and the research assistant met with the volunteers for the second time via the assistance of the college officers of the institutions. Those volunteers between the ages of 15–17 years were asked to first provide the gatekeepers with the relevant signed parental/guardian consent letters and their own assent letters (see Annexure 4 and 5), which were then placed in a container for safekeeping. This was done to ensure that only those whose parents agreed for them to participate were included in the study. All volunteers aged 18 years and older were asked to submit their signed informed consent forms, which were also placed in a container for safekeeping. This was done to ensure that only those who signed the consent form were included in the study. The questionnaires were then distributed after respondents took their seats in a similar way to that of examination requirements (see Section 3.8). Twenty minutes was assigned to complete the questionnaires. Completed questionnaires were numbered with unique identification numbers and placed in another container to ensure that the consent forms and completed questionnaires could not be linked to any of the respondents.

Step 4:

After completing the data collection exercise, the researcher and the research assistant thanked the participants and the college officers for their immense contribution to the study. An appreciation letter (see Annexure 23) was shared with the management of the tertiary institutions.

PHASE 3

3.11.2 The validation process

The following steps were followed during the validation process using an e-Delphi technique in order to achieve consensus on panellists' opinions of the developed draft strategic action plan:

- The Delphi process began with the identification of gatekeepers who could assist with the recruitment of proposed experts to participate as panellists. The identified gatekeepers included a provost of the College of Medicine, a matron in an established multisystem hospital, a permanent secretary in the government ministry, a director in the government agency, and a lead consultant of a relevant NGO.
- The identified gatekeepers met with the researcher at different times in a pre-arranged Zoom meeting because of the lockdown restrictions imposed due to the Covid-19 pandemic. The researcher gave a verbal briefing on what the gatekeepers were expected to do to assist with the recruitment of experts; stating the required expertise in clear terms (see Section 3.5.3).
- The gatekeepers asked that the researcher should furnish them with the recruitment letter (see Annexure 8) which provides a full description of the study and experts' proposed involvement in the study. This was sent to their personal email in order for them to forward the recruitment letter to the prospective experts. The recruitment letter was shared with possible panellists who could disregard the invitation, thus decline to participate, or click on the link in the recruitment letter to gain access to the online assessment tool, and by doing this agree to participate.
- The researcher gave the panellists who agreed to participate in the study enough time (two weeks) to review the developed draft strategic action plan with embedded

assessment tool (see Table 5.3). The follow-up process was maintained through the gatekeepers until all 25 panellists completed the assessment tool.

- The developed draft strategic action plan was Delphied over two rounds until consensus of 75% was reached.

3.12 DATA ANALYSIS

Data analysis involved the analysis and careful management of both the qualitative and quantitative data. Whatever the nature of the data, it is their analysis that determines the forms and results of the research (Flick 2013:2).

PHASE 1

3.12.1 Analysis of the findings of the questionnaire

The data analysis procedure started with the careful examination and evaluation of various responses in the questionnaire. It should be underscored that the researcher ensured the accuracy of data entry by making a double entry and verifying whether there were differences in data sets from the same tool. Data that differed during double-entry were cross-checked against the data collection instrument concerned, and problems were rectified. A statistician (see Annexure 20) assisted the researcher to analyse the data. Seventeen questionnaires had several missing responses and were therefore discarded and not included in data analysis; 384 out of the 401 questionnaires were fully completed, thus N=384 questionnaires were analysed. The data entry, which lasted for three weeks, was performed by the researcher and the statistician in a private office to prevent other people from coming into contact with the questionnaires.

Quantitative data from closed-ended questions were analysed using the IBM SPSS statistical software program, version 23.0. Descriptive statistics were done, frequency distribution tables were constructed, and the Chi-square test was utilised to identify

possible associations between variables. For qualitative enhancement, the open-ended questions were analysed via a data transformation procedure, using open coding and quantitative content analysis, which allowed the researcher to convert responses to numerical data (Ludovic 2012:6). Coding is defined as the process of arranging and organising the information into 'lumps' before attaching meaning to the 'lumps' (Creswell 2009:192). In this phase, content analysis took place using open coding by converting raw data into categories based on valid interpretations through the process of breaking down, groping, and categorising data; and not just describing themes (Holloway & Wheeler 2010:179; Creswell 2009:192).

PHASE 3

3.12.2 Data analysis

Data from each round of the Delphi was analysed using (1) simple percentages to rate the level of consensus of respondents' responses on every strategy, action statement method to reach the objective, responsible person/s and time frames. (2) The narrative data were open-coded while content analysis was done according to Tesch's eight steps to organising qualitative data (Creswell 2014:198). These steps were taken by the researcher in a systematic transcription process for the analysis of the narrative data received from open-ended questions (the comment sections in the assessment tool):

Step 1: The researcher carefully read through all comments and took note of some ideas as they came to mind in order to obtain a sense of completeness.

Step 2: The researcher selected one case to deeply think about the fundamental meaning in the information and documented her thoughts in the margin.

Step 3: By clustering similar categories together, the researcher made a list of all the categories.

Step 4: The researcher applied the list of categories to the available data and abbreviated the categories as codes in order to organise the data. The codes were written next to the right sections of the transcripts while the researcher cross-checked to see if any new categories and codes emerged.

Step 5: The researcher found the most straightforward phrases/words for the categories and grouped them by drawing lines between categories to demonstrate the relationships.

Step 6: The researcher concluded on the abbreviation for each category and assigned alphabets to the codes.

Step 7: The data material belonging to each category was assembled, and a preliminary analysis was performed.

Step 8: The researcher re-coded existing material where needed, and an adaption to the plan was then implemented. The process was repeated until 75% consensus was reached.

3.13 SUMMARY

This chapter presented an in-depth description of the mixed-methods research design employed in this study. The research setting, study population, sampling techniques, validity and reliability aspects, data gathering processes and ethical considerations for Phase 1 and Phase 3 were also discussed (see Table 3.1), and the reliability of the research instrument was tested. Chapter 4 focuses on the data presentation, data analysis, and interpretation of the findings of Phase 1 of this study.


CHAPTER 4

PHASE 1: ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF THE FINDINGS

4.1 INTRODUCTION

This chapter focuses on the presentation, analysis, and interpretation of the data from Phase 1, as well as of the discussion of the findings (see Table 4.1).

Table 4.1: Thesis structure and chapter layout

CHAPTER	DESCRIPTION OF CHAPTER CONTENT	PURPOSE
CHAPTER 1	OVERVIEW OF THE STUDY	
CHAPTER 2	LITERATURE REVIEW 5. The TPB 6. Lifestyle and non-communicable diseases among youths	Questionnaire Development
CHAPTER 3	1. Research design 2. The methodology followed (population, sampling, data gathering techniques, ethical aspects, data gathering process) as well validity and reliability of: 2.1 Phase 1 2.2 Phase 2 2.3 Phase 3	Methodology for Phase 1, Phase 2 and Phase 3
CHAPTER 4 	Phase 1: 1. Data analysis and presentation 2. Interpretation of the findings 3. Discussion of the findings	Analysis of the findings from youths using a questionnaire

As stated in Section 3.12.1, 17 out of the 401 questionnaires that were received had missing responses and were therefore discarded and not included in the data analysis, thus N=384 questionnaires were analysed. The data from these 384 questionnaires were analysed using the IBM SPSS statistical software program, version 23.0. Frequency distribution tables were constructed using tables, pie charts and bar charts. The open-ended questions were open-coded according to the description by Creswell (2009:192), as described in Section 3.12. The characters used in the presentation of the quantitative data are illustrated in Table 4.2.

Table 4.2: Characters used during interpretation and description of results

N	Represents the number of respondents (Youths aged 15–24years) who completed the questionnaire (N=384)
n	Represents the number of respondents who completed a particular question in the questionnaire, e.g. male (n=204)
F	Represents the number of respondents who responded in a certain way (yes or no)
f	Represents the percentage of respondents who responded in a certain way

4.2 GEOGRAPHICAL LOCATION (N=384)

As indicated in Table 4.3, 11.5% (n=44) of respondents were from Ondo State, 5.5% (n=21) were from Ekiti State, 3.0% (n=12) were from Osun State, 25.0% (n=96) were from Oyo State, 11.5% (n=44) were from Ogun State, and 43.5% (n=167) were from Lagos State. All six states that make up the south-west region of Nigeria (Ekiti, Lagos, Ogun, Ondo, Osun and Oyo) (Faleyimu *et al* 2010:1; Nwokoye 2009:5) were therefore represented in this study.

Table 4.3: Geographical location of respondents (N=384)

Geographical location	n	f =%
Ondo State	44	11.5
Ekiti State	21	5.5
Osun State	12	3.0

Geographical location	n	f =%
Oyo State	96	25.0
Ogun State	44	11.5
Lagos State	167	43.5
Total	384	100

4.3 BIOGRAPHICAL DATA (N=384)

Aggregated data from the questionnaire pertaining to the respondents' biographical data, namely age, gender, level of education and marital status are described in Sections 4.3.1 to 4.3.4.

4.3.1 Age (N=384)

In line with the United Nations' definition, youth are people between the ages of 15–24 years (UNDP 2013:9; PRB 2017:1); the respondents in this study were therefore youths. As indicated in Table 4.4, 73.4% (n=282) of respondents were within the age range of 18–24 years, and 26.6% (n=102) were within the age range of 15–17 years (minors). In Nigeria, a minor is regarded as any person under the age of 18 years (Nigeria Federal Ministry of Health 2014:vii). Only two age ranges were employed to differentiate between respondents who were minors (15–17 years) and those who were defined as adults (18–24 years).

4.3.2 Gender (N=384)

This study included 53.1% (n=204) male respondents and 46.9% (n=180) females (see Table 4.4). More male respondents were not considered a problem as more male students are annually enrolled as students in Nigerian universities (Adewuyi, Adebayo & Onyia 2017:3). The demographic data of the tertiary institutions, where the samples were drawn, as well as the information obtained from various websites confirmed a mix of both male and female students, with males being in the majority (ABUAD 2018:online; UNILAG

2018:online; University of Ibadan 2018:online; FUTA 2018:online; JABU 2018:online; Covenant University 2018:online).

4.3.3 Level of education (N=384)

The respondents' level of education was well aligned with the Nigerian education system whereby the higher education system consists of both undergraduate and graduate stages (Nuffic 2017:10). As indicated in Table 4.4, 70.8% (n=272) of respondents were enrolled in the university as undergraduates, while 29.2% (n=112) were in graduate school. In Nigeria, before a child can proceed to the tertiary institution for further education, it is compulsory to complete pre-primary, primary and secondary education. This mandatory education usually takes place within the first 10 years of education for children between the ages of 5–15 years. In the Nigerian education system, at the age of 15 years, an individual is considered old enough to get enrolled in a tertiary institution (Nuffic 2017:6); contradictory to the 16-year minimum age for university admission (Akindada 2015:1). Children who were 15 years old, despite the 16-years age limit, were already enrolled in the universities where this study was conducted (see Table 4.4).

Table 4.4: Demographic characteristics of the respondents (N=384)

Variable		n	f =%
Age	15–17 years	102	26.6
	18–24 years	282	73.4
	Total	384	100
Gender	Male	204	53.1
	Female	180	46.9
	Total	384	100
Level of education	University	272	70.8
	Graduate	112	29.2
	Total	384	100
Marital status	Single	377	98.2
	Married	7	1.8

Variable		n	f =%
	Separated	0	0.0
	Divorced	0	0.0
	Total	384	100

4.3.4 Marital status (N=384)

The median age at first marriage among Nigerian women is identified as 18.1 years, while the median age at first marriage among Nigerian men is identified as 27.2 years (Nigeria Demographic and Health Survey 2013:4). As indicated in Table 4.4, only 7 (f=1.8%) respondents were married. This might be because education has been confirmed to be strongly connected with marriage at an older age (Sabbah-Karkaby & Haya 2017:1), as the data were gathered at universities.

Data pertaining to the respondents' involvement in risky lifestyle practices such as smoking, alcohol consumption, unhealthy diets and physical inactivity were gathered, analysed and presented (see Section 4.4 to 4.7). These aspects are discussed next.

4.4 SMOKING (N=384)

Globally, tobacco smoking is accountable for the deaths of over 7 million people every year (WHO 2017:2). It was therefore important to assess smoking as one type of risky lifestyle behaviour. Tobacco smoking predisposes smokers to a greater risk of developing cardiovascular disease, chronic lung disease (COPD), circulatory diseases, type 2 diabetes, as well as cerebral haemorrhages (WHO 2017:2; Aleris-hamlet 2016:4). This study's findings revealed that 49.5% (n=190) of the respondents did not smoke (see Table 4.5) while the other 50.5% (n=194) smoked. These findings contrast sharply with the findings from other studies in Peninsular Malaysia and India where tobacco smoking among young people had low prevalence rates of 14.6% in Peninsular Malaysia and 22.1% in India (Hock Lim, Li Lim, Teh *et al* 2017:1; Sharma, Singh, Lal *et al* 2015:1).

One hundred and forty-two (f=69.6%) male respondents and 52 (f=28.9%) female respondents were smokers (see Table 4.5). In a Peninsular Malaysia study, smoking prevalence was also significantly higher among males (72.1%) than females (27.9%) (Hock Lim *et al* 2013:1), and in China (Han & Chen 2015:1), similar results were found (0.8% males and 3.2% females). The findings of this study revealed that tobacco smoking among youths in South-West Nigeria is alarmingly on the rise and public health efforts should be focused on preventing youths from being initiated into this harmful behaviour (Harvey & Chadi 2016:5).

Table 4.5: Smoking of tobacco products (N=384)

RESPONSE	MALE (n=204)		FEMALE (n=180)		Combined sexes	
	F	f =%	F	f =%	F	f =%
Yes	142	69.6	52	28.9	194	50.5
No	62	30.4	128	71.1	190	49.5
Total	204	100	180	100	384	100

4.4.1 Smoking substances other than tobacco (N=384)

Youths smoke other substances which are equally dangerous to their health (Narain, Sardana, Gupta *et al* 2011:3; Benjamin 2012:7). Data illustrated in Table 4.6 indicated that 45.1% (n=173) of respondents smoked substances other than tobacco. Although the types of substances were not identified in this study, other studies revealed that substances such as bidi, hookah, cigars, pipes, and ganja are common among young people (Narain *et al* 2011:1). Aside from these dangerous substances, Benjamin (2012:7) and Wong *et al* (2016:1) affirmed that young people also smoke tendu leaves, marijuana, snus, lozenges, Shisha and strips (Arrazola, Singh, Corey *et al* 2015:1; Narain *et al* 2011:1).

Table 4.6: Smoking of substances other than tobacco (N=384)

RESPONSE	n	f =%
Yes	173	45.1
No	211	54.9
Total	384	100

4.4.2 Smoking before breakfast, within the past 30 days (n=194)

The findings revealed (see Table 4.7) that out of the 194 respondents who were smokers at the time of data collection, an alarming proportion of respondents (91.2%; F=177) admitted to smoking before breakfast within the past 30 days, while only a small proportion of the respondents (8.8%; F=17) did not smoke before breakfast. The implication of these findings is that the pattern of tobacco smoking among youths in South-West Nigeria is of concern (Amorha, Jiburu, Okonta *et al* 2017:1); it might suggest a trajectory of nicotine dependence indicated by the need to smoke before breakfast. Similar studies by Bhattacharyya, Pala, Medhi *et al* (2018:4) and Eldalo (2016:2) also reported an 18.2% and 50% smoking prevalence among young people who smoked in the early morning on an empty stomach; indicative of a higher likelihood of nicotine dependence (Caraballo, Novak & Asman 2009:4).

Table 4.7: Smoking before breakfast, within the past 30 days (n=194)

RESPONSE	F	f =%
Yes	177	91.2
No	17	8.8
Total	194	100

Data from the open-ended questions were analysed using open coding according to Tesch's eight steps for organising qualitative data (see Chapter 6). The researcher carefully read through all responses and made a list of all similar aspects (they were coded). All similar aspects were grouped together to identify the various categories; as described by Creswell (2014:198), this is an effective process for transcribing unstructured data. To illustrate how the categories were identified, some of respondents'

direct quotes are provided (see Section 4.4.3 to 4.11.3) and illustrated as the sub-categories.

It is important to note that the numbers provided in the text are not to quantify the qualitative data, but an attempt to indicate how many similar responses pertaining to a specific motivation were received (see Sections 4.4.3 to 4.11.3).

4.4.3 Reasons for smoking (n=194)

A number of scholars have documented that young people engage in smoking for different reasons (Okagua, Opara & Alex-Hart 2016:1). Respondents provided their individual reasons for smoking tobacco products, smoking other substances, as well as why they prefer to smoke before breakfast. There were 194 responses to motivate reasons for smoking tobacco products, 173 responses to motivate smoking anything other than tobacco products, and 177 responses explaining why they smoke before breakfast. All the responses under each of the mentioned open-ended questions were open-coded and similar ideas were grouped together into specific categories. Categories identified as the reasons for smoking tobacco products are illustrated in Table 4.8; the identified categories for smoking anything other than tobacco in Table 4.9; and those for smoking before breakfast in Table 4.10.

Respondents provided different reasons for smoking tobacco products which were categorised in relation to appetite (2 responses), stress (28 responses), curiosity (69 responses), fun (12 responses), addiction (15 responses), boredom (22 responses), poor social life (23 responses), and depression (23 responses) (see Table 4.8). It has also been previously documented that young people smoke for different reasons (Okagua *et al* 2016:1).

Table 4.8: Reasons for smoking

Category	Sub-category
a) Appetite (2 responses)	<ul style="list-style-type: none"> • <i>“I like to smoke because I don’t like to eat. It helps me to get hungry”</i> • <i>“I don’t always have appetite for food, so I smoke instead and then I can eat”</i>
b) Stress (28 responses)	<ul style="list-style-type: none"> • <i>“I always smoke anytime I feel stressed out”</i> • <i>“Stress is the main reason why I am smoking”</i> • <i>“I smoke to relieve my tension”</i>
c) Curiosity (69 responses)	<ul style="list-style-type: none"> • <i>“I am just curious”</i> • <i>“I just wanted to know how it feels to smoke”</i> • <i>“Cheer curiosity made me smoke”</i>
d) Fun (12 responses)	<ul style="list-style-type: none"> • <i>“Smoking makes you catch a lot of fun for real”</i> • <i>“I smoke for the fun of it”</i>
e) Addiction (15 responses)	<ul style="list-style-type: none"> • <i>“Ha! I cannot do without smoking”</i> • <i>“If I don’t smoke, what will I be doing?”</i> • <i>I believe I am now addicted to smoking”</i>
f) Boredom (22 responses)	<ul style="list-style-type: none"> • <i>“I smoke whenever I feel bored”</i> • <i>“Smoking helps me not to feel boring”</i> • <i>“Anytime I’m bored, I smoke to help myself pass the day”</i>
g) Boost social life (23 responses)	<ul style="list-style-type: none"> • <i>“I smoke because people respect smokers”</i> • <i>“I smoke to belong to the top group of guys in my school”</i> • <i>“When you smoke, you can never have a dull social life”</i>
h) Depression (23 responses)	<ul style="list-style-type: none"> • <i>“I like smoking in order to improve my depressed mood”</i> • <i>“I feel so depressed almost every time so, smoking brightens my low mood and gloomy day”</i>

a) Appetite

Appetite is defined as the desire to consume food (Merriam-Webster Dictionary 2019:online). It is a significant element in an individual’s diet for maintaining required food

intake by the body (Andreae 2018:1). Two respondents reported that they smoke tobacco products because it enhances their appetite:

“I like to smoke because I don’t like to eat. It helps me to get hungry”

“I don’t always have appetite for food, so I smoke instead and then I can eat”

However, these responses were contradictory to literature evidence that smoking may decrease food intake by acting as an appetite suppressant (Audrain-McGovern & Benowitz 2011:2).

b) Stress

Stress is seen as a condition resulting in anxiety, uneasiness, and emotional tension which is perceived as threatening (Fink 2017:6). In support of literature that indicates young people feel that smoking assists them in managing their stress (Okagua *et al* 2016:1), 28 responses were received that participants smoke due to stress:

“Smoking is a form of releasing tension and stress”

“When I have a lot bottled up in my psyche, I smoke to get the tension and stress out of my system so that I can feel so light”

“I smoke to free my mind from daily stress”

c) Curiosity

The Cambridge Dictionary (2019:online) defines ‘curiosity’ as the eagerness to learn about something, and it is being described in literature as a reflection of youths’ vulnerability to smoking (Portnoy, Wu, Tworek *et al* 2014:1). Numerous responses (69) were indicative of the fact that participants felt they started smoking out of curiosity:

“I was so, curiosity made me smoke, I just wanted to know what it was like to smoke”

“I began to smoke because I was curious to know what smokers actually enjoy in cigarettes”

“This my age is the stage when we get so curious about so many things. My curiosity got me smoking. lol”

Similar results were found in a study by Lim, Li Lim, Teh *et al* (2017:6), who confirmed that some young people smoke because they want to satisfy their curiosity.

d) Fun

Fun, described as a source of satisfaction, pleasure, enjoyment or merriment (Thesaurus.com 2019:online), was mentioned by some 12 respondents as their reason for smoking:

“I like to smoke to have fun because you only live once”

“Smoking guarantee having fun like crazy”

“100 percent fun is assured when you smoke”

According to the literature, young people smoke because they want to have fun (Lim *et al* 2015:6; Baig, Bakarman, Gazzaz *et al* 2016:4).

e) Addiction

Addiction is defined as a long-term failure or difficulty in stopping or moderating the consumption of a substance, chemical, activity, or drug, without minding its psychological

or physical harm (Felman 2018a:online). Fifteen responses were received to confirm that some respondents felt they are addicted to smoking because they had been engaged in long-term smoking:

“I am addicted to smoking. I know it is unbelievable but I am so helpless right now yeah”

“Smoking starts off my day. I am so addicted to the stuff”

“If you understand the power of addiction, you will understand why I smoke at every slight opportunity that I get”

In Singapore (Subramaniam, Shazana, Fauziana *et al* 2015:7) and Malaysia (Lim *et al* 2015:1), addiction was found to be one of the reasons for smoking tobacco among young people, as determined in this study.

f) Boredom

The feeling one gets when one loses interest in one’s current activity is referred to as boredom (Cambridge Dictionary 2019:online). Some young people smoke to relieve boredom in life (Baig *et al* 2016:4), as indicated by the 22 respondents who reported that they smoked anytime they felt bored in order to relieve boredom:

“Smoking helps me not to feel bored anymore”

“Boredom makes me smoke. I tell you”

“Whenever I feel bored to death, I quicken my mind by smoking”

These findings are consistent with those of studies conducted in Malaysia (Lim *et al* 2015:1) and Singapore (Subramaniam *et al* 2015:7), where boredom was identified as one of the reasons for smoking tobacco.

g) Boost social life

Social life is described as the time an individual spends doing enjoyable things with other people (Merriam-Webster Dictionary 2019:online). As discovered in similar studies conducted in Saudi Arabia (Baig *et al* 2016:4) and India (Bhimarasetty, Sreegiri, Gopi *et al* 2013:1), youths smoked to boost their self-confidence and facilitate social life. In this study, 23 respondents also claimed that smoking helps to boost their social life:

“The main reason I smoke is because of the level of respect that other people give to smokers. You call the shots men!”

“My self confidence level increases anytime I smoke. I need this confidence to have a good social life”

“Smoking and social life are like a set of twins. You lose one, you lose everything. Smoking for me makes social life interesting”.

h) Depression

Depression, as described in the literature, portrays a feeling of being unhappy, dejected, irritable, uninterested, and an overall lack of desire or interest in life (Anxiety and Depression Association of America (ADAA) 2019:2). In support of the findings of studies conducted in Indonesia (Dewi & Supriyati 2013:1) and Bangladesh (Hossain, Hossain, Azad-uz-zaman *et al* 2015:5), where depression was confirmed as a reason for smoking among young people, 23 respondents in this study indicated that some young people do smoke when they feel depressed:

“I like smoking to help me improve my depressed mood”

“I do smoke anytime I am feeling depressed. It helps me feel a lot better”

“Depression make me smoke just to improve my feelings”

4.4.4 Reasons for smoking anything other than tobacco products

Respondents also provided reasons for smoking non-tobacco products, which were categorised as being fun (70 responses), having a stronger effect in the body (16 responses), taste and texture (62 responses), and as a social life booster (25 responses) (see Table 4.9).

Table 4.9: Reasons for smoking anything other than tobacco

Category	Sub-category
a) Fun (70 responses)	<ul style="list-style-type: none">• <i>“I smoke other substances to experience greater fun”</i>• <i>“There is no such fun as taking crack”</i>• <i>“Great fun! Greater fun! Greatest fun all the way!”</i>
b) Stronger than tobacco (16 responses)	<ul style="list-style-type: none">• <i>“I sometimes need something stronger and crazy”</i>• <i>“Tobacco is just too ordinary”</i>• <i>“I do need something stronger than tobacco for hot parties”</i>
c) Taste and texture (62 responses)	<ul style="list-style-type: none">• <i>“They all don’t taste the same”</i>• <i>“The smoothness drives me crazy”</i>• <i>“Some of these substances taste differently”</i>
d) Social life (25 responses)	<ul style="list-style-type: none">• <i>“It makes me a big boy among friends”</i>• <i>“feel so socially active when I take other things”</i>• <i>“My social life always hits the peak”</i>

a) Fun

Rucker (2017:online) describes fun as any action that provides enjoyment. Also, according to Schauer, Hall, Berg *et al* (2016:1), young people have different reasons for smoking substances, apart from tobacco. Studies have shown that some youths' desire to experience greater fun cause them to engage in smoking substances apart from tobacco (Berg, Payne, Henriksen *et al* 2018:8). Numerous responses (70) revealed that young people smoke other substances because of their desire to have fun:

"The fun derived from smoking other substances than tobacco makes me indulge in the act"

"Ok. I don't feel the fun you get from smoking these other stuff can be measured. It is actually out of this world"

"Never under estimate the fun you catch from smoking weed. Ma you need to smoke weed to know what I'm talking about. The fun is madder than madness itself"

b) Stronger effect in the body

To corroborate the findings of Schauer *et al* (2016:8), confirming that some youths smoke other substances just to feel the greater effect in their bodies, 16 respondents opined that they smoked other substances because of the effect on their body:

"My system is so used to tobacco so I don't really feel it. Other substances are much stronger and effective nah"

"The euphoria I feel from the rush of feelings that reel my body system anytime I smoke strong substances cannot be explained"

c) Taste and texture

The different tastes and textures of tobacco products are important factors that determine its quality and the ability to make smokers crave for more (Bach 2019:online; procigar.org 2019:online). Sixty-two responses were received to indicate that young people engage in smoking substances other than tobacco because the taste and texture increase their desire to do so:

“The difference is in the taste”

“They taste differently, I swear! I love the fact that they have different tastes”

“When you smoke substances like weed or shisha, tobacco may no longer be appealing to you because of the taste. I still manage tobacco when I don’t have other substances though”

d) Social life enhancement

An individual’s social life is defined as time spent with other people doing enjoyable things (Merriam-Webster Dictionary 2019:online). Twenty-five respondents stated that engaging in smoking substances other than tobacco helped to enhance their social life:

“I am one of the biggest boys on campus now because my mates know that there’s nothing I cannot smoke”

“There is no way you won’t roll with highly social guys if you smoke different stuff. It is like your ticket to social light”

“I used to be a dull girl socially when I was smoking just cigarette. My story changed when I started smoking weed and other serious stuff. My social life went on fire just like magic. You won’t understand”

Findings from studies conducted by Schauer *et al* (2016:1-7) and Berg *et al* (2018:7) also confirmed people smoking products other than tobacco to be sociable.

4.4.5 Reasons for smoking before breakfast

As indicated in Table 4.10, respondents gave reasons for smoking before breakfast which were categorised as habit (69 responses), an inability to eat without first smoking (14 responses), addiction (79 responses), as well as the inability to defecate without smoking (15 responses).

Table 4.10: Reasons for smoking before breakfast

Category	Sub-category
a) Habit (69 responses)	<ul style="list-style-type: none"> • <i>“Old habit never die”</i> • <i>“Smoking before breakfast is the way to go”</i> • <i>“I have developed this habit and it is cool”</i>
b) Cannot eat without smoking (14 responses)	<ul style="list-style-type: none"> • <i>“I cannot eat any food without smoking”</i> • <i>“Smoking before breakfast opens up my intestine in order to receive food”</i> • <i>“I cannot put anything in my stomach without first smoking”</i>
c) Addiction (79 responses)	<ul style="list-style-type: none"> • <i>“I am addicted to smoking before breakfast”</i> • <i>“I’ve done this all my life”</i> • <i>“Simple! I’m addicted”</i>
d) Cannot defecate without smoking (15 responses)	<ul style="list-style-type: none"> • <i>“It helps me to pass waste freely every day. If not it will not come”</i> • <i>“I cannot pass excreta if I don’t smoke in the morning”</i> • <i>“I cannot defecate without smoking in the morning”</i>

a) Habit

Habit is defined as an act that is carried out on a regular basis by an individual (Cambridge Dictionary 2019:online). Numerous respondents (69) admitted that smoking first thing in the morning has become a consistent habit for them. To support this finding, Nasim Azad, Hossain and Parveen (2011:1) posited that the smoking habit is commonly seen among youths. Some of the direct statements from the respondents include:

“Smoking before breakfast is what I practice a lot because it has become more of a habit I may not be able to drop”

“I smoke before breakfast o! If I don't, my day will set off on a bad note. The habit is more like a do or die thing for me”

“Smoking first thing in the morning is a habit I developed so long ago”

b) Inability to eat without first smoking

Despite established evidence that nicotine suppresses one's appetite and affects every part of the digestive tract (Mineur, Abizaid, Rao *et al* 2011:1; Jewell 2019:online), 14 contradictory responses were received. Respondents claimed being unable to eat before having smoked:

“I cannot put any food in my stomach, as in eat any food without smoking”

“Smoking before breakfast makes me crave for food”

“Smoking makes me hungry, so I smoke to make me hungry”

The reason may well be their nicotine dependency as people who smoke very early in the morning experience greater nicotine addiction than smokers who have their first cigarette later in the day (Barclay 2011:online).

c) Addiction

Addiction does not happen in a day, but borders on the long-term failure or difficulty in stopping or moderating the consumption of a substance, chemical, activity, or drug, without minding its psychological or physical harm (Felman 2018a:online). For 79 respondents, smoking before breakfast was an addiction over which they had no control:

“I can never ever do without first smoking in the morning because it is my addiction”

“Can I ever do without first smoking in the morning? Laughs! I don’t see that happening to me because it is my addiction. I cannot do without”

When smokers start to smoke at a young age, they become addicted to tobacco and their exposure to risks of developing NCDs increases (WHO 2019a:online). Unfortunately, addictions become extremely difficult to overcome later in life, thereby accelerating the onset of chronic diseases across the life course (US Department of Health and Human Services 2012:25).

d) Inability to defecate without smoking

The connection between the ease of bowel movements and smoking has been deemed insignificant, as there is no strong evidence to link them (Jewell 2019:online). Yet some respondents reported that smoking helps ease their bowel movement:

“Wow, how do I start? Well, since you have promised me anonymity, I will let it out. I know it sounds shameful but I cannot pass excreta without first smoking”

“No matter how hard I try, I cannot pass excreta without first smoking. I know it helps me to do it easily”

Having assessed respondents’ reasons for smoking, reasons for not engaging in smoking as identified by non-smokers were also analysed and are discussed next.

4.4.6 Reasons for not smoking

When young people have knowledge about the harmful effects of smoking, they are less likely to smoke (Aslam *et al* 2014:1). Respondents provided several reasons for choosing not to smoke; 190 responses motivated their reasons for not smoking. All the responses under each of the mentioned aspects were open-coded and similar ideas were grouped together into seven specific categories which are illustrated in Table 4.11. In contrast to the information presented in Table 4.9, respondents who did not smoke, gave answers related to health issues (70 responses), smoking restrictions (29 responses), school rules (18 responses), parents’ disapproval (16 responses), religion (34 responses), and lack of interest (23 responses) as reasons for not smoking.

Table 4.11: Reasons for not smoking

Category	Sub-categories
a) Health issues (70 responses)	<ul style="list-style-type: none"> • <i>“Tobacco smoking is dangerous to health”</i> • <i>“I cannot smoke because our family doctor advised me against it”</i> • <i>“It is not healthy for the body”</i>
b) Smoking restriction (29 responses)	<ul style="list-style-type: none"> • <i>“Smoking is not allowed in my home”</i> • <i>“I stay in an environment where smoking is prohibited”</i> • <i>“If you live in my environment, you will not be allowed to smoke at all”</i>
c) School rules (18 responses)	<ul style="list-style-type: none"> • <i>“Smoking is not allowed in my school”</i>

Category	Sub-categories
	<ul style="list-style-type: none"> • <i>“I don’t smoke because I spend most time in school and smoking is not accepted”</i> • <i>“Smoking is prohibited in my own school, why would I then smoke?”</i>
d) Parents’ disapproval (16 responses)	<ul style="list-style-type: none"> • <i>“My parents do not approve of it”</i> • <i>“My father will kill me if I smoke”</i> • <i>“My parents will disown me if I try it”</i>
e) Religion (34 responses)	<ul style="list-style-type: none"> • <i>“I am a Christian, I cannot smoke”</i> • <i>“My religion does not give room for smoking”</i> • <i>“My religion does not allow it”</i>
f) Lack of interest (23 responses)	<ul style="list-style-type: none"> • <i>“I am not interested in smoking”</i> • <i>“I do not have any flair for smoking”</i> • <i>“I’m never a fan of smokers”</i>

a) Health issues

Literature evidence indicated that smokers are at greater risk of developing health issues such as cancer, cardiovascular disease, chronic lung diseases, poor circulation which can prevent the healing of stomach ulcers and causes impaired wound healing after an operation (Aleris-hamlet 2016:4). Seventy respondents revealed that they do not smoke because good health is of utmost importance to them. This is an indication that some youths know about the health risks associated with smoking (Benjamin 2012:7; Khurshid 2012:2; Brown, Palmersheim & Glysch 2008:5; Lim *et al* 2015:1), hence their reasons for not engaging in this behaviour.

“Smoking is bad for people’s health”

“There is this advert on tobacco smoking that warns that smokers are liable to dying young. I don’t want to die young. I value my health and my life”

“My parents told me that smoking can damage my internal organs and later lead to death. I will rather stay alive and healthy”

These findings are consistent with those reported by Bhimarasetty *et al* (2013:1), where 83.2% of young people knew that smoking could cause cancer, 24.8% knew of its consequences on the respiratory system, and 7% knew of its impact on the cardiovascular system.

b) Smoking restrictions

Smoking restriction is termed a deliberate order that prohibits the use of tobacco products (United States Institute of Medicine 2010:2). Twenty-nine respondents indicated that smoking restrictions at their residences stopped them from smoking:

“Our land lord stated clearly in the tenancy agreement form that smoking is prohibited. So I can’t even smoke even if I want to”

“Smoking is banned in my building where I live. In fact they will call the police for you if you disobey”

“No one is allowed to smoke in my compound. If you’re caught, you will face immediate ejection”

These findings are very similar to the findings of a Minnesota study where several young people reported that they had home smoking restrictions (Berg, Lessard, Parelkar *et al* 2011:11) and could not smoke as a result.

c) School rules

Rules are a set of guidelines or standards that govern the behaviour of an individual (Surbhi 2018:online). Literature evidence shows that rules and regulations that restrict

young learners from smoking on school premises help discourage smoking initiation (Berg *et al* 2011:3). Similarly, 18 respondents indicated that they do not smoke because their school rules do not permit smoking:

“We are not permitted to smoke in my own school”

“Smoking within the school premises isn’t permitted, my school inclusive”

“If you dare smoke in my school, you will be expelled. It’s better to remain in school than to smoke. So I can’t smoke”

d) Parents’ disapproval

Parents’ control over their children’s behaviour is an important factor in determining their health choices (Abbafati 2010:1). This is an indication that restrictions, such as parental disapproval, do motivate young people’s decisions not to smoke (Aslam *et al* 2014:1; Hrubá & Žaloudíková 2010:3). Sixteen responses were received stating parents’ disapproval as being a reason not to smoke:

“My parents will definitely disown or even kill me if I smoke”

“My parents have clear cut rules regarding smoking in my family. No child of my parents dares to smoke”

“My parents do not allow smoking. It is absolutely prohibited”

e) Religion

Religion is defined as a system of beliefs, values, and practices that borders on individual spirituality, which helps to strengthen social norms such as obeying stipulated rules (Open

Stax College 2013:357). Thirty-four respondents were of the opinion that religion helped to prevent them from smoking:

“My religion does not give room for smoking”

“Smoking is against my religious beliefs”

“Smoking is a sin. God does not want people to smoke”

This is an indication that restrictions in the form of religious disapproval do deter young people from smoking (Aslam *et al* 2014:1; Hrubá & Žaloudíková 2010:3).

f) Lack of interest

According to Abbas and Al-Asadi (2010:9), individual youths’ decision to engage in smoking is a free choice, and an indication that an individual’s interest in smoking determines whether they smoke. A number of respondents (23) submitted that their lack of interest in smoking prevented them from becoming smokers:

“Smoking disgusts me. Why will somebody decide to engage in something that could lead to serious diseases or even death?”

“Smoking? Me? Never! Smoking is not my line of interest. The smell is appalling, the effect is deadly”

4.4.7 Introduction to smoking

Smoking is a behaviour learned through the phases of ‘preparation, initiation, experimentation, habitual smoking, and addiction’ (CDC 2012:3). It mostly represents a social norm among individuals who are tagged ‘cool’, ‘sophisticated’, ‘rebellious’, or ‘fun-loving’. Unfortunately, youths act in response to this by copying such behaviour and are

therefore more likely to smoke if their friends, family members or their siblings smoke (Aslam *et al* 2014:9). Respondents provided information on how they got introduced to smoking. There were 194 responses which were open-coded, and five categories were generated: parents (31 responses), extended family members (25 responses), peers (104 responses), the media (7 responses), and personal choice (27 responses) (see Table 4.12).

Table 4.12: Introduction to smoking

Category	Sub-category
a) Parent (31 responses)	<ul style="list-style-type: none"> • <i>“My father smokes and I do too”</i> • <i>“My father”</i> • <i>“My parents used to buy me cigarettes”</i>
b) Extended family members (25 responses)	<ul style="list-style-type: none"> • <i>“My uncle”</i> • <i>“I was introduced to smoking by my uncle”</i> • <i>“My close cousin who also smokes, introduced me to smoking”</i>
c) Peers (104 responses)	<ul style="list-style-type: none"> • <i>“My friends in school”</i> • <i>“Of course my peers introduced me to smoking”</i> • <i>“My friends did”</i>
d) The media (7 responses)	<ul style="list-style-type: none"> • <i>“My mentor Lil Wayne smokes Cigar! Try to follow him on twitter. You will fall in love with him and start smoking too”</i> • <i>“I first learnt it online, then the tv”</i> • <i>“I saw the advertisement on TV and I went and bought it”</i>
e) Personal choice (27 responses)	<ul style="list-style-type: none"> • <i>“I think smoking is cool and I started just like that”</i> • <i>“Nobody”</i> • <i>“I decided to smoke on my own”</i>

a) Parents

According to Agmon, Zlotnick and Finkelstein (2015:1), parents serve as role models and mentors to their children and have a significant influence on their health behaviours. In support, some of the respondents (31 responses) indicated that they got introduced to smoking through their parents:

“My parents are both smokers, even if I don’t want to smoke, I will still be a secondary smoker. So why not just smoke”

“My dad is responsible for my smoking behaviour today”

“My dad actually made me start smoking”

b) Extended family members

Twenty-five responses were received to corroborate research stating other family members also serve as mentors to youths, and are capable of influencing their health choices (Aslam *et al* 2014:1).

“When you have crazy uncles who smoke anyhow, you go follow them join o”

“My uncle made me to start smoking”

“I first started smoking through my own cousin”

c) Peers

Peer groups refer to a group of people of the same age, who share common interests and serves as an important factor that influences behaviours and beliefs (Williams &

Levitas 2019:online). In this study, 104 respondents admitted that they got influenced and pressured by their peers and friends to engage in smoking:

“Hahahahah! My friends are all ballers; I started smoking through them”

“What your parents can’t teach you, your peers will surely do. I was introduced to smoking by my peers/friends”

“Peers make you do a lot of funny and dangerous stuff. My friends taught me how to smoke”

There is a direct link between peer influence and risky behaviours (Tomé, Gaspar de Matos, Simões *et al* 2012:1; Aslam *et al* 2014:1), as was discovered in this study.

d) Media

The concept ‘media’ means various ways of communication, such as communication through the print media, outdoor media, broadcast media and the internet (Sociology central 2011:2-3). In this study, seven respondents blamed their smoking initiation on the information communicated to them via the media:

“I just saw the advert on TV and I tried it.”

“The media exposed me to smoking. I actually saw that smoking portrays one as being big on the screen, so I started smoking”

The comments shared is indicative that tobacco companies exposing young people to advertisements via the media contributes to the promotion of early initiation and continuation of smoking among youths (US Department of Health and Human Services 2012:25; Benjamin 2012:7).

e) **Personal choice**

Personal choice refers to decisions whether to do something (Merriam-Webster Dictionary 2019:online). According to the findings of Woodgate and Busolo (2015:4-6), Muttappallymyalil, Divakaran, Thomas *et al* (2012:3) in India, as well as Subramaniam, Shahwan, Fauziana *et al* (2015:4) in Singapore, youths' personal choice to smoke was identified as a motivation for smoking. To corroborate this finding, 27 respondents indicated that they were not influenced by anyone to start smoking; it was their personal choice:

"It was a personal thing. I started smoking without anybody's influence. I am old enough to take my decisions and follow them"

"No one did, I personally decided not to start smoking"

"My decision not to smoke at all was my personal choice".

4.4.8 Age when starting to smoke (n=194)

Young adulthood is the period when individuals are most vulnerable to starting smoking because they are more enthusiastic to take risks as they become easily influenced by their peers, despite the fact that their behaviour can be detrimental to their health (O'Loughlin, Dugas, O'Loughlin *et al* 2014:1-2). As indicated in Table 4.13, 4.1% (F=8) of the respondents got initiated into smoking when they were 10 years or younger, 41.8% (F=81) started smoking between the age of 11–15 years, 49.5% (F=96) between the age of 16–20 years, while 4.6% (F=9) started smoking when they were older than 20 years. Findings from studies conducted in Indonesia (Dewi & Supriyati 2013:1), Korea (Hwang, Soon-Woo 2014:1) and India (Narain *et al* 2011:1) also confirmed that most young people try to smoke at a young age, substantiating the findings of this study.

Table 4.13: Age of first initiation to smoking (n=194)

RESPONSE	F	f =%
10 years and younger	8	4.1
11–15 years	81	41.8
16–20 years	96	49.5
Above 20years	9	4.6
Total	194	100

4.4.9 Motivation for smoking

Respondents provided 194 responses to share explanations on what motivates them to smoke. Five categories emerged after coding and grouping all responses together, namely stress (9 responses), to avert depression (39 responses), social life (33 responses), affordability (11 responses), and a feeling of 'highness' (101 responses) (see Table 4.14).

Table 4.14: Motivations for smoking

Category	Sub-category
a) Stress (9 responses)	<ul style="list-style-type: none"> • <i>"It has the ability to suppress stress"</i> • <i>"Reduces stress"</i> • <i>"Controls stress"</i>
b) Averts depression (39 responses)	<ul style="list-style-type: none"> • <i>"Smoking can reverse depression"</i> • <i>"Depression disappears at the moment of smoking"</i> • <i>"Smoking helps to heal depressed people and I am one of them"</i>
c) Social life (33 responses)	<ul style="list-style-type: none"> • <i>"I smoke to secure my social life"</i> • <i>"Smoking increases social presence"</i> • <i>"Smoking raises you up socially"</i>
d) Inexpensive (11 responses)	<ul style="list-style-type: none"> • <i>"I don't have to spend so much on the purchase"</i>

Category	Sub-category
	<ul style="list-style-type: none"> • <i>“It’s so cheap”</i> • <i>“It is absolutely affordable and easy to get”</i>
e) A feeling of ‘highness’ (101 responses)	<ul style="list-style-type: none"> • <i>“The thought of feeling so on top of the world I get from smoking”</i> • <i>“The fact that I will get so high above my worries and problems”</i> • <i>“Feeling so high gets me there”</i>

a) Stress

Stress has been described as a condition resulting in anxiety, uneasiness, and emotional tension which is perceived as threatening (Fink 2017:6). Nine responses were received that suggested smoking can help young people cope with stress:

“Smoking can actually help cope with stress”

“I’m motivated to smoke anytime I feel so stressed up”

“The first thing I do when I am stressed up is to smoke”

Although there has been a paradoxical report on the relationship between smoking and stress, Choi, Ota and Watanuki (2015:1) unfortunately posited that smoking does relieve smokers’ stress, as claimed by the nine respondents in this study.

b) Averts depression

Depression characterises a lack of motivation, sadness, discouragement, hopelessness, irritation, and a loss of interest in activities of daily living, in general (ADAA 2016:1). For 39 respondents, smoking was perceived as a great help to avert depression:

“Smoking can reverse depression”

“Depression is combated with smoking. You can’t be depressed if you smoke on regular basis”

“Smoking helps deal with depression”

According to Mendelsohn (2012:1), even though smoking can relieve symptoms of depression, it can also increase nicotine dependence.

c) Social life

Social life is described as the time an individual spends enjoying things with other people (Merriam-Webster Dictionary 2019:online), and it is of paramount interest to young people (Soininen & Merisuo-Stormb 2010:4). Some of the respondents (33) disclosed that their social life becomes more interesting and improves because of smoking:

“Smoking increases my social presence”

“Smoking really helps to improve your social life in general”

“Smoking makes me have a fabulous social life. It puts me up there far above people”

The literature confirmed that the need to boost personal social life could be a motivation for smoking (Piasecki, Richardson & Smith 2007:4). This could be as a result of low self-confidence (Berg *et al* 2018:7) among some of the respondents.

d) Affordability

Harold and Patricia (2017:2) iterated that tobacco companies are aware that young people are very price-sensitive; they therefore use low prices to attract young people to smoking. Eleven respondents stated that they were easily motivated to smoke because it is inexpensive and very affordable:

“It is so easy for me to smoke because I can afford as many sticks as possible”

“The affordability of tobacco products makes me smoke them”

“Getting cigarette is the easiest thing because it is very cheap”

e) A feeling of ‘highness’

The Oxford English Dictionary (2019:online) describes a feeling of highness as being very happy, excited, ecstatic and enthusiastic. According to Piasecki *et al* (2007:4), youths are motivated to smoke because smoking is a strategy to cope with negative emotions. The feeling of ‘highness’ it creates was also reported, as 101 responses were received about youths feeling elated when smoking:

“Feeling so high and on top of the world as a smoker”

“Smoking makes me feel so high that I forget all the negative vibes around me I swear”

“I feel very high after smoking. The feeling is cool and I love feeling this way every time”

Apart from smoking, alcohol is well known to be responsible for over 60 types of diseases and injuries (WHO 2011a). It was therefore important to assess alcohol consumption as one type of risky lifestyle practice.

4.5 ALCOHOL CONSUMPTION (N=384)

Current studies on alcohol consumption reveal that the harmful consumption of alcohol among young people is becoming a concern in many countries across the globe (Newbury *et al* 2009:6). Young people's exposure to excessive alcohol consumption leads to the development of alcohol-related chronic diseases, poor health conditions and increased mortality (Centre for Health Protection 2014:1). As indicated in Table 4.15, this study revealed that 54.7% (n=210) of the respondents were consuming alcohol. Also, in a Canadian study in 2012, 70% of Canadian youths were reported to consume alcohol (Canadian centre on substance abuse 2014:1). This suggests that younger generations may experience increased incidences of NCDs in the near future if control measures are not put in place to curb this behaviour (WHO 2014:42). More males (f=59.9%; F=122) than females (f=48.9%; F=88) in this study reported that they consume alcohol (see Table 4.15), similar to the findings of a study conducted among youths in New Zealand (Carter, Filoche & McKenzie 2017:5).

Table 4.15: Alcohol consumption (N=384)

RESPONSE	MALE (n=204)		FEMALE (n=180)		Combined sexes	
	F	f =%	F	f =%	F	f =%
Yes	122	59.9	88	48.9	210	54.7
No	82	40.1	92	51.1	174	45.3
Total	204	100	180	100	384	100

4.5.1 Alcohol consumption within the last 30days (N=210)

As established in the literature, young people’s exposure to excessive alcohol consumption leads to the development of alcohol-related health conditions including alcohol dependence and, ultimately, death (Newbury *et al* 2009:6; National institute on alcohol abuse and alcoholism (NIAAA) 2020:2-3). Table 4.16 indicated that of all (f=100%) 210 respondents who acknowledged drinking alcohol, both males and females had consumed alcohol within the past 30 days. This trend may be an indication of alcohol dependence among youths (Seaman & Ikegwonu 2010:1) with an increased risk of waning the immune system, thereby leading to over 60 types of alcohol-related diseases (Hamlet 2016:2; Thirlaway & Upton 2009:111).

Table 4.16: Consumption of alcohol within the past 30 days (N=210)

RESPONSE	MALE (n=122)		FEMALE (n=88)		Combined sexes	
	F	f =%	F	f =%	F	f =%
Yes	122	100	88	100	210	100
No	0	0	0	0	0	0
Total	122	100	88	100	210	100

4.5.2 Alcohol consumption before breakfast (N=210)

Consuming alcohol on an empty stomach allows alcohol to make direct contact with the intestinal walls, causing easy and quick absorption of the alcohol content into the bloodstream, thereby increasing its effect on the body (Cirino 2019:online). Evidence suggests that when alcohol gets into the human system, it becomes transformed into a poisonous chemical known as acetaldehyde, which causes cancer by destroying DNA. It also prevents the body cells from repairing and replacing damaged ones (Herbst 2017:4; Anderson & Moller 2012:5). Figure 4.1 shows that 93.3% (N=210; F=196) of the respondents admitted to drinking alcohol before breakfast within the past 30 days before

data collection. All (n=122; F=122) the males and 84.1% (n=88; F=74) of the female respondents had consumed alcohol before breakfast in the last 30 days (see Figure 4.1).

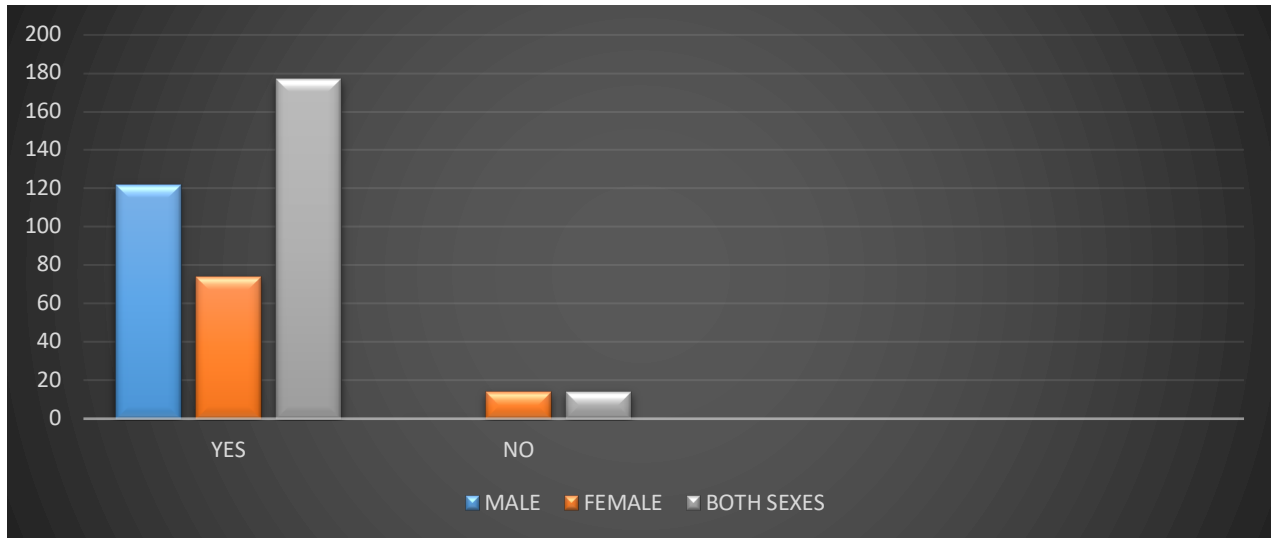


Figure 4.1: Alcohol consumption before breakfast (N=210)

These findings contrast sharply with those of an American study where the prevalence of alcohol consumption before breakfast was 38.3%; with women drinking before breakfast more frequently than men (Eisenberg & Fitz 2014:1). Moreover, studies confirmed that the risk of developing an NCD is higher among people who consume alcohol on empty stomachs than those who do not drink on empty stomachs (Educalcool 2019:6).

4.5.3 Reasons for consuming alcohol

Respondents (N=210) provided several reasons for consuming alcohol before breakfast. After open coding, the categories related to reduced anxiety (19 responses), appetite (6 responses), stress (15 responses), curiosity (12 responses), boredom (4 responses), depression (26 responses), addiction (87 responses), and peer pressure (49 responses) (see Table 4.17).

Table 4.17: Reasons for consuming alcohol

Category	Sub-category
a) Reduces anxiety (11 responses)	<ul style="list-style-type: none"> • <i>“Too much of anxiety pushed me to drinking alcohol”</i> • <i>“I am always anxious about everything. So I started drinking because of that”</i> • <i>“All my worries disappear anytime I drink, so I love drinking”</i>
b) Appetite (6 responses)	<ul style="list-style-type: none"> • <i>“I don’t always have good appetite for food. Alcohol help me get hungry”</i> • <i>“Since my appetite for good food is low, I prefer to fill my tummy with alcohol in order to make me go hungry for food”</i> • <i>“I don’t really eat like that. I prefer to drink so as to eat”</i>
c) Stress (7 responses)	<ul style="list-style-type: none"> • <i>“Stress is the major reason why I drink”</i> • <i>“I drink alcohol because of stress”</i> • <i>“I stress too much and I drink to help myself”</i>
d) Curiosity (12 responses)	<ul style="list-style-type: none"> • <i>“Curiosity made me drink alcohol”</i> • <i>“I consumed alcohol because I was curious”</i> • <i>“Curiosity”</i>
e) Boredom (4 responses)	<ul style="list-style-type: none"> • <i>“Boredom kills, so I drink because I don’t want to die”</i> • <i>“Reason for consuming alcohol is boredom”</i> • <i>“Boredom is the reason”</i>
f) Depression (26 responses)	<ul style="list-style-type: none"> • <i>“Depression and seclusion makes me drink alcohol”</i> • <i>“I don’t want to remain depress always, Consumption of alcohol help me”</i> • <i>“Depression is real”</i>
g) Addiction (87 responses)	<ul style="list-style-type: none"> • <i>“I’m so much addicted to alcohol”</i> • <i>“I will die if I don’t consume alcohol”</i> • <i>“I drink to sustain my life. I am addicted! ”</i>

h) Peer pressure (49 responses)	<ul style="list-style-type: none"> • “My friends” • “My peers” • “All my friends drink, why won’t I drink too?”
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a) Reduces anxiety

Felman (2018b:online) defines ‘anxiety’ as a feeling of tension and worry. According to Chellingsworth, Farrand and Rayson (2013:5), worrying is a state of feeling trapped, physically tense or anxious, which can affect a person’s ability to function daily. Nineteen responses were received to motivate that alcohol consumption helps to reduce anxiety:

“Drinking alcohol helps to ease worries instantly and reduces anxiety”

“Alcohol helps me to forget about my personal worries”

“My anxiety level is very high but alcohol helps me to bring it down”

Young people have been found to engage in alcohol consumption because they feel it eases their worries (Ramlan, Arshad & Omar 2015:4). A study by Carter *et al* (2017:3) also confirmed that one of the reasons young people offered for their alcohol consumption included anxiety, as was also found in this study.

b) Appetite

Appetite is a significant element in maintaining required food intake by the body (Andreae 2018:1). Six respondents maintained that alcohol consumption helps to improve their appetite:

“I love consuming alcohol because it helps to wet my appetite”

“I drink alcohol to boost my appetite”

“Anytime I experience low appetite, what I do is drink alcohol and my appetite for food will increase greatly”

A similar result was obtained by Gonçalves dos Reis and Marques de Oliveirall (2015:5), where low appetite was mentioned among the reasons young people consume alcohol.

c) Stress

Stress has been described as a condition resulting in anxiety, uneasiness, and emotional tension which is perceived as threatening (Fink 2017:6). Interestingly, alcohol consumption has been documented to help in stress reduction (Ramlan *et al* 2015:4). In this study, 15 respondents shared that they felt alcohol is a good stress suppressant:

“I actually consume alcohol whenever I feel stressed and it actually helps me to suppress the stress”

“I get stressed out easily and the best bet is to drink alcohol in order to feel better”

d) Curiosity

Curiosity is defined as an eagerness to learn about something (The Cambridge Dictionary 2019:online). Moreover, it is an indicator of youth’s vulnerability and motivation to consume alcohol (Carter *et al* 2017:3). Twelve respondents indicated that curiosity motivated them to engage in alcohol consumption:

“We all get curious at one point or the other in our lives. Curiosity made me start drinking”

“Curiosity made me start drinking alcohol”

“Well, I was very curious to know and I did try it”

e) Boredom

The feeling of losing interest in a specific activity is referred to as boredom (Cambridge Dictionary 2019:online). Young people consume alcohol in order to relieve boredom (Carter *et al* 2017:3; Ramlan *et al* 2015:5). Four of the respondents stated that boredom caused their drinking:

“The cure for boredom is ALCOHOL!”

“I drink alcohol anytime I get bored because it helps me to feel better emotionally”

f) Depression

Depression, as explained earlier, includes feeling unhappy, dejected, irritable, uninterested, and experiencing an overall disinterest in life (ADAA 2019:2). It has been established as one of the factors promoting alcohol consumption among young people (Carter *et al* 2017:3; Ramlan *et al* 2015:5). For 26 respondents, depression caused them to start drinking:

“I cannot allow depression lead me to committing suicide, alcohol saving lives”

“To be sincere, depression was responsible for my initiation into drinking. I was so depressed to the point of killing myself. My friend who drinks was the angel God used for me. She introduced me to alcohol and I now feel better anytime I am depressed and I drink”

g) Addiction

Addiction is defined as long-term failure or difficulty in stopping or moderating the consumption of a substance, chemical, activity, or drug, without minding its psychological or physical harm (Felman 2018:online). Despite the health risks associated with alcohol consumption (WHO 2018:3), some young people cannot stop drinking. Eighty-seven respondents reported that they believed they were addicted to alcohol:

“I cannot deny being addicted to alcohol”

“I think I drink every time because I am an alcohol addict, I will die if I don’t put alcohol in my system”

To support the findings of this study, Carter *et al* (2017:3), as well as Ramlan *et al* (2015:5) also established that alcohol addiction is contributory to constant alcohol consumption among young people.

h) Peer pressure

Peer pressure denotes the insistence or compulsion to behave or have things done in the same manner as one’s cohort in order to gain their respect or love (Merriam-Webster Dictionary 2019:online). Peers are capable of influencing others, reflecting the direct link between peer influence and risky behaviours (Tomé *et al* 2012:1; Aslam *et al* 2014:1). According to Ivaniushina, Titkova and Alexandrov (2019:1), peer pressure triggers alcohol consumption in young people who have a tendency to make friends with people of similar lifestyles. There were 49 respondents who admitted that they started drinking as a result of peer pressure:

“All my friends drink, why won’t I drink too when they will not let be rest until I joined them?”

“Peer pressure pushed me into drinking”

“I joined my friends to start drinking”

4.5.4 Reasons for consuming alcohol before breakfast

The categories that emerged based on respondents’ feedback for their reasons for drinking alcohol before breakfast were: addiction (77 responses), enhances appetite (56 responses), habit (38 responses), and depression (39 responses) (see Table 4.18).

Table 4.18: Reasons for consuming alcohol before breakfast

Category	Sub-category
a) Addiction (77 responses)	<ul style="list-style-type: none"> • <i>“I am addicted to drinking before breakfast”</i> • <i>“Addiction”</i> • <i>“I can’t even imagine not drinking before breakfast”</i>
b) Enhances appetite (56 responses)	<ul style="list-style-type: none"> • <i>“I eat better when I drink before breakfast”</i> • <i>“There is this bad hunger that follows early morning alcohol consumption. That is why I always drink alcohol before breakfast”</i> • <i>“I can’t eat without drinking every morning/ even if it is small quantity”</i> • <i>“Consuming alcohol before breakfast help to improve your appetite for heavy food”</i>
c) Habit (38 responses)	<ul style="list-style-type: none"> • <i>“I’m used to my early morning habit”</i> • <i>“It is a bad habit I cannot give up”</i> • <i>“Drinking alcohol before breakfast is a part of me”</i>
d) Depression (39 responses)	<ul style="list-style-type: none"> • <i>“I’m so depressed about my low CGPA”</i> • <i>“Life is a complex place to be. I am wallowing in depression. Alcohol is my consolation. It is my first daily assignment”</i> • <i>“Depressed and tired of life”</i>

a) Addiction

Alcohol addiction is defined as a maladaptive form of alcohol consumption, such as drinking before breakfast (Gonçalves dos Reis & Marques de Oliveirall 2015:5) which leads to major medical issues or distress (Optima Global Health 2014:2). Its consequences are grave as it poses social, economic and healthcare problems (Michalak & Biala 2015:1). It is of concern that respondents (77 responses) admitted that their major reasons for consuming alcohol before breakfast was addiction:

“I am addicted to alcohol consumption”

“I will die if I don’t consume alcohol before breakfast. Do you know what it feels like to be addicted?”

b) Enhances appetite

Appetite is described as the desire to consume food (Das & Roy 2017:1). Surprisingly, alcohol can enhance appetite (Caton, Nolan & Hetherington 2015:1; Lloyd-Richardson, Lucero, Dibello *et al* 2009:3) as mentioned in this study, and can thus motivate youth to drink before breakfast. Fifty-six respondents in this study shared that alcohol consumption stimulated their appetite:

“I eat more food when I drink enough alcohol before breakfast”

“Consuming alcohol before breakfast helps me to eat well in the morning”

c) Habit

Habit denotes a behaviour performed on a regular basis (Cambridge Dictionary 2019:online). It has been deemed to be a contributor to young people drinking alcohol before breakfast (Adekeye, Adeusi, Chenube *et al* 2015:4; Gonçalves dos Reis &

Marques de Oliveirall 2015:5). In support, 38 responses were received stating that some respondents developed a habit of consuming alcohol before breakfast:

“Drinking in the morning before any meal is one habit I cannot drop. I am so used to it”

“Hmmm! Drinking before eating in the morning is a habit I developed a while ago”

d) Depression

Depression has a strong connection to alcohol dependence as depressed individuals are more likely to become dependent on alcohol (Alcoholrehabguide.org 2019:online). Some of the respondents (39 responses) stated that they were depressed and found solace in drinking alcohol:

“I am not a particularly happy child. Depression make me drink even before breakfast”

“Depression is the root of all bad things. So I guess it also makes me drink alcohol first thing after waking up”

4.5.5 Reasons for not consuming alcohol

Individuals' ability to carry out an action is dependent on strong intentions to perform the action and how convinced they are about what others think about such actions (Hasbullah, Mahajar & Salleh 2014:1; Bhattacharjee 2012:31). Respondents who did not consume alcohol provided their reasons for not drinking. There were 174 responses which were open-coded and grouped into six categories, namely health (90 responses), violence (16 responses), school rules (10 responses), parents' disapproval (15 responses), religion (27 responses), and lack of interest (16 responses) (see Table 4.19).

Table 4.19: Reasons for not consuming alcohol

Category	Sub-category
a) Healthy (90 responses)	<ul style="list-style-type: none"> • <i>“Consuming alcohol is not good for the health”</i> • <i>“Alcohol can damage the internal organs e.g. liver damage”</i> • <i>“Alcohol consumption is highly risky to people’s health”</i> • <i>“It is part of the dos and don’ts that our family doctor gave us to prevent addiction”</i>
b) Violence (16 responses)	<ul style="list-style-type: none"> • <i>“We are not allowed to consume alcohol in my environment because drunk people cause chaos up and down”</i> • <i>“Alcohol is prohibited in my environment to prevent violence of any kind”</i> • <i>“People are not allowed to enter my area with bottles of alcohol because they can become violent and fight with bottles.”</i>
c) School rules (10 responses)	<ul style="list-style-type: none"> • <i>“You cannot consume alcohol in my school.”</i> • <i>“Students get punished if caught with any quantity of alcohol in my school.”</i> • <i>“My school is alcohol free school.”</i>
d) Parents’ disapproval (15 responses)	<ul style="list-style-type: none"> • <i>“My parents frown at alcohol consumption.”</i> • <i>“My parents never approved alcohol in my family.”</i> • <i>“My parents gave a standing order against alcohol consumption, else you will be disowned.”</i>
e) Religion (27 responses)	<ul style="list-style-type: none"> • <i>“Consumption of alcohol is a sin against God.”</i> • <i>“My religious practice does not allow me to drink alcohol.”</i> • <i>“My religion is against alcohol consumption.”</i>
f) Lack of interest (16 responses)	<ul style="list-style-type: none"> • <i>“I am not interested in getting involved.”</i> • <i>“I don’t like the smell of alcohol. So I cannot take it.”</i> • <i>“My interest is not just there.”</i>

a) Health

It is not healthy to consume alcohol (Eze, Njoku, Eseadi *et al* 2017:3). Excessive alcohol consumption can cause up to 60 health conditions (Lange *et al* 2017:1; WHO 2011a). Respondents (90 responses) confirmed that they did not drink because of the health hazards attached to alcohol consumption.

“Drinking is not healthy and it is injurious to people’s health”

“Our family doctor has warned me against taking alcohol because of my brother’s health history”

This finding indicated that some youths are well informed and aware of the health risks of alcohol consumption (Eze *et al* 2017:4), hence their abstinence from it.

b) Violence

Violence denotes the deliberate use of physical force against other people or oneself, which could lead to injury, deprivation, psychological impairment or even death (WHO 2019b:online). The connection between alcohol consumption and violence is well documented (Keila do Carmo, Maria Luiza de Oliveira & Márcia de Assuncao 2015:4; Gonçalves dos Reis & Marques de Oliveirall 2015:5); and 16 respondents in this study indicated that they did not drink due to the risk of violence:

“Personally, I can’t drink alcohol because of the way it gingers violence and promotes irrational actions”

“I feel people who drink alcohol get angry easily and lose their cool. They also get edgy and start up violence without thinking”

c) School rules

Rules are sets of guidelines or standards that govern the behaviour of an individual (Surbhi 2018:online). Strict school rules that prohibit alcohol consumption have been found to help prevent alcohol consumption among young people (Evans-Whipp, Plenty, Catalano *et al* 2013:5). Ten responses were received to indicate that some respondents did not drink alcohol because it is prohibited in their schools:

“Alcohol consumption is banned in my own school”

“No one can even attempt to drink in my school, you will be expelled”

d) Parents’ disapproval

Parental disapproval has been identified as one of the reasons some young people do not drink alcohol (Jander, Mercken, Crutzen *et al* 2013:1; Mrug & McCay 2013:1). Fifteen respondents stated that their parents served as deterrents to their engagement in alcohol consumption:

“My parents disapprove of drinking alcohol”

“My parents cannot stand the sight of alcohol. You cannot drink in my house”

e) Religion

Religion is defined as a system of beliefs, values, and practices that borders on individual spirituality, which helps to strengthen social norms such as obeying laid down rules (Open Stax College 2013:357). Religiosity is an important aspect that prevents alcohol use among young people (Baena, Meneses, Caperos *et al* 2018:1; Thompson 2017:1), as indicated by the 27 responses received in this study to that effect:

“My religion does not support alcohol consumption”

“As a good Christian, it is against my religion to engage in alcohol consumption”

f) Lack of personal interest

Choosing not to consume alcohol is deemed a very positive decision among young people (Herring, Bayley & Hurcombe 2012:online). Sixteen respondents indicated that they did not consume alcohol because they lacked the interest to do so:

“I personally do not have the interest in drinking”

“I am not a fan of alcohol because of the negative effects it has on the individual”

“I have no business with drinking, my line of interest is off the radar”

“I have no interest whatsoever in drinking or consuming alcohol”

This is an indication that the decision of individual youths to engage in risky lifestyle practices is a free choice (Al-Asadi 2010:9) based, among other reasons, on the knowledge they have about alcohol-related health conditions that have increased over the years (Andréasson, Chikritzhs, Dangardt *et al* 2014:3).

4.5.6 Introduction to alcohol

Health outcomes for youths are embedded in their social environments as young people’s behaviours are influenced at the individual, peer, family, school, community, and societal levels (CDC 2014:1; Sixty-fourth World Health Assembly 2011:1; Loke & Mak 2013:1; Horizon Scanning Programme Team 2014:1). Respondents also provided information on how they got introduced to drinking. As illustrated in Table 4.20, the five categories that emanated from 210 responses were: peers (91 responses), parents (39 responses),

extended family members (16 responses), the media (23 responses), and personal choice (40 responses).

Table 4.20: Introduction to drinking

Category	Sub-category
a) Parent (39 responses)	<ul style="list-style-type: none"> • <i>“My father introduced me to drinking”</i> • <i>“My dad”</i> • <i>“I drink at home with my parents”</i>
b) Extended family members (16 responses)	<ul style="list-style-type: none"> • <i>“My big brothers”</i> • <i>“I was introduced to drinking by my big brother”</i> • <i>“My cousin from my mum’s side”</i>
c) Peers (91 responses)	<ul style="list-style-type: none"> • <i>“My close friends”</i> • <i>“My peers introduced me to drinking alcohol”</i> • <i>“My pals”</i>
d) The media (23 responses)	<ul style="list-style-type: none"> • <i>“The television”</i> • <i>“Internet”</i> • <i>“I first saw the advertisement on TV and I tried it”</i>
e) Personal choice (40 responses)	<ul style="list-style-type: none"> • <i>“Myself”</i> • <i>“Nobody”</i> • <i>“Personal decision”</i>

a) Peers

Peers’ influence has a direct link to risky behaviours (Tomé *et al* 2012:1; Aslam *et al* 2014:1). Responses (91) were received mentioning that peers influenced youths’ decisions to drink alcohol:

“I started drinking through my friends. Call it peer pressure if you want. We all learn some stuff from friends you know?”

“Show me your friend and I will tell you who you are. My friends drink and I drink. Simple!”

Studies conducted in Estonia (Ruutel, Sisask, Varnik *et al* 2014:1) and Kenya (Enock, Wanjiru, Mugai *et al* 2013:7) also confirmed this finding.

b) Parents

According to Agmon *et al* (2015:1), parents serve as role models and mentors to their children and children’s health behaviours. Parents who expose children to alcohol increase their likelihood to consume alcohol (Yen-Tyng, Cooper, Windle *et al* 2016:1; Ruutel *et al* 2014:1). Thirty-nine respondents mentioned that their parents were responsible for their initiation into drinking alcohol:

“My parents both consume alcohol, so they allowed me to join them when I was 15 years old”

“My dad sees nothing wrong in drinking. He gave me the go ahead to start taking alcohol when I finished secondary school”

c) Extended family members

According to Aslam *et al* (2014:1), family members also serve as mentors to young people and are capable of influencing their health choices. Sixteen respondents mentioned that some of their extended family members were responsible for their initiation into drinking alcohol:

“I started drinking when I visited my uncle in Lagos and it continued till now”

“My cousins in the city made sure I started drinking with them when I visited them during Christmas break”

d) Media

Advertisements of alcoholic products via the media is a contributory factor to alcohol consumption among young people (Atkinson, Elliott, Bellis *et al* 2011:6). For 23 respondents, the media significantly influenced their decision to start drinking:

“Well, we kids learn a lot than you can imagine from the media”

“Some adverts can be so captivating that you dare not resist the product. I started drinking after seeing a very interesting advert of beer on the television”

e) Personal choice

Youth engage in risky lifestyle practices by their own personal choice (Al-Asadi 2010:9). Forty responses were received that respondents made personal decisions to start drinking:

“No one introduced me to drinking. I started on my own”

“The decision to start drinking was personal”

4.5.7 Age when starting to drink (n=210)

Young people who start drinking alcohol in their early teen years are more likely to become reliant on alcohol within 10 years compared to those who begin drinking in their late teen years and early 20s (WHO 2014:1; WHO 2008:3; Awosan *et al* 2014:3; CDC 2014:1). This study indicated that 6.2% (F=13) of the respondents got initiated into drinking when they were younger than 10 years old, thus they were more likely going to become reliant on alcohol within 10 years (WHO 2014:1). Moreover, 34.8%; (F=73) started drinking between the age of 11–15 years, 51.4% (F=108) started drinking when they were between the age of 16–20 years, while 7.6% (F=16) of respondents started

drinking after the age of 20 years (see Table 4.21). This is an indication that most respondents were already initiated into drinking alcohol at a young age. A study in Brazil (Gonçalves dos Reis & Marques de Oliveirall 2015:5) revealed that 52.4% of their respondents were initiated into alcohol consumption between the ages of 10–13 years, 39.8% got initiated between 14–17 years, while 7.8% got initiated when they were younger than 10 years old; very similar to what was revealed in this study's context.

Table 4.21: Age when starting to drink (n=210)

RESPONSE	F	f =%
10 years and younger	13	6.2
11–15 years	73	34.8
16–20 years	108	51.4
Above 20years	16	7.6
Total	210	100

4.5.8 Daily alcohol intake (n=210)

Harmful or excessive consumption of alcohol among young people is becoming a challenge in many countries (Newbury *et al* 2009:6) and leads to the development of alcohol-related chronic diseases, poor health conditions, and increased mortality (Centre for Health Protection 2014:1). As indicated in Table 4.22, 35.2% (F=77) of the respondents admitted to drinking one bottle of alcohol daily, 24.4% (F=51) consumed two to three bottles of alcohol daily, 18.2% (F=38) consumed four to five bottles of alcohol daily, while 22.4% (F=47) consumed six bottles or more on a daily basis. These findings are close to those of a Canadian study (Canadian Center on Substance Abuse 2018:2) where 30% of youths reported consuming five or more drinks on a daily basis. The majority (f=79.6%; F=70) of female respondents consumed more than six units of alcohol per day, while 52.5% (F=42) of male respondents consumed more than eight units of alcohol per day.

Table 4.22: Number of standard bottles of alcohol consumed daily (N=210)

Number of bottles	MALE (n=122)		FEMALE (n=88)		Combined sexes	
	F	f =%	F	f =%	F	f =%
1	58	47.5	18	20.4	74	35.2
2-3	18	14.8	32	36.3	51	24.3
4-5	27	22.1	11	12.6	38	18.1
6+	19	15.6	27	30.7	47	22.4
Total	122	100	88	100	210	100

The study findings revealed harmful alcohol consumption among youth. Women reportedly drank more than six units of alcohol a day, 35 units a week, and men drank more than eight units a day or over 50 units a week, illustrating harmful drinking habits as described by various authors (WHO 2014:11; Onongha 2012:4). There is a need for urgent public health preventive intervention in schools, as the harmful use of alcohol poses a challenge to the future of youths' health (Adekeye *et al* 2015:1; Onongha 2012:4).

4.5.9 Motivations for drinking alcohol

Respondents provided information on what motivates them to consume alcohol. There were 209 responses to inform what motivates alcohol consumption. The categories that emerged from open-coded responses were: digestion enhancement (9 responses), distraction from personal problems (45 responses), mood improvement (25 responses), burns fat (13 responses), and fun (117 responses) (see Table 4.23).

Table 4.23: Motivations for drinking alcohol

Category	Sub-categories
a) Enhances digestion (9 responses)	<ul style="list-style-type: none"> • "Alcohol aids digestion" • "Alcohol promotes digestion" • "Your food digests easily after consuming alcohol"

<p>b) Distraction from personal problems (45 responses)</p>	<ul style="list-style-type: none"> • <i>“Alcohol helps to blur the ugly reality”</i> • <i>“When you drink, you become less concerned with your personal problems”</i> • <i>“Alcohol can make you forget your problems while you smile your life away”</i>
<p>c) Improves mood (25 responses)</p>	<ul style="list-style-type: none"> • <i>“There is no dull moment with alcohol”</i> • <i>“My mood improves immediately after consuming alcohol”</i> • <i>“Alcohol makes your mood better”</i>
<p>d) Burns fat (13 responses)</p>	<ul style="list-style-type: none"> • <i>“Alcohol burns fat easily”</i> • <i>“It helps with shedding excess weight”</i> • <i>“Alcohol consumption, especially the one with high content like brandy and whisky keeps your body trim and proper”</i>
<p>e) Fun (117 responses)</p>	<ul style="list-style-type: none"> • <i>“I catch more fun whenever I drink alcohol”</i> • <i>“Alcohol time! Fun time!”</i> • <i>“Fun and alcohol go together”</i>

a) Digestion enhancement

Some responses (9) were received that alcohol serves as digestion enhancement:

“If you want the food you ate to digest easily, try and drink alcohol and you will thank me later”

“Alcohol aid digestion of food and makes you go hungry easily”

Literature evidence, however, contradicts this misunderstanding as alcohol obstructs the natural digestion process (Buddy 2019:online).

b) Distraction from personal problems

A problem is described as a situation that is disappointing and causing difficulties (Collins Dictionary 2019:online). Young people are motivated to consume alcohol because it distracts them from their personal problems (Comasco, Berglund, Oreland *et al* 2010:6). Forty-five respondents indicated that they drank alcohol in order to get distracted from their personal problems:

“This world is full of uncertainties. You win some and you lose some. Alcohol makes me forget my problems and see less of the reality especially when I lose and I’m lost”

“When I drink, my mood becomes lightened and brightened. I get to forget all my problems. This is better than being gloomy I suppose?”

c) Mood improvement

Mood is defined as an emotional state of mind with no focus or direction (Lischetzke 2014:1), and mood improvement has been identified as a motivation for drinking alcohol (Martin, Inchley & Currie 2019:2; Bremner, Burnett, Nunney *et al* 2011:27). Some respondents (25 responses) were of the opinion that alcohol consumption helps to improve their moods:

“I drink to get out of my moody feelings”

“Mood sometimes can be low and you feel so down. Alcohol helps me to feel a lot better”

Despite this finding, there have been no clear evidence that alcohol improves mood, although alcohol is confirmed to have a direct impact on the central nervous system (Sayette 2017:1).

d) Burns fat

Despite evidence linking alcohol consumption to weight gain (Traversy & Chaput 2015:1), some young people still believed that moderate drinking (i.e. one or two drinks a day) could help to burn body fat (Picincu, 2019:online). This view was reported by 13 respondents in this study:

“Strong but moderate alcohol consumption can help you trim down your weight, improve your cardio function and keep in shape”

“Alcohol help with the excess, flabby body fat by burning it off. It is actually a way of keeping fit and healthy”

This indicated a misconception among young people. Alcohol has been confirmed to cause far more deaths and disability than weight loss (Andréasson *et al* 2014:3) because the energy content in 1 gram of alcohol is equivalent to 29 kJ or 7.1 kcal, which is excessive (Sayon-Orea, Martinez-Gonzalez & Bes-Rastrollo 2011:1; Livelighter 2020:online). Consuming products with very high energy has been found to be detrimental to health, as it leads to unhealthy body weight (British Nutrition Foundation 2020:online).

e) Fun

Fun is described as a source of satisfaction, pleasure, enjoyment or merriment (Thesaurus.com 2019:online). The desire to have fun is a motivation for drinking alcohol (Keila do Carmo, Maria Luiza de Oliveira & Márcia de Assuncao 2015:4), as mentioned by respondents (117 responses) in this study:

“I always have mad fun anytime I consume alcohol. You know that feeling you have when tipsy? Lol”

“I drink for the fun of it”

These findings are detrimental to youths’ health and of concern as they are contributory to the development of NCDs, especially in the organs which come into direct contact with alcohol (EU 2017:1; WHO 2014:11).

It was therefore important to assess youths’ dietary patterns to determine if their diet contained the prescribed daily required nutrients and calories that are important and needed to successfully prevent diseases in the human body.

4.6 DIETARY PATTERNS

Respondents provided information on the types of takeaway foods they consumed. There were 301 responses which were open-coded, grouped together and categorised as pasta (35 responses), rice (49 responses), fries (53 responses), ice cream (52 responses), and pastries (122 responses) (see Table 4.24).

Table 4.24: Type of takeaway food consumed

Category	Sub-category
a) Pasta (35 responses)	<ul style="list-style-type: none"> • <i>“I love pasta”</i> • <i>“Pasta always”</i> • <i>“Pasta”</i>
b) Rice (49 responses)	<ul style="list-style-type: none"> • <i>“Rice”</i> • <i>“Rice all the way”</i>
c) Fries (53 responses)	<ul style="list-style-type: none"> • <i>“Fried foods”</i> • <i>“Fried yam”</i> • <i>“Fried sweet potato”</i>
d) Ice cream (52 responses)	<ul style="list-style-type: none"> • <i>“Ice cream”</i> • <i>“Ice cream with caramel shake”</i> • <i>“Oh I love to take chocolate ice cream”</i>
e) Pastries (122 responses)	<ul style="list-style-type: none"> • <i>“Pastries”</i> • <i>“Any type of pastry”</i>

a) Pasta

Pasta is made by mixing water, flour, and sometimes eggs (Merriam-Webster Dictionary 2019:online) and is a good source of carbohydrates (Guelinckx, Iglesia, Bottin *et al* 2015:4). Research has found that most young people consume pasta on a regular basis (Olatona, Onabanjo, Ugbaja *et al* 2018:6), and 35 respondents indicated that they consume pasta as takeaways:

“I love to eat pasta”

“If it is not pasta, then it is not satisfying”

“Can I ever do without buying pasta?”

b) Rice

Rice is an indispensable food which serves as an important cereal crop (Rohman, Helmiyati, Hapsari *et al* 2014:1) and is consumed as takeaway food by young people (Narayan & Prabhu 2015:2; Otaibi & Kamel 2017:5). However, its consumption is connected to the development of diabetes mellitus as a result of its very high fat content (Rohman *et al* 2014:1). Forty-nine respondents indicated that they consume rice as takeaway food:

“I buy rice made in different forms anytime I don’t cook”

“Rice is the best cook food you can easily grab as take away”

c) Fries

Fries are mostly prepared by deep frying potatoes, which increases its fat content through the absorption of oil and fat into the food (Parikh & Nelson 2013:1). According to Van Zyl,

Steyn and Marais (2010:1), young people often consume fries as takeaway food, as specified by 53 respondents in this study.

“I am so used to buying fries. Maybe because I love eating them”

“Fries are my best options”

d) Ice cream

Ice cream is described as a sweetened dairy product, prepared by mixing eggs, milk fat, milk solids, colourant, sweetened products, flavour and stabilisers, which are then frozen and ready for consumption (Deosarkar, Khedkar, Kalyankar *et al* 2016:2). Olatona *et al* (2018:6) found a regular pattern of ice cream being bought as takeaway among young people. There were 52 responses to indicate that some respondents buy ice cream as takeaway food:

“All I get as take away is ice cream”

“I usually buy ice cream as take away anytime I visit the eatery”

e) Pastries

Pastry is described as food prepared by mixing flour, water and fat together into a paste (Baking Industry Research Trust (BIRT) 2010:1), which is consumed by young people as takeaway food on a regular basis (Sabharwal 2017:4). Respondents (122 responses) also admitted to buying pastries as takeaway food on a regular basis:

“Pastry is the fastest to get. I usually don’t have time”

“I enjoy pastries the most so I get them anytime I want takeaway”

Pertaining to the frequency of respondents eating takeaways, Table 4.24 reveals that 35.4% (N=384, n=136) of respondents ate takeaways every day, 23.7% (n=91) ate it on a weekly basis, 9.4% (n=36) ate it on a monthly basis, while 31.5% (n=121) never ate takeaway foods. This study also revealed the frequency of consuming pastries and sweetened cold drinks among respondents, and reported 40.1% (n=154) of respondents ate pastries on a daily basis, only 28.6% (n=110) never include pastries in their diet, while 46.9% (n=180) drank sweetened cold drinks daily (see Table 4.25).

Table 4.25: Dietary patterns (N=384)

Frequency of consuming	Daily		Weekly		Monthly		Never	
	n	f =%	n	f =%	n	f =%	n	f =%
Takeaways	136	35.4	91	23.7	36	9.4	121	31.5
Pastries	154	40.1	86	22.4	34	8.9	110	28.6
Sweetened cold drinks	180	46.9	80	20.8	83	21.6	41	10.7
Water	236	61.5	36	9.4	96	25.0	16	4.2
Fruits	108	28.1	80	20.8	78	20.3	118	30.7
Vegetables	80	20.8	128	33.3	126	32.8	50	13.0

Despite the importance of nutrition as a requirement for a healthy life (Dayana, Mohan & Dhanalekshmy 2019:1), these findings may indicate that the fast-food culture among the younger generation is gaining more ground (Dayana *et al* 2019:1). This, in turn, exposes youths to health hazards attached to the consumption of high-calorie foods. Sadly, measures to control the consumption of these high-calorie foods are not as effective as required (Ashakiran & Deepthi 2012:1), hence the need for continuous health intervention programmes for youths, especially in schools (Ashakiran & Deepthi 2012:6).

Water is an indispensable nutrient that keeps the body working at its best and is the means by which fluid and electrolyte homeostasis is sustained in the human body (Barry, D’Anci & Rosenberg 2010:1). The human body is made up of 70% water, and it uses this water as daily activities are carried out. It is therefore critical to stay hydrated and consume the daily recommended volume of water rich in minerals to keep the body

healthy (Santevia 2015:online). As indicated in Table 4.25, 61.5% of respondents consumed water on a daily basis. Very similar findings were also recorded by Guelinckx, Iglesia, Bottin *et al* (2015:4).

Fruits and vegetables are regarded as essential sources of micronutrients and fibre, which have the potency to neutralise foods high in fat, salt and sugar (WHO 2014:9; Slavin & Lloy 2012:1). Despite the fact that regular consumption of a diet rich in fruit is recommended for young people's health because it helps reduce the risk of NCDs (WHO 2014:7; WHO 2020:online), this study revealed that only 28.1% (n=108) of respondents consumed fruits on a regular basis, 30.7% (n=118) never ate fruits, while 20.8% (n=80) consumed vegetables on a regular basis (see Table 4.25). This pattern of low fruit consumption appears to be a trend among young people as a similar study conducted by Shokrvash, Majlessi, Montazeri *et al* (2013:1) also revealed that only 30.3% of young people had the optimal daily consumption of fruits, and only 34.6% had the optimal daily consumption of vegetables.

Despite the daily recommendation food pyramid, these findings are of great concern as these dietary patterns of respondents may indicate a deviation from the daily consumption of foods in accurate portions (Irish Heart Foundation & National Youth Council of Ireland 2010:39; Hamlet 2016:2). This trend could also pose a serious danger to youths' health as low fruit and vegetable intake are primary risk factors for NCDs (WHO 2014:7). There is therefore an urgent need to make youths focus on the aspects that contribute to healthy dietary parameters and a change in dietary preference in order to help reverse or moderate the disease burden associated with increased risk for developing NCDs (Allen 2012:3). Approximately 2.7 million deaths can be averted annually should people cultivate the habit of regular and adequate fruit and vegetable intake (WHO 2014:7).

4.6.1 Preference for other drinks (N=384)

It was revealed (see Figure 4.2) that 68.0% (n=261) of the respondents preferred to drink other drinks instead of drinking water. These findings are similar to a Bangladesh study

(Bipasha, Raisa & Goon 2017:1), where 95.4% of young people consumed drinks other than water.

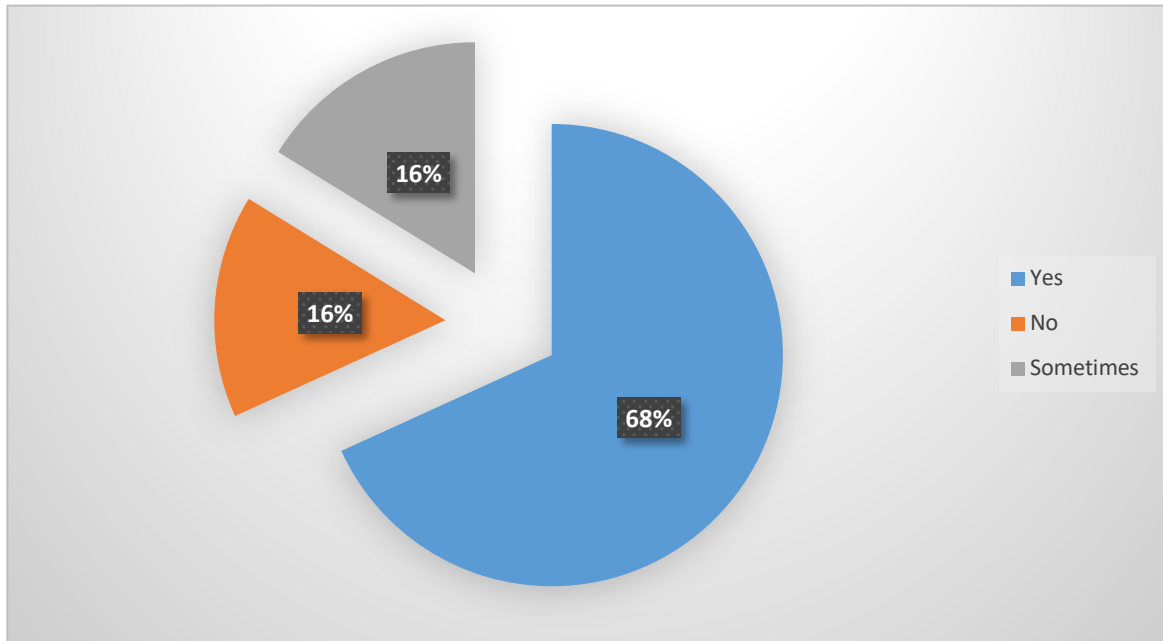


Figure 4.2: Preference for drinks other than water (N=384)

4.6.2 Motivation for preferring drinks other than water

Respondents further provided information on why they preferred other drinks to water. Three categories were generated from the 262 responses which were open-coded, and included sugar addiction (144 responses), energy supply (53 responses), and lack of thirst for water (65 responses) (see Table 4.26).

Table 4.26: Motivation for preferring drinks other than water

Category	Sub-category
a) Sugar addiction (144 responses)	<ul style="list-style-type: none"> • “I am addicted to consuming sugar” • “I often eat sugar as meals. I am so addicted to sugary drinks” • “I have special cravings for sugar and I easily get it from sweet drinks”

Category	Sub-category
b) Energy supply (53 responses)	<ul style="list-style-type: none"> • <i>“Anytime my sugar level drops and I have headache, I always take sugary drink to revitalise my strength”</i> • <i>“Sugar boosts strength”</i> • <i>“It is a fast energy booster”</i>
c) No thirst for water (65 responses)	<ul style="list-style-type: none"> • <i>“I don’t like drinking water”</i> • <i>“I do not drink water at all. The last time I drank water was years ago”</i> • <i>“I don’t always like to drink water”</i>

a) Sugar addiction

Research has revealed that sugar is an addictive substance (DiNicolantonio, O’Keefe & Wilson 2017:1). Many respondents (144 responses) admitted that they prefer other drinks, especially sweetened drinks, to water because they feel they are addicted to sugar:

“I am addicted to sugar. I can’t live without taking it”

“Uncontrollable craving for sugar seems to be my need these days”

This finding may indicate the practice of sugar abuse among respondents. This, in turn, affects human health by inducing all of the diseases related to metabolic syndrome, such as hypertension, diabetes, cancer and cognitive decline (Lustig, Schmidt & Brindis 2012:2).

b) Energy supply

According to Misra, Shrivastava, Shukla *et al* (2016:1) instant energy is being supplied to the body via the intake of sugars. However, research in the field of addiction medicine has shown that the addictive nature of high-level sugar consumption could lead to health

challenges (Nantha 2014:109). Fifty-three respondents admitted they preferred to consume sweetened drinks because they believe sugar replenishes their energy:

“Each time I feel weak and I take sugary drink, I regain my energy”

“Sugar boosts one’s energy”

c) Lack of thirst for water

Literature posits that one of the barriers to the frequency of water intake is physiological, such as the need to satisfy thirst (Doegah & Amoateng 2018:8). In this study, the lack of thirst for water was discovered to determine the frequency of respondents’ water intake. Fifty-three responses reflected that some respondents preferred other drinks to consuming water because they do not thirst for water:

“I don’t get thirsty for water all the time, so I don’t drink water often. I drink other drinks”

“If I am not thirsty for water, there is no need of drinking water and I just go for other drinks instead”

4.6.3 Motivation for preferring water to other drinks

Respondents provided information on their motivations for consuming water. The 60 responses which were open-coded were categorised in terms of water being healthy (48 responses), it hydrates the body (7 responses), and cleanses the body system (5 responses) (see Table 4.27).

Table 4.27: Motivation for preferring water to other drinks

Category	Sub-category
a) Water is healthy (48 responses)	<ul style="list-style-type: none"> • “Consuming water is a very healthy habit” • “Water has a very food effect on our health” • “Water is healthier than other drinks”
b) Water cleanses the body system (5 responses)	<ul style="list-style-type: none"> • “Water can be used to detoxify the body system” • “We use body for cleansing the body system” • “Water purifies the body system”
c) Water hydrates the body (7 responses)	<ul style="list-style-type: none"> • “Water is a good means of hydrating the body” • “I usually take water anytime I’m dehydrated” • “Water hydrates the body”

a) Healthy

Adequate and regular consumption of water comes with several health benefits (Brainmdhealth 2015:1; Kineticowater systems 2018:online), of which some youths are aware (Doegah & Amoateng 2018:6). Forty-eight respondents were of the opinion that water consumption is healthy, hence their preference for consuming water:

“Water is very healthy”

“I know that water is healthy because water is plain and unloaded like other drinks”

b) Hydrates the body

Regular water intake has been confirmed to help the body remain hydrated in order to keep the body healthy (Santevia 2015:online). Seven respondents indicated that they preferred to consume water because water helps to hydrate their body:

“Water hydrates the body”

“Drinking enough water helps to hydrate the body”

c) **Cleanses the body system**

Regularly drinking water has been described as cleansing and detoxifying the body (Brainmdhealth 2015:1; Kineticowater systems 2018:online). Five respondents indicated that their preference for drinking water was because water helps to cleanse the body by flushing out toxins:

“Water helps to protect and rejuvenate the body by flushing out toxins from the body”

“Water is good for detoxification of the body”

Physical inactivity has been described as a dangerous lifestyle practice that predisposes people who are not physically active to developing NCDs and succumbing to an early death (WHO 2018:online). It was therefore important to assess physical inactivity as one type of risky lifestyle behaviour.

4.7 PHYSICAL ACTIVITY (N=384)

This current study sought to discover the level of physical inactivity among respondents, and the findings revealed (see Figure 4.3) that 55.5% (n=213) of respondents engaged in walking for at least 10 minutes daily to move from place to place, while 44.5% (n=171) of respondents did not engage in walking at least 10 minutes daily.

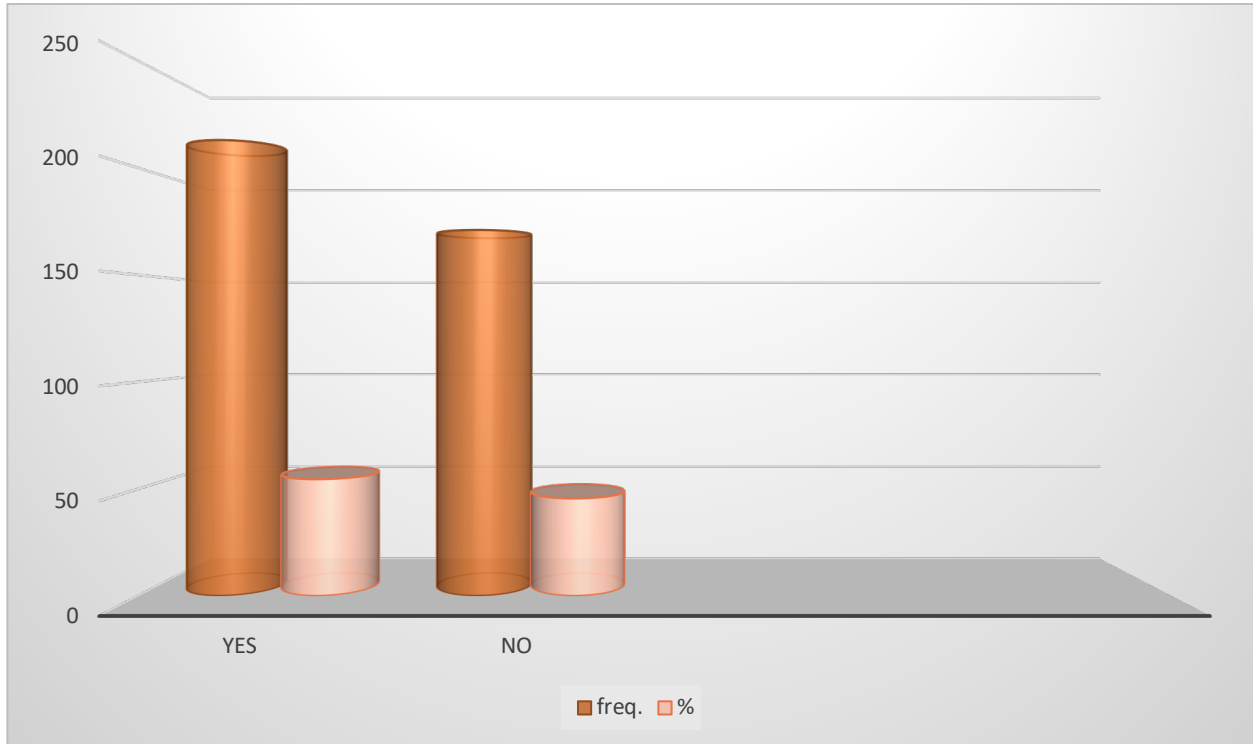


Figure 4.3: Continuous 10 minutes' walk (N=384)

Pertaining to respondents' use of a bicycle for at least 10 minutes, only 12.0% (n=47) of respondents used a bicycle for at least 10 minutes continuously to get to and from places (see Table 4.28).

Table 4.28: Continuous use of a bicycle for exercise (N=384)

RESPONSE	n	f =%
Yes	47	12.0
No	337	88.0
Total	384	100

Further findings also revealed (see Table 4.29) that only 20.8% (n=80) of respondents engaged in vigorous-intensity sport or fitness activities for at least 10 minutes daily. A slightly different result was found in a Turkish study (Belgin, Emel, Deniz *et al* 2014:1), where 47.1% of respondents participated in vigorous-intensity physical exercise.

Table 4.29: Engagement in vigorous-intensity sport (N=384)

RESPONSE	n	f =%
Yes	80	20.8
No	304	79.2
Total	384	100

Only 23.7% (n=91) of respondents spent at least 10 minutes on strength training exercises (see Table 4.30). This study also revealed (see Table 4.30) that 10% of respondents (7.0%; n=27) engaged in swimming for at least 10 minutes daily, 52.9% (n=203) of respondents engaged in walking for exercise, 9.9% (n=38) of respondents cycled, while only 10.7% (n=41) engaged in other aerobic exercises like skating, dancing and rope jumping for at least 10 minutes every day (see Table 4.30). These findings may indicate severely insufficient physical activity among respondents. Efforts to monitor these trends among youths have been recommended in order to avert its health implications (Zhu, Tang, Zhuang *et al* 2019:2).

Table 4.30: Engaging in aerobic exercise (N=384)

Exercise	Response	n	f =%
Stretching or strengthening exercises	Yes	91	23.7
	No	293	76.3
	Total	384	100
Walk for exercise	Yes	203	52.9
	No	181	47.1
	Total	384	100
Swimming or aquatic exercise	Yes	27	7.0
	No	357	93.0
	Total	384	100
Bicycling (including stationary exercise bikes)	Yes	38	9.9
	No	346	90.1
	Total	384	100
Other aerobic exercise (please specify)	Yes	41	10.7
	No	343	89.3
	Total	384	100

Despite the known advantages of physical activity for a healthy life, numerous studies have shown that young people’s level of involvement in physical activities is low, and most youths do not meet the prescribed daily physical activity limit (Belton, O’Brien, Meegan *et al* 2014:1; Łobaszewski, Przewoźniak, Zatońska *et al* 2011:1; Sreeramareddy, Abdul, Kutty *et al* 2012:1). Participants’ activities that were investigated included stretching or strengthening exercises, walking for exercise, swimming or aquatic exercise, cycling (including stationary exercise bikes), and other aerobic exercise, such as skating, dancing and rope jumping.

4.7.1 Importance of physical activity

Respondents provided information on why they think physical activity is important to their health. There were 384 responses that were open-coded and grouped into specific categories, including health improvement (105 responses), mental alertness (52 responses), stress reduction (64 responses), weight loss (54 responses), skin repair (41 responses), and longevity (68 responses) (see Table 4.31).

Table 4.31: Importance of physical activity

Category	Sub-category
a) Health improvement (105 responses)	<ul style="list-style-type: none"> • <i>“Physical activity improves health”</i> • <i>“Physical activity promotes good health”</i> • <i>“Physical activity strengthens the heart”</i>
b) Mental alertness (52 responses)	<ul style="list-style-type: none"> • <i>“It improves mental alertness”</i> • <i>“Physical activity sharpens the mental capability of people”</i> • <i>“Physical activity ensures mental health”</i>
c) Stress reduction (64 responses)	<ul style="list-style-type: none"> • <i>“Physical activity relaxes the body muscles from stress”</i> • <i>“Physical activity makes your body relax from accumulated tension”</i>

Category	Sub-category
	<ul style="list-style-type: none"> • <i>“Physical activity stretches the muscles and nerves and make them relax”</i>
d) Weight loss (54 responses)	<ul style="list-style-type: none"> • <i>“Physical activity helps to control weight gain”</i> • <i>“It burns excess fat and excess weight”</i> • <i>Physically active people are not usually fat”</i>
e) Skin repair (41 responses)	<ul style="list-style-type: none"> • <i>“Physical activity helps to repair the skin”</i> • <i>“It keeps the pores of the skin open and expels toxic agent thereby making the skin to glow”</i> • <i>“Physical activity makes the skin healthy and fresh”</i>
f) Longevity (68 responses)	<ul style="list-style-type: none"> • <i>“When you are physically active, you have prolonged life”</i> • <i>“Longevity”</i> • <i>“It ensures long life without ailments”</i>

a) Health improvement

According to the CDC (2020:online), regular physical activity is of immense benefit to human health as it helps improve general health and reduces individuals’ risks of developing many NCDs. Some youths are aware of the health benefits of being physically active (Afif, Murad, Rahman *et al* 2016:5), as was discovered in this study.

Respondents (105 responses) were of the opinion that physical activity helps improve their health and wellbeing:

“It is very good to engage in physical activity because it helps improve health and makes me so fit”

“When you exercise regularly, your cardio health is well improved and this will also help every organ in your body. You will feel light, rejuvenated and so alive after exercising your body”

b) Mental alertness

Evidence from the literature shows that physical activity can help improve cognitive and mental health (Lubans, Richards, Hillman *et al* 2016:1). The comments shared by 52 respondents indicated that physical activity is good for mental acuity:

“Physical activity helps maintain mental alertness”

“My brain usually works better anytime I engage in physical exercise. I tell you it helps”

c) Stress reduction

Al-Nakeeb, Lyons, Dodd *et al* (2015:7) and Kohl and Cook (2013:3) reported one of the benefits of physical activity being the reduction of stress because it relaxes all body tissues. Sixty-four responses were received to support this finding:

“Physical activity makes your body release tension from stress and also to relax”

“My own personal therapy for getting rid of stress is to exercise my body after which my muscles will relax and enough oxygen would have circulated through my body”

d) Weight loss

Studies by Townsend, Wickramasinghe and Williams *et al* (2015:12) and Khoo and Muller (2013:1) identified weight loss as part of the numerous benefits of physical activity. For 54 respondents, regular physical activity helped them to shed excess weight:

“Physical activity can help those who want to shed some weight and also to control weight gain”

“I control my weight by engaging in serious physical activity because that is the only way I can burn excess fat”

e) Skin repair

The human skin is the largest organ of the body, providing the whole outer body with its covering and serving as protection against injury (Yousef & Sharma 2017:1). Physical activity is linked to modulation, prevention and therapy of the skin (Kruk & Duchnik 2014:1). One of the benefits of physical activity, as mentioned by 41 respondents, was that it helps repair the skin:

“Regular physical activity helps to repair and renew the skin by making it glow, fresh and supple”

“I believe that physical activity helps to open the skin pores and allow easy excretion through the skin and makes it look younger and smooth”

f) Longevity

Longevity refers to an extended length of living (Gu, Schupf & Mayeux, 2015:1) which has been identified as part of the benefits of physical activity (Townsend *et al* 2015:12; Khoo & Muller 2013:1). Some of the respondents (68) were of the opinion that engaging in physical activities helps to prolong life:

“Engaging in physical activity prolongs life”

“When you do lots of exercise, you work on your circulatory system and you tend to live longer”

Despite respondents’ awareness about the importance of physical activity (Umeifekwem 2011:1), youths still fail to engage in sufficient physical activity, as discovered in this study

(see Table 4.30). This could be as a result of an over-estimation of their physical activity, where youths assume that they are physically active because they are not overweight (Corder, Van Sluijs & Goodyer 2011:7).

4.7.2 Total minutes spent sitting down

A sedentary lifestyle has a strong link to an increased risk for excessive weight gain, obesity, diabetes, and other chronic health conditions (Essa & El-Shemy 2015:1; WHO 2013b:6; Awosan *et al* 2014:3). Unfortunately, research has found that the amount of time spent in sedentary behaviours is on the increase (Lou 2014:1). Respondents provided information on the time they usually spend sitting down or resting on a typical day. The four categories which were generated from the 384 responses that were open-coded included: less than five hours daily (39 responses), five to nine hours (123 responses), 10–14 hours (213 responses), and above 15 hours (9 responses) (see Table 4.32).

Table 4.32: Total minutes spent sitting down or resting

Category	Sub-categories
a) Below 5hrs (39 responses)	<ul style="list-style-type: none"> • <i>“I think I spend below 3 hours”</i> • <i>“About 4hours, I am a very busy person”</i> • <i>“3 and half hours or thereabout”</i>
b) 5–9 hrs (123 responses)	<ul style="list-style-type: none"> • <i>“I sit for about 6 hours every day”</i> • <i>“8hours max especially when I am busy with my laptop”</i> • <i>“I spend about 9 hours sitting or resting because I need it”</i>
c) 10–14hrs (213 responses)	<ul style="list-style-type: none"> • <i>“I rest for about 10hours o. I love watching season movies like crazy”</i> • <i>“Between 10 to 12 hours”</i> • <i>“About 13 hours”</i>
d) Above 15hrs (9 responses)	<ul style="list-style-type: none"> • <i>“I sit and rest for a long time. Like more than 15hours in a day because I get tired easily. Stress isn’t my thing”</i> • <i>“I usually don’t have much to do so I sit for close to 16hours”</i> • <i>“Above 15 hours”</i>

a) Less than five hours

Pertaining to the number of hours spent sitting down every day, 39 respondents indicated that they spend less than five hours sitting on a daily basis:

“I sit for an average of 5hours daily or even less than 5 hours because I am a busy person”

“I am usually an up and about person. I don’t sit down for three hours at a stretch”

b) Five to nine hours

One hundred and twenty-three responses were received to indicate that some respondents sit between five to nine hours every day:

“Let me just say I sit for approximately 9hours because I stay long in the school library to learn”

“I sit for long hours, let’s say between 7 and 8 hours”

c) 10–14 hours

The majority of respondents (213) admitted that they spend between 9–14 hours sitting on a daily basis:

“I spend about 10 to 11hours sitting every day especially when I am busy on my laptop”

“I sit for about 12 hours every day to read because I am a medical student. As a medical student you don’t get to sleep well because of your schedule”

d) Above 15 hours

Nine respondents stated that they sit for more than 15 hours every day:

“I usually don’t have much to do, so I sit for over 15 hours”

“I can sleep for Africa. If I am not on my bed sleeping, I will watch my movies on the internet because there is free Wi-Fi in my hostel”

As indicated in Table 4.32, most respondents spent over 5 hours sitting down every day. This indicated that young people spend an average of 6–8 hours in sedentary behaviours every day (Lou 2014:3). Similar findings in a United States study (Unick, Lang, Tate *et al* 2017:9) also indicated that their respondents spent an average of 9.1 hours daily on sedentary behaviour. Peltzer and Pengpid (2016:1) also reported that the overall prevalence of sedentary behaviour among young people was 33.0%, 10.5% and 42.7% in Cambodia, Myanmar and Malaysia, respectively. These findings could be a result of their daily routine, such as sitting in classes for long lectures, reading and leisure time. Unfortunately, this lifestyle indicated excessive sedentary behaviour among youths which can lead to the onset of ailments that are attributed to a sedentary lifestyle (Barnett, Kelly, Young *et al* 2018:5). An attempt to reverse the nation’s youths’ sedentary lifestyle should therefore include reducing young people’s sedentary time, especially the time they spend watching TV and playing computer and video games (Lou 2014:1).

Health is said to dictate the value of any individual’s life, including the social and economic development of individuals in society (WEF 2013:4). Data pertaining to the respondents’ current health status is thus presented next.

4.8 CURRENT HEALTH STATUS (N=384)

The current health status of respondents revealed (see Table 4.33) that 24.2% (n=93) of respondents had been diagnosed with lung disease, 18% (n=69) with heart disease, 4.7%

(n=18) with cancer, 20.6% (n=79) with uncontrollable weight gain, and 24.7% (n=95) with diabetes. These conditions are non-communicable in nature and develop over a long period of time because of its slow progression (CDC 2013:4; WEF 2011:8). In recent years, there has been an increasing impact of NCDs on the health status of different populations (Islam *et al* 2014:1). This was also made evident in a similar study carried out on child and adolescent health measurement initiatives (Child and adolescent health measurement initiatives 2012:6), where 31% of young people were found to have at least one chronic condition. Hence, improving youths' health is crucial for their wellbeing today, and for their future economic productivity (Cooper & De Lannoy 2015:1).

Table 4.33: Health status of respondents (N=384)

Disease	Response	n	f (%)
Lung disease	Yes	93	24.2
	No	291	75.8
	Total	384	100
Heart disease	Yes	69	18.0
	No	315	82.0
	Total	384	100
Cancer	Yes	18	4.7
	No	366	95.3
	Total	384	100
Uncontrollable weight gain	Yes	79	20.6
	No	305	79.4
	Total	384	100
Diabetes	Yes	95	24.7
	No	289	75.3
	Total	384	100

Respondents provided evidence on other types of chronic conditions they experienced. There were 25 responses which were open-coded and categorised as asthma (14 responses), allergies (3 responses), stomach ulcer (4 responses), and arthritis (4 responses) (see Table 4.34).

Table 4.34: Other chronic conditions of respondents

Category	Sub-category
a) Asthma (14 responses)	<ul style="list-style-type: none">• <i>"I have asthma"</i>• <i>"I'm asthmatic"</i>• <i>"I have chronic asthma disease"</i>
b) Allergies (3 responses)	<ul style="list-style-type: none">• <i>"I am allergic to dust"</i>• <i>"I have terrible allergic reactions"</i>
c) Stomach ulcer (4 responses)	<ul style="list-style-type: none">• <i>"Ulcer"</i>• <i>"I am an ulcer patient"</i>• <i>"I have chronic ulcer"</i>
d) Arthritis (4 responses)	<ul style="list-style-type: none">• <i>"I have been battling with arthritis"</i>• <i>"Only arthritis"</i>• <i>"Arthritis"</i>

a) Asthma

According to the WHO (2019:online), asthma is a condition of the human lungs that causes intermittent breathing problems due to the inflammation and tightening of the tubes through which air gets to and from the lungs. There has been an increase in the proportion of young people living with asthma (Park, Brindis, Vaughn *et al* 2013:1). Fourteen respondents stated that they suffered from asthma at the time of data collection:

"I am an asthmatic patient"

"I have had asthma since I was nine years old and my parents have been managing it"

b) Allergies

Allergies are described as the immune system's hypersensitive reactions to substances that make contact with the human body (Felman 2020:online). Three respondents indicated that they frequently had serious allergic reactions:

“I have serious allergic reactions on a regular basis and I feel my body is not resistant enough. I feel so terrible about it”

“I have terrible allergic reactions”

c) Stomach ulcer

Ulcer disease refers to excruciating sores found in the lining of the stomach (Shannon 2018:online). There were four responses to indicate that some respondents suffered from stomach ulcers:

“I have been diagnosed with chronic gastritis/ulcer for over 3 years now”

“I experience ulcer attack regularly. It is not something good at all”

d) Arthritis

Arthritis is defined as a disease of the joints, caused by inflammation (Macon 2020:online). Some respondents (4) stated that they suffered from arthritis:

“I have been battling with arthritis”

“I didn’t know that arthritis was a chronic disease until I was diagnosed”

Although most young people are considered healthy, a study conducted by Park *et al* (2013:1) determined that 31% of young people had at least one chronic ailment; similar to what was discovered in this study. All of these chronic conditions were also identified by the CDC (2012:4) as common ailments among populations. These findings therefore call for immediate intervention targeted at reducing the incidences of chronic diseases

among youths because a heightened risk for some of these chronic conditions emerges during this stage of life (Park *et al* 2013:1).

4.8.1 Receiving medical advice (N=384)

As long as good health promotes growth in both social and economic aspects (WEF 2013:4), ensuring healthy lives and promoting the wellbeing of everyone at all ages is paramount (WHO 2020:online; Chirico 2016:3). This study revealed (see Table 4.35) that some of the respondents were being advised by their physicians or other medical experts to engage in certain lifestyles which can positively alter their present health conditions. This is because a healthy lifestyle depicts a way of life that reduces an individual's risk of being ill or dying early in order to enjoy more quality health throughout their lifetime (Li *et al* 2018:1; Saint & Krueger 2017:1). Of the respondents, 19.3% (n=74) were advised to reduce their salt intake, 20.6% (n=79) were advised or received treatment to lose weight; 22.1% (n=85) were advised or received treatment to stop smoking, 9.9% (n=38) were advised to start or do more exercise, while 11.5% (n=44) were placed on special prescribed diets (see Table 4.35). These findings are a bit different from those reported by Agwu (2014:155), where 50% of young people were 'seeing their GP' at the time of the study, while 39% of the sample reported being on 'regular medication'. However, the findings of both studies indicated an increased rate of disease incidences among young people.

Table 4.35: Medical advice received (N=384)

	Response	n	f =%
Reduced salt intake	Yes	74	19.3
	No	310	80.7
	Total	384	100
Lose weight	Yes	79	20.6
	No	305	79.4
	Total	384	100
Stop smoking	Yes	85	22.1

	Response	n	f =%
	No	299	77.9
	Total	384	100
Increase exercise	Yes	38	9.9
	No	346	90.1
	Total	384	100
Special prescribed diet	Yes	44	11.5
	No	340	88.5
	Total	384	100

4.8.2 Reasons for receiving medical advice

Respondents also provided details on why they were receiving medical advice. The four categories identified after 164 responses were open-coded related to heart disease (30 responses), lung disease (40 responses), obesity (49 responses), and hypertension (45 responses) (see Table 4.36).

Table 4.36: Reasons for receiving medical advice

Category	Sub-category
a) Heart disease (30 responses)	<ul style="list-style-type: none"> • <i>“I was diagnosed irregular heartbeat about 4 years ago and I have been under close watch by my doctor”</i> • <i>“I have ischaemic heart disease”</i> • <i>“I have a heart condition but I can’t even remember what it is called”</i>
b) Lungs disease (40 responses)	<ul style="list-style-type: none"> • <i>“I am asthmatic”</i> • <i>“I have inflamed lungs”</i> • <i>“My breathing is not normal”</i>
c) Obesity (49 responses)	<ul style="list-style-type: none"> • <i>“I am very overweight”</i> • <i>“I weigh 123kg and I am having some health challenges because of this”</i>

Category	Sub-category
	<ul style="list-style-type: none"> • <i>“I am too fat but I am now making efforts to shed some weight”</i>
d) Hypertension (45 responses)	<ul style="list-style-type: none"> • <i>“I have high blood pressure”</i> • <i>“My blood pressure is always high”</i> • <i>“I have hypertension”</i>

a) Heart disease

Heart disease includes a number of conditions affecting the normal functioning of the heart, some of which are genetic, and many of which are the result of lifestyle choices (Amorha *et al* 2017:2; The Heart and Stroke Foundation of South Africa 2017:1). Although data on the incidence of heart diseases in youths are limited, the risks of developing cardiovascular diseases have been on the rise among young people (Andersson & Vasan 2018:online). Thirty respondents revealed that they had already been diagnosed with heart diseases:

“Everybody is bound to have one disease at some point in life, I have heart disease”

“I have been managing Ischaemic heart disease for a while now”

b) Lung disease

Lung diseases are chronic diseases of the airways and other structures of the lungs (Navarro-Torné *et al* 2015:1), with asthma confirmed as the most common chronic lung disease that burdens the world population (European Respiratory Society 2013:6). Forty respondents stated that they had been diagnosed with a disease of the lungs:

“I have a type of lungs disease which makes breathing so difficult. This didn’t start until I started smoking though”

“If I remember correctly, I was diagnosed with chronic asthma”

c) Obesity

Obesity is described as the accumulation of excess fat in the body of an individual of a given height that is connected to poor health outcomes (America’s Children and the Environment 2019:1). It is an important public health challenge, and young people should be encouraged to reduce their excess weight (Eker, Tasdemir, Mercan *et al* 2017:1). Some of the respondents (49 responses) specified that they were medically advised to reduce excess body weight because they were obese:

“My weight is the only disease I carry about”

“I am obese and I have don’t everything to shed my weight”

d) Hypertension

Hypertension is a condition where blood pressure is raised, thereby increasing the individual’s risk of heart disease (Felman 2019:online). In an Indian study (Zafar, Ram, Kumar *et al* 2017:1), 17.7% of young people were detected to have hypertension. In this study, some respondents (45) agreed:

“I have had hypertension since I was 16years old”

“The chronic condition that I have is hypertension”

The revelations of this study call for urgent interventions in order to reduce the toll that NCDs could take on the health of the Nigerian populace in the near future. Adhering to a healthy way of life, regardless of age, compared to an unhealthy way of life, is connected

to a reduced risk of premature mortality from lifestyle-related disease (Fazel-tabar *et al* 2016:1; Dima-Cozma *et al* 2014:1; Kushner & Mechanick 2016:3).

Respondents' perception of the impact of lifestyle patterns on the development of NCDs is hereby assessed to gain insight into the level of their awareness about how their lifestyle patterns connect to the development of NCDs.

4.9 IMPACT OF LIFESTYLE PATTERNS ON NON-COMMUNICABLE DISEASES (N=384)

Even though lifestyle behaviours and the living conditions of youths have been reported to affect both their present and future health, as well as the health of future generations (Loke & Mak 2013:1), the summary of respondents' perception of lifestyle's effect on NCDs revealed that only 7.8% (n=30) of respondents did not agree that their way of life can determine their health status positively or negatively, while 10.7% (n=4) did not have any idea about the relationship between their way of life and their health status. Further analysis revealed (see Table 4.37) that 65.9% (n=253) of respondents agreed that living an unhealthy lifestyle can cause NCDs in the future.

Table 4.37: Summary of respondents' perception of lifestyle and NCDs (N=384)

Perceptions	Agree		Strongly agree		Disagree		Strongly disagree		I don't know	
	n	(f)	n	(f)	n	(f)	n	(f)	n	(f)
Your way of life can determine your health status in a positive or negative way.	245	63.8	68	17.7	15	3.9	15	3.9	41	10.7
Consumption of alcohol is risky to your health.	246	64.1	94	24.5	0	0.0	16	4.1	28	7.3
Physical inactivity is risky to your health.	190	49.5	68	17.7	22	5.7	69	18.0	35	9.1
Smoking is risky to your health.	227	59.1	58	15.1	25	6.5	0	0.0	74	19.3
Harmful alcohol intake can cause heart diseases, cancer of oral cavity, cancer of the liver, cancer of the oesophagus and breast cancer.	236	61.5	62	16.1	0	0.0	0	0.0	86	22.4
Unhealthy diets (diets that do not contain the prescribed daily required nutrients and calories that are important and needed to successfully prevent diseases in the human body) are risky to your health and can cause obesity, diabetes, heart diseases and prostate cancer.	231	60.2	106	27.6	15	3.9	20	5.2	12	3.1
Tobacco smoking can cause lung diseases, lung cancer, prostate cancer breast cancer, cervical cancer and colon cancer.	249	64.8	61	15.9	39	10.2	35	9.1	0	0.0
Physical inactivity (not participating in any sports, walking or cycling) can lead to obesity, heart diseases, colorectal cancer and diabetes.	254	66.1	114	29.7	0	0.0	0	0.0	16	4.2
Living an unhealthy lifestyle (a way of life that increases the risk of being ill or dying early) can cause non-communicable diseases in the future.	213	55.5	40	10.4	18	4.7	7	1.8	106	27.6

4.9.1 Impact of alcohol consumption on health (N=384)

The literature documented that when alcohol gets into the human system, it becomes transformed into a poisonous chemical known as acetaldehyde which causes cancer by destroying DNA and preventing the body cells from repairing and replacing the damaged ones (Herbst 2017:4). This study revealed (see Table 4.37) that 77.6% (n=298) of respondents agreed that the consumption of alcohol is risky to their health and can lead to heart diseases, cancer of the oral cavity, cancer of the liver, cancer of the oesophagus and breast cancer. Conversely, 22.4% (n=86) had no idea that alcohol consumption is risky to their health. Despite respondents' knowledge about the health consequences of alcohol consumption, 54.7% (n=210) were consuming alcohol (see Table 4.15). This may indicate a deliberate decision on the part of the youths not to take their health into account (Al-Amari & Al-Khamees 2015:3). This finding is also similar to a study by Gonçalves dos Reis and Marques de Oliveirall (2015:5), where 25.4% of their respondents reported that there was no risk in alcohol consumption. However, the 22.4% (n=86) who had no idea that alcohol consumption is risky to their health cannot be jettisoned because the rate at which the youth population increases makes their health status critical; not only as a determinant of future population health, but also for social and economic development (Patton, Gore, Bloem *et al* 2011:1).

4.9.2 The impact of physical inactivity on health (N=384)

This study established that 23.7% (n=99) of respondents disagreed that physical inactivity is dangerous to their health, while 12.2% (n=47) admitted that they do not know if physical inactivity is risky to their health (see Table 4.37). Corder *et al* (2011:1) and Mikaelsson, Rutberg and Lindqvist (2019:4) similarly found that some young people may be ignorant of impending health risks and the detriments of physical inactivity to their health. Literature revealed that the promotion of physical activity decreases mortality from NCDs (Kumar, Robinson & Till 2015:6), emphasising the need for health promotion programmes targeted at young people (Baldwin *et al* 2013:2).

4.9.3 Perception of the impact of smoking on health (N=384)

The study further established (see Table 4.37) that 74.2% (n=285) of the respondents were aware of the health risk of smoking. Only 19.3% (n=74) of respondents claimed that tobacco smoking could not cause lung diseases, lung cancer, prostate cancer, breast cancer, cervical cancer and colon cancer. These findings are consistent with those reported by Bhimarasetty *et al* (2013:1), where 83.2% of young people knew that smoking could cause cancer, 24.8% knew of its consequences on the respiratory system, and 7% knew of its impact on the cardiovascular system. Literature also indicated that smokers are at a greater risk of developing cancer, cardiovascular disease, chronic lung diseases, poor circulation, which can prevent the healing of stomach ulcers and causes impaired wound healing after an operation (Aleris-hamlet 2016:4). However, it was also established that no matter the age of a person, smoking can be difficult to quit (PRB 2015:3). This is because nicotine addiction is very powerful, making it more difficult to stop smoking than to avoid starting to smoke in the first place (CDC 2014:2; Benjamin 2012:7). Even though the WHO has already warned against the rising number of smoking-related NCD cases among young people, it is unfortunate that many young people seem not to be aware of the effects of unhealthy behaviours on their health, so they are less likely to engage in health-promoting activities (Ellert & Kurth 2013:11; Essa & El-Shemy 2015:1). Hence, there is a need for immediate sensitisation of young people on the benefits of healthy living (Sabharwal 2017:6).

4.9.4 The perception of a poor diet (N=384)

A healthy diet is said to contain the prescribed daily required nutrients and calories that are important and needed to successfully prevent diseases in the human body (Irish Heart Foundation & National Youth Council of Ireland 2010:39; Aleris-Hamlet 2016:2). This study revealed (see Table 4.37) that 87.8% (n=337) respondents agreed that unhealthy diets are harmful and can cause obesity, diabetes, heart diseases and prostate cancer. Only 12.2% (n=47) of respondents either disagreed or did not know that unhealthy diets can cause obesity, diabetes, heart diseases and prostate cancer. These findings are in

accordance with those presented by Abraham, Noriega and Shin (2018:4), where a majority (89.3%) of young people agreed that unhealthy eating choices are detrimental to people's health. Similarly, studies by Barb (2018:1) and Farhud (2015:1) also reported that diet is the greatest factor in lifestyle that has a direct and positive relation with health. A healthy lifestyle describes a way of life that reduces one's risk of being ill or dying early. It is a way of life that helps people enjoy more quality health throughout their lifetime (Li *et al* 2018:1; Saint & Krueger 2017:1). It was therefore important to examine the barriers to a healthy lifestyle among youths in order to suggest effective ways of militating against such barriers and promote healthy lifestyle practices.

4.10 BARRIERS TO HEALTHY LIFESTYLE (N=384)

Compliance with a healthy way of life, regardless of age, compared to an unhealthy way of life, is connected to a reduced risk of premature mortality from lifestyle-related disease and prolonged life expectancy (Fazel-tabar *et al* 2016:1). Aspects that contribute to a healthy lifestyle, among others, are a healthy diet, physical activity, smoking cessation and moderate alcohol consumption (Dima-Cozma *et al* 2014:1; Kushner & Mechanick 2016:3). However, many unhealthy behaviours among young people are caused by suggestions proposed by their friends and peers, family members, personal characteristics, such as the inability to say "No", the desire to satisfy curiosity, the need to satisfy the urge for enjoyment, pleasure and fun, conformity, experimentation, social enhancement, boredom, and relaxation (Zareiyan 2017:5).

Respondents therefore provided information on whether they can quit smoking, alcohol consumption, eating unhealthy food, and become physically active. This study indicated (see Table 4.38) that only 27.3% (n=53) of respondents were willing to quit smoking, 45.0% (n=94) thought they could quit consuming alcohol, 35.4% (n=136) thought they could quit eating unhealthy food, while 37.5% (n=144) believed they could exercise more. These findings may indicate that respondents' knowledge of the lifestyle risk factors associated with NCDs and the level of NCD awareness is not adequate (Divakaran, Muttapillymyalil, Sreedharan *et al* 2010:1; McDougall, Baldwin, Evans *et al* 2016:10).

Table 4.38: Quitting unhealthy lifestyle (N=384)

Decision	Yes		No		Uncertain	
	n	f =%	n	f =%	n	f =%
Able to quit smoking	53	27.3	132	68.1	9	4.6
Able to quit consuming alcohol	94	45.0	74	35.4	41	19.6
Able to quit eating unhealthy food	136	35.4	16	4.2	232	60.4
Able to increase exercise	144	37.5	6	1.6	234	60.9

4.10.1 Reasons for not quitting an unhealthy lifestyle

As indicated in Table 4.39, respondents also explained why they could not quit their unhealthy lifestyle. There were 228 responses which were open-coded and categorised as: indecision (101 responses), enjoyment (84 responses), moderation is not harmful (28 responses), and the fear of losing friends (15 responses).

Table 4.39: Reasons for not quitting an unhealthy lifestyle

Category	Sub-category
a) Indecision (101 responses)	<ul style="list-style-type: none"> • <i>“I need some time to think about this before I take a decision to quit”</i> • <i>“I’m not sure I want to quit my way of life or not”</i> • <i>“I can’t tell for now. I may, I may not. Time will tell”</i>
b) Enjoyment (84 responses)	<ul style="list-style-type: none"> • <i>“I can’t just give up my own way of life, I’m not interested”</i> • <i>“You only live once. I want to enjoy my life to the fullest because I am still young”</i> • <i>“I am just 17years old, why should I quit what I just started enjoying?”</i>
c) Moderation is not harmful (28 responses)	<ul style="list-style-type: none"> • <i>“A little here, a little there will definitely not kill”</i>

Category	Sub-category
	<ul style="list-style-type: none"> • <i>“You just have to do things in moderation. Whether healthy or unhealthy. That is my candid opinion and that is how I live my life”</i> • <i>“Moderation pays”</i>
d) The fear of losing friends (15 responses)	<ul style="list-style-type: none"> • <i>“If I quit now, my friends will stop being loyal to me”</i> • <i>“I don’t want my friends to desert me”</i>

a) Indecision

Indecision is a situation whereby an individual finds it difficult to make a choice (Cambridge Dictionary 2019:online). This could be related to the difficulty in giving up behaviours that have persisted for a long time because typically, when risky and unhealthy behaviours persist, they become difficult to change (Ahmed, Seth & Mahmood 2014:9; Essa & El-Shemy 2015:1). Some respondents (101 responses) admitted that even if they wanted to improve their unhealthy lifestyle, they are faced with constant indecision:

“I have tried to consider living healthy but indecision will not let me”

“I don’t know what to do as you see me. I know I have to rock my world but I also have to do it gently and apply some sense but I find it so hard to decide on quitting dangerous lifestyle”

b) Enjoyment

Enjoyment is a feeling of pleasure (Cambridge Dictionary 2019:online). Eighty-four responses were received to indicate that some respondents were not interested in quitting their unhealthy lifestyle because they felt they were still too young to quit and were enjoying their young life:

“I want to enjoy my life because I am still very young. I’m not done yet”

“It is not yet time for me to quit. I still have a long way to go before I clock 40 years”

This finding is contradictory to literature evidence that the best time to modify an unhealthy lifestyle behaviour is during youth (Al-Nakeeb *et al* 2015:3).

c) Moderation is not harmful

Moderation is defined as the ability to do things within reasonable limits (Cambridge Dictionary 2019:online). There were 28 respondents who did not agree to quit their unhealthy lifestyle practice because they believed that doing everything in moderation is not bad or harmful:

“A little here, a little there isn’t bad. One must balance everything”

“There is a saying that too much of everything is bad. So when you take it moderately, there is no need to quit any habit”

This line of thinking among respondents could be as a result of the pleasure derived from living an unsafe way of life or the inability to say “no” to unhealthy offers (Zareiyan 2017:4).

d) The fear of losing friends

According to Zareiyan (2017:4) one of the barriers to quitting an unsafe lifestyle and living a healthy lifestyle is the fear of losing friends. Some respondents (15) mentioned that the fear of losing their friends prevent them from improving their unsafe lifestyle:

“If I reject my friends’ offers, I may be rejected or even mocked by them”

“I derive so much happiness from doing stuff with my friends, I will lose my friends if I quit what we all do together”

4.10.2 Reasons to quit an unhealthy lifestyle

Respondents gave their opinion on why it is important to quit unhealthy lifestyles. As indicated in Table 4.40, 156 responses were open-coded and grouped together into four categories, namely: improves the quality of life (79 responses), prevents diseases (35 responses), promotes longevity (42 responses), and saves money (4 responses).

Table 4.40: Reasons to quit an unhealthy lifestyle

Category	Sub-category
a) Improves quality of life (79 responses)	<ul style="list-style-type: none"> • <i>“When you quit unhealthy lifestyle, your quality of life will definitely improve”</i> • <i>“Improves quality of one’s life”</i> • <i>“Quality of life will be better”</i>
b) Prevents diseases (35 responses)	<ul style="list-style-type: none"> • <i>“Quit unhealthy lifestyle and enjoy your money that is supposed to go to the doctors (smiles).”</i> • <i>“I believe it is better to quit unhealthy lifestyle so that diseases can be kept at bay”</i> • <i>“The chances of developing diseases will be reduced if you quit unhealthy lifestyle”</i>
c) Promotes longevity (42 responses)	<ul style="list-style-type: none"> • <i>“You will live longer”</i> • <i>“When you change your lifestyle positively, you will live long in good health”</i> • <i>“You will live to old age before you die”</i>

a) Improves quality of life

Health-related quality of life is described as how well an individual performs in life in terms of perceived mental, physical and social wellbeing (Hays & Reeve 2010:3). Quitting an

unhealthy lifestyle can improve the quality of a person's life (Palmer, Sutherland, Barnard *et al* 2018:2), as mentioned by 79 respondents:

"When you quit unhealthy lifestyle, your life's quality gets better"

"Your health quality will improve when you quit unhealthy way of life and you can enjoy your life in good health"

b) Prevents disease

Disease prevention is defined as actions taken to avert the development of disease (Outwater, Leshabari & Nolte 2017:1). Quitting an unhealthy lifestyle can prevent the development of diseases (Palmer *et al* 2018:2). Thirty-five respondents were of the opinion that improving an unhealthy lifestyle helps to keep diseases away:

"Illnesses and diseases will be far from you if you quit unhealthy lifestyle"

"Quitting unhealthy lifestyle safeguards you from diseases associated with lifestyle"

c) Promotes longevity

Longevity refers to an extended length of living (Gu, Schupf & Mayeux 2015:1) which can be achieved by quitting unhealthy lifestyle practices (Baceviciene, Jankauskiene & Emeljanova 2019:9; Harvard Medical School 2019:online). Some of the respondents (42) opined that quitting an unhealthy lifestyle prolongs life:

"Quitting unhealthy lifestyle elongates one's life span"

"Living healthy lifestyle is very good for long life in good health"

Thus, some respondents were aware of the health benefits of improving their unhealthy lifestyle behaviours (Kempen, Muller, Symington *et al* 2012:1).

4.10.3 Opinion on what is responsible for the unsafe way of life

Respondents also provided their opinion on the factors responsible for the unsafe way of life among youths. There were 384 responses which were open-coded and categorised as peer influence (99 responses), low self-esteem (61 responses), poor governmental control (76 responses), parental influence (65 responses), as well as uncontrolled freedom (83 responses) (see Table 4.41).

Table 4.41: Opinion on what is responsible for the unsafe way of life

Category	Sub-category
a) Peer influence (99 responses)	<ul style="list-style-type: none"> • <i>“Peer pressure pushes young people into doing stuff”</i> • <i>“Peer influence is responsible for unsafe way of life”</i> • <i>“Peer pressure is the major reason for living unsafe way of life”</i>
b) Low self-esteem (61 responses)	<ul style="list-style-type: none"> • <i>“So many young people are so gullible because of low self-esteem that they live their lives anyhow”</i> • <i>“Some people get influenced do cheaply. They trust other people more than themselves”</i> • <i>“ones without self-worth are easily influence into living unhealthy lifestyle”</i>
c) Poor governmental control (76 responses)	<ul style="list-style-type: none"> • <i>“It is very annoying that the government carries the blame here”</i> • <i>“Do we even have a government that cares about how young people live? They have no control over almost everything we do”</i>

Category	Sub-category
	<ul style="list-style-type: none"> • <i>“The government has failed to control what and what makes us live unhealthy lifestyle”</i>
d) Parental influence (65 responses)	<ul style="list-style-type: none"> • <i>“Parents are to be blamed for this. A lot of them have no control over their children”</i> • <i>“So many parents are guilty. Some of them also indulge in unhealthy behaviours. Some even socialised their children into taking up unhealthy lifestyles”</i> • <i>“Parental influence cannot be left out in this issue”</i>
e) Uncontrolled freedom (83 responses)	<ul style="list-style-type: none"> • <i>“Too much of freedom to social exposure is responsible for the unsafe way of life among young people”</i> • <i>“So many youths are free and socially exposed to some really dangerous stuff”</i> • <i>“I feel the freedom of young people which is not controlled by older ones is responsible”</i>

a) Peer influence

Peer (see Section 4.4.7) influence is viewed as part of the major determinants of young people’s behaviour (Berten & Rossem 2011:1) and is identified as one of the factors responsible for an unsafe way of life among young people (Guzman & Pohlmeier 2014:3). Ninety-nine respondents admitted that peer influence is one of the factors responsible for an unsafe way of life among youths:

“Peer influence is responsible for unsafe way of life”

“Peers cannot but influence youths to behave in certain ways be it positive or negative. I do support the fact that peer influence determines their unsafe lifestyle”

b) Low self-esteem

Low self-esteem is described as a lack of confidence and feeling downcast about oneself (Firestone 2019:online). It is contributory to unsafe living practices among young people (Guzman & Pohlmeier 2014:3), as confirmed by 61 respondents in this study:

“Some young chaps have low self-esteem and they find it difficult to say no to other people”

“Some youths are so not bold because they have low self-esteem. They believe in other people’s judgement about virtually everything in life. So when their friends tell them to smoke, drink or do other risky things, they just do them”

c) Poor governmental control

The government plays a significant role in improving lifestyle behaviours and the health of individuals. This includes surveillance, research funding, health promotion, quality assurance and recommendations for healthy living (Whitsel 2017:1). There were 76 responses to indicate that poor governmental control is a factor that contributes to unsafe lifestyles among young people:

“When there are no policies that control how young people gain access to some of these harmful substances, they will definitely abuse their freedom”

“I believe that the government should take the lifestyle of people into consideration when formulating the policies that affect wellbeing. By doing this, the government will be able to checkmate some behavioural excesses”

d) Parental Influence

According to literature, parents' lifestyle activities affect those of their children because children view their parents as role models. Young people therefore adopt their parents' health behaviours either to live healthily or not (Abbafati 2010:2). Low or no parental monitoring was identified as one of the factors responsible for an unsafe way of life among young people (Guzman & Pohlmeier 2014:3) as indicated by 65 respondents in this study:

“Parents can also have negative influence over their children and make them live unhealthy life”

“The truth be told, some parents live unhealthy lifestyle and they also teach their children the same way of life. This will definitely affect their lifestyle negatively”

e) Uncontrolled freedom

Freedom is defined as a condition whereby an individual is allowed to think, say or do whatever pleases him/her without limitation or any form of control (Cambridge Dictionary 2019:online). Young people engage in unsafe lifestyle behaviours because of uncontrolled freedom and social exposure (Lumen 2018:online). Eighty-three respondents pointed out that uncontrolled freedom among young people is responsible for their unsafe lifestyles:

“Young people have the tendency to go overboard when doing things. Give them a step, they will take a mile. If their social life and exposure is not monitored, it could lead them into unsafe way of living life”

“Give young people a step and they will take a mile. Young people tend to engage in gross misconduct if they have no check and balances”

4.11 LIFESTYLE CHANGES THAT CAN CONTRIBUTE TO THE PREVENTION OF NON-COMMUNICABLE DISEASES (N=384)

Respondents also provided information on whether they believe living a healthy lifestyle can help prevent NCDs and improve an individual's quality of life. This study determined (see Table 4.42) that 89.6% (n=344) of respondents agreed that living a healthy lifestyle can improve a person's quality of life, while 6.7% (n=26) of respondents disagreed with the statement. However, the study indicated that only 40.6% (n=156) gave positive reasons to quitting unhealthy lifestyle practices (see Table 4.40). The implication of this finding is that even though the majority (f=89.6%; n=344) of respondents agreed that living a healthy lifestyle can improve a person's quality of life (see Table 4.42), 59.3% (n=228) did not agree to quit their unhealthy lifestyle (see Table 4.38). This may indicate that young people take the lifestyle risk factors associated with NCDs for granted (Divakaran *et al* 2017:1; McDougall *et al* 2015:10).

Research has also established that preventing initiation, cessation, stringent controls on access to harmful substances, parental contribution, and school initiatives are the most effective means to prevent NCDs and significantly improve people's quality of life (Kottke *et al* 2016:10; Ranjani & Mohan 2009:11; Xuedong & Ting 2013:1). It is therefore very important for young people to manage their health well during this transitional phase of their lives. In this way, their chances of entering adulthood with the ability to live as healthily as possible are increased (Park *et al* 2013:1).

Table 4.42: Lifestyle changes can contribute to the prevention of non-communicable diseases (N=384)

	Agree		Strongly agree		Disagree		Strongly disagree		I don't know	
	n	f =%	n	f =%	n	f =%	n	f =%	n	f =%
Living a healthy lifestyle can improve the quality of life.	241	62.8	103	26.8	21	5.4	5	1.3	14	3.7

4.11.1 Possibility of youths not living an unsafe way of life

Respondents provided their opinions on the possibility of youths not living an unsafe way of life. There were 384 responses that were open-coded and grouped together into categories identified as: yes (117 responses), no (113 responses), and uncertain (154 responses) (see Table 4.43).

Table 4.43: Opinion on the possibility of youths not living an unsafe way of life

Category	Sub-category
a) Yes (117 responses)	<ul style="list-style-type: none"> • <i>“Yes of course, I feel it is difficult but it is also doable though”</i> • <i>“It is very possible not to live an unsafe way of life”</i> • <i>“I will not say it is impossible to not live an unsafe way of life but it can be a difficult task”</i>
b) No (113 responses)	<ul style="list-style-type: none"> • <i>“Never!”</i> • <i>“It is never possible”</i> • <i>“It cannot be possible”</i>
c) Uncertain (154 responses)	<ul style="list-style-type: none"> • <i>“Well, I am not sure if it is possible to not live an unsafe way of life in this country”</i> • <i>“I really cannot tell. Everything is just upside down with young people”</i> • <i>“I don’t think so”</i>

a) Yes

According to the findings of a study conducted by Michigan State University Extension (2018:1), it is possible for youths to live a safe life, and some respondents (117) agreed:

“It is possible for youths to live safe way of life”

“I believe that if youths are constantly monitored and corrected, it would be possible to live a safe life; although it may not happen as easily as it sounds”

b) No

Although literature shows that the best time to modify an unhealthy lifestyle behaviour is during youth (Al-Nakeeb *et al* 2015:3), contradictory responses (113) were received to indicate that some respondents did not feel it is possible for youth not to live in an unsafe way:

“It is not possible for youths to live a safe lifestyle”

It is never possible. One way or the other, youths miss the way”

c) Uncertain

To be uncertain means not being able to take a definite stand about something (Cambridge Dictionary 2019:online). The majority of respondents (154 responses) were not certain if it is possible for youths not to live an unsafe life:

“I am not certain that it is possible for youths not to live an unsafe way of life”

“Well, I am not sure this is possible though because young people are so inconsistent in their decision making hence, they may or may not be able to live a safe lifestyle”

This finding may indicate that some youths are not convinced that unhealthy lifestyles can be modified at a young age, as was discovered in this study.

4.11.2 Opinion on what can contribute to a safe way of life among youths

Respondents provided their views on what can contribute to a safe way of life. All 384 responses were open-coded, and categorised as: education (115 responses), access control of tobacco and alcohol (101 responses), counselling (52 responses), strict rules

and regulations with sanctions (71 responses), and instilling healthy lifestyle behaviours (45 responses) (see Table 4.44).

Table 4.44: Opinion on what can contribute to a safe way of life among youths

Category	Sub-categories
a) Education on healthy living (115 responses)	<ul style="list-style-type: none"> • <i>“Youths should be educated regularly via different medium on how to live healthy”</i> • <i>“Regular education of youths on the benefits of healthy life style”</i> • <i>“Educate the youth. Use various means to reach out to them in order to live a healthy life”</i>
b) Access control of tobacco and alcohol (101 responses)	<ul style="list-style-type: none"> • <i>“Access of youths to dangerous products like tobacco and alcohol must be reduced or better still, denied”</i> • <i>“Youths should not be allowed to have access to tobacco and alcohol if you want them to live healthy”</i> • <i>“No alcohol, no tobacco. Simple! ”</i>
c) Counselling (52 responses)	<ul style="list-style-type: none"> • <i>“The government and schools have to introduce counselling to some youths who are not living healthy lifestyle”</i> • <i>“Counselling will go a long way”</i> • <i>“Provide means of counselling the young one who need it”</i>
d) Rules and regulations with sanctions (71 responses)	<ul style="list-style-type: none"> • <i>“Laid down rules and regulations that control youth activities must be put in place. Failure to abide by them should attract sanctions”</i> • <i>“Strict rules and regulations must be imposed”</i> • <i>“Where there is no law there is no sin. Law and punishment will help”</i>

Category	Sub-categories
e) Instilling healthy lifestyle behaviours (45 responses)	<ul style="list-style-type: none"> • <i>“healthy behaviours should be instilled in young people by parents”</i> • <i>“Parents should be more firm with teaching healthy lifestyle to youths and should support them”</i> • <i>“Both the family and the school should work together to improve the lifestyle of youths. Parents and school must work hand in hand”</i>

a) Education

Health education has been identified to positively impact on lifestyle modification (Saffari, Amini, Ardebili *et al* 2013:8). The dissemination of health education teachings for young people through formal and informal programmes improve lifestyle behaviour; young people undergoing lifestyle promotion programmes tend to adopt a healthy lifestyle (CDC 2009:10; Bhimarasetty *et al* 2013:1; Essa & El-Shemy 2015:1; Saffari *et al* 2013:8). Some respondents (115) were of the view that educating youths on healthy living will contribute to a safe way of life:

“Education of youths on the benefits of healthy living can further promote safe way of life among them”

“Education is very key when you talk about contributory factors for healthy living among young people. Give education to the youths and you will see tremendous changes”

b) Access control of tobacco and alcohol

Controlling youths’ access to harmful substances by the appropriate institutions have been recommended to help improve their lifestyle (Bhimarasetty *et al* 2013:1; Osei-

Bonsu, Appiah, Norman *et al* 2017:1; Essa & El-Shemy 2015:1). One hundred and one respondents suggested that the reduction of youths' access to tobacco and alcohol could help contribute to a safe way of life:

“Reducing youths’ access to harmful substances such as tobacco and alcohol will help to curb unsafe way of life”

“If there could be very serious control of harmful substances in the society, then it would be difficult for them to have access to them. This is only when lifestyle can be improved”

c) Counselling

Establishing counselling services aimed at providing young people with an understanding of the benefits of making good choices about their health is essential to living a safe lifestyle (Almutairi, Alonazi, Vinluan *et al* 2018:8). In the opinion of some respondents (52), young people should be regularly counselled on the benefits of living a safe lifestyle in order to improve their behaviour:

“I feel when youths are counselled on the positive impact of living a safe way of life, they will change”

“Counselling goes a long way in helping young people choose to live a healthy lifestyle”

d) Strict rules and regulations with sanctions

Establishing rules and consistent enforcement of sanctions, such as increased taxation and advertisement control by the appropriate institutions, is considered a good strategy to prevent young people from living unsafe lifestyles (Bhimarasetty *et al* 2013:1; Osei-Bonsu *et al* 2017:1; Essa & El-Shemy 2015:1; Mayo Clinic 2019:online). In the opinion of

some respondents (71), strict rules and regulations that guide the actions and activities of youths will help contribute to them adopting a safe lifestyle.

“There is no way youths will not live safe lifestyle if they know there are strict rules with sanctions backing them up”

“Make rules and regulations available to curb youths and punish offenders. That’s simple enough in a country where laws are obeyed”

e) Instilling healthy lifestyle behaviours

Studies conducted by Sabharwal (2017:5), the CDC (2009:10) and Bhimarasetty *et al* (2013:1) suggested that instilling healthy behaviours and practices during youth by enlisting parents to express their disapproval of unhealthy behaviours will help to improve young people’s lifestyle choices. Forty-five respondents were also of the opinion that instilling healthy behaviours via parental efforts will positively contribute to them living a safe life:

“With the help of parents who are the custodians of youths, they can live a healthy lifestyle if they are socialized into taking up healthy lifestyle”

“When you instil the values of living healthy in children from infancy and they grow with it, they will live a healthy lifestyle”

4.11.3 General view of how youths live their lives today

Respondents shared their opinion on the general view of how young people live their lives today. Four categories were generated from all 384 responses that were open-coded. These were termed: unsafe (266 responses), dangerous (41 responses), careless (54 responses), and living to please and impress friends (23 responses) (see Table 4.45).

Table 4.45: General view of how youths live their lives today

Category	Sub-category
a) Unsafe (266 responses)	<ul style="list-style-type: none"> • <i>“Absolutely unsafe”</i> • <i>“Very unsafe. You need to see what young people do to themselves”</i> • <i>“Unsafe”</i>
b) Dangerous (41 responses)	<ul style="list-style-type: none"> • <i>“Extremely risky and dangerous”</i> • <i>“Dangerously risky lifestyle”</i> • <i>“Young people live a very dangerous and risky lifestyle all because of the slang YOLO”</i>
c) Careless (54 responses)	<ul style="list-style-type: none"> • <i>“Careless lifestyle is so rampant these days”</i> • <i>“Youths live carelessly and recklessly”</i> • <i>“Unfortunately, most young people live carelessly”</i>
d) Living to please and impress friends (23 responses)	<ul style="list-style-type: none"> • <i>“A lot of young ones live their lives to impress their friends”</i> • <i>“A life of show off”</i> • <i>“They live to impress their folks”</i>

a) Unsafe

An unsafe lifestyle is described in the Merriam-Webster Dictionary (2019:online) as a way of life that is likely to cause loss, damage or harm. The majority (266) of respondents admitted that youths live in an unsafe way:

“Youths live a completely unsafe, risky and dangerous lifestyle”

“There is no better way to say it. Youths live unsafe lifestyle”

b) Dangerous

A dangerous lifestyle is a way of life that is capable of causing injury or loss of life (Cambridge Dictionary 2019:online). Forty-one respondents indicated that youths live their lives in a dangerous manner:

“Youths of nowadays live their lives in a very dangerous way”

“Youths live their lives dangerously”

c) Careless

A careless lifestyle denotes a way of life that jettisons showing adequate attention (Cambridge Dictionary 2019:online). Even though youths have the required knowledge about their health and the problems that may develop from engaging in bad health habits (Alves de Sousa, Gall da Silva, Ferreira 2014:1), 54 respondents stated that they still live their lives carelessly:

“They live a very careless life in the society not minding the repercussions of their actions”

“Young people are fond of living careless lifestyle”

This calls for urgent attention as it may suggest that youths do not care about their lifestyle and the toll it could take on their health (Giles & Brennan 2014:5).

d) Living to please and impress friends

Friendships have been confirmed in the literature to have a significant impact on individual health (Mayo clinic 2019:online). Twenty-three respondents were of the opinion that young people live to please and impress their friends at the detriment of their health:

“So many young people live their lives to impress their friends. I dare say this makes no sense but they still do it though”

“Pleasing friends seems to be the order of the day because every youth is so conscious of making an impression on other youths. So they live all their life pleasing their friend even if it would affect their health”

This finding could indicate that some youths experience low self-esteem and a sense of inferiority (Jhangiani & Tarry 2019:online). Therefore, all interventions to improve youths' lifestyle must consider all life aspects that shape individual lifestyle and understand their impact when creating health-promoting programmes (Sabharwal 2017:4). These interventions must target schools as one of the most important facilitators as unhealthy behaviours are strongly related to peer groups and the school environment; with both having the strongest connection with poor health outcomes (Lazzeri, Azzolini, Pammolli *et al* 2014:1; Wang, Xing & Wu 2013:1).

4.12 POSSIBLE RELATIONSHIPS USING THE CHI-SQUARE

A Chi-square test is used to check for associations or relationships between variables, as described by Pandis (2016:1). In this study, the Chi-square test was utilised to identify possible associations between lifestyle behaviours and NCDs. If the p-value was found to be less than 0.005, it was indicative of a significant association, and when p-value was found to be greater than 0.005, it was indicative of an insignificant association.

4.12.1 Smoking and non-communicable disease

The Chi-square analysis of data revealed (see Table 4.46) that the relationship between smoking (lifestyle) and the development of NCDs (such as lung disease, heart disease, cancer and diabetes) is highly significant at $p \leq 0.005$. This indicates that tobacco use is a strong risk factor for the development of NCDs, causing at least 16 different types of

grave and disabling diseases including cancer, diseases of the lungs, hypertension, heart disease and diabetes (NCD Alliance.org 2017:online).

Table 4.46: Chi-Square test on Smoking and non-communicable disease

	χ^2	Df	P-value	Status
Lungs disease	120.191 ^a	1	.000	Significant
Heart disease	82.380 ^a	1	.000	Significant
Cancer	18.496 ^a	1	.000	Significant
Diabetes	123.626 ^a	1	.000	Significant

4.12.2 Alcohol consumption and non-communicable diseases

The Chi-square analysis of data revealed (see Table 4.47) that the relationship between alcohol consumption (lifestyle) and the development of NCDs (such as heart disease, cancer, diabetes and uncontrollable weight gain) is highly significant at $p \leq 0.005$. The positive relationship between alcohol consumption and the development of NCDs is corroborated by the findings of Parry, Patra and Rehm (2011:3), who claimed alcohol is said to be detrimentally connected to eight different cancers, cardiovascular diseases and diabetes. Furthermore, alcohol consumption has been said to be a risk factor for uncontrollable weight gain in some individuals (Traversy & Chaput 2015:1).

Table 4.47: Chi-Square test on alcohol consumption and non-communicable disease

	χ^2	Df	P-value	Status
Heart disease	70.431 ^a	1	.000	Significant
Cancer	15.813 ^a	1	.000	Significant
Diabetes	105.694 ^a	1	.000	Significant
Uncontrollable weight gain	83.282 ^a	1	.000	Significant

4.12.3 Physical inactivity and non-communicable diseases

The Chi-square analysis of data (see Table 4.48) indicated that the relationship between physical inactivity (lifestyle) and the development of NCDs (such as heart disease, cancer, diabetes and uncontrollable weight gain) is significant at $p \leq 0.005$. Similarly, physical inactivity levels have been found to be on the rise in many countries, with major implications for the incidence of NCDs (WHO 2018:online).

Table 4.48: Chi-Square test on physical activity and non-communicable disease

	χ^2	Df	P-value	Status
Heart disease	319.634 ^a	1	.000	Significant
Cancer	71.764 ^a	1	.000	Significant
Diabetes	307.413 ^a	1	.000	Significant
Uncontrollable weight gain	377.957 ^a	1	.000	Significant

4.12.4 Diet and non-communicable diseases

The Chi-square analysis of data (see Table 4.49) indicated that the relationship between diet (lifestyle) and NCDs (such as lungs disease, heart disease, cancer, diabetes and uncontrollable weight gain) is highly significant at $p \leq 0.005$. Similarly, the nutritional status of what people eat has been confirmed to affect their health, either positively or negatively. The frequency of consuming unhealthy food is associated with the onset of cardiovascular diseases, some types of cancer, diabetes, and the risk of being overweight (NCD alliance.org 2014:1).

Table 4.49: Chi-Square test on diet and non-communicable disease

	χ^2	Df	P-value	Status
Lungs disease	223.787 ^a	3	.000	Significant
Heart disease	153.385 ^a	3	.000	Significant
Cancer	34.438 ^a	3	.000	Significant
Diabetes	230.181 ^a	3	.000	Significant
Uncontrollable weight gain	181.372 ^a	3	.000	Significant

4.13 SUMMARY

In summary, 50.5% (n=194) of respondents smoked (see Table 4.5), 54.7% (n=210) were consuming alcohol (see Table 4.15), 35.4% (n=136) ate takeaway food every day, 40.1% (n=154) ate pastries daily, 46.9% (n=180) took sweetened cold drinks regularly, 71.9% (n=276) did not consume fruits regularly, only 20.8% (n=80) consumed vegetables on a regular basis, and 68.0% (n=261) preferred other drinks instead of drinking water. These findings suggest that respondents did not comply with the daily recommended consumption of foods in accurate portions (see Section 4.6); neither did they meet the recommended daily physical activity level that is required (see Section 4.7).

Sadly, the current health status of respondents revealed (see Table 4.33) that 24.2% (n=93) of respondents had been diagnosed with lung disease, 18% (n=69) with heart disease, 4.7% (n=18) with cancer, 20.6% (n=79) with uncontrollable weight gain, and 24.7% (n=95) with diabetes. Unfortunately, only 27.3% (n=53) of respondents were willing to quit smoking, 45.0% (n=94) thought they could quit consuming alcohol, 35.4% (n=136) thought they could quit eating unhealthy food, while 37.5% (n=144) of respondents thought they could exercise more (see Table 4.38). These findings emphasise that the respondents' lifestyle calls for urgent attention in order to curb the tragedy that may be posed by NCDs in the future.

Chapter 5 focuses on the development of the draft strategic action plan (Objective 6, Phase 3 of the study), based on the above-mentioned findings, as well as a literature review (see Chapter 5, Table 5.3). This draft strategic action plan can be implemented to inform youths about risky lifestyle practices and promote safe lifestyles to decrease NCDs among youths in South-West Nigeria.

CHAPTER 5

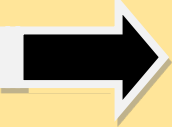
PHASE 2: DEVELOPMENT OF STRATEGIC ACTION PLAN

5.1 INTRODUCTION

This chapter discusses Phase 2 of the study by describing the development of the draft strategic action plan, as indicated in Table 5.1. The chapter includes (1) the methodology followed, (2) a literature review on strategic action plan development, (3) the socio-ecological model, as well as (4) the draft strategic action plan (see Table 5.3). The draft strategic action plan was developed using the analysed data and findings from Phase 1 of this study, as well as the literature review on the principles that guide the presentation of a strategic action plan, steps in strategic action plan development, and the socio-ecological model for strategic action plan development.

Table 5.1: Thesis structure and chapter layout

CHAPTER	DESCRIPTION OF CHAPTER CONTENT	PURPOSE
CHAPTER 1	OVERVIEW OF THE STUDY	
CHAPTER 2	LITERATURE REVIEW 7. The TPB 8. Lifestyle and non-communicable diseases among youths	Questionnaire Development
CHAPTER 3	1. Research design 2. The methodology followed (population, sampling, data gathering techniques, ethical aspects, data gathering process) as well validity and reliability of: 2.1 Phase1 2.2 Phase 2 2.3 Phase 3	Methodology for Phase 1, Phase 2 and Phase 3

<p>CHAPTER 4</p>	<p>Phase 1:</p> <ol style="list-style-type: none"> 1. Data analysis and presentation 2. Interpretation of the findings 3. Discussion of the findings 	<p>Analysis of the findings from youths using a questionnaire</p>
<p>CHAPTER 5</p> 	<p>Phase 2:</p> <ol style="list-style-type: none"> 1. The principles of strategic action plan development 2. The development of the strategic action plan 3. The draft strategic action plan 	<p>Development of strategic action plan</p>

5.2 METHODOLOGY: PHASE 2

The data obtained in Phase 1 of this study (Chapter 4), the literature review on strategic action plan development (see Section 5.3.2), a thorough literature review on the socio-ecological model (see Section 5.4), in conjunction with some steps taken by the WHO (2013) on strategic action plan development (see Annexure 21), were used to develop the first draft of the strategic action plan.

5.3 A STRATEGIC ACTION PLAN

A strategic action plan is said to be a set of actions which provides a structure for the execution and monitoring of outlined activities jointly agreed upon by all involved stakeholders (Nickols 2016:4; World View 2009:5). A strategy refers to established plans on how goals are to be achieved and gives direction as to how goals are reached (Nickols 2016:4). An action plan entails planning what should be done, how to do it, when to do it, who must do it, and the resources or input needed to get it done (Shapiro 2010:4). A strategic action plan therefore covers a short time span and is consequently a more logical document (Clarke 2010:5). The presentation of a strategic action plan was guided by specific basic principles, as described next.

5.3.1 Principles that guide the presentation of a strategic action plan

Litman (2013:4) explained six principles that need to be taken into account when presenting a strategic action plan. These principles stipulate that the strategic action plan must be: (1) comprehensive, (2) efficient, (3) inclusive, (4) informative, (5) logical, and (6) transparent.

- **Comprehensive presentation**

A comprehensive presentation entails that all important choices and impacts are carefully thought out and taken into consideration (Litman 2013:4). In this study, a comprehensive presentation of the strategic action plan was done by considering all the significant options and expected impacts. This included the identified risky lifestyle behaviours both from the literature and the target population (youths aged 15–24 years), the strategy that must be addressed, the action statements, methods of carrying out the actions, time frames, and the institution/people responsible for taking actions (see Table 5.3).

- **Efficient presentation**

Efficient presentation relates to achieving peak productivity without wasting effort or time (Merriam-Webster Dictionary 2019:online). In this study, in order to achieve productivity, the strategic action plan was well organised according to the existing 2013 WHO document on strategic action plan development (see Annexure 21), current research findings on youths' lifestyles, and experts' validation of the strategic action plan using the Delphi technique. The strategic action plan was also designed and presented in such a way that a time frame was allotted to each action statement to allow for the monitoring of progress and implementation time frames (see Table 5.3).

- **Inclusive presentation**

Inclusive presentation entails the involvement of the people affected by the plan (Litman 2013:4). At the different phases of the study, all stakeholders, namely academics, healthcare practitioners, government officials from the Ministry of Health, Ministry of Education, Ministry of Youth Development, Ministry of Agriculture, Ministry of Information

and Culture, officials from the government agencies (NAFDAC, NDLEA, NPF, NCS), and youths (see Table 5.3) had equal input and opportunities in the development the strategic action plan.

- **Informative presentation**

Informative presentation involves the provision of useful knowledge or ideas (Cambridge Dictionary 2019:online) about the aim of the strategic action plan. Information on the purpose, target, proposed methods of carrying out the action statements, the time frame, the responsible institutions/person(s) to help carry out the actions, and expected end results of the strategic action plan were presented and appropriately communicated in the strategic action plan document (see Table 5.3).

- **Logical presentation**

A logical presentation is defined as a clear, systematic and consistent way of getting actions done (Your Dictionary 2019:online) and presenting it in a logical order. In this study, the strategic action plan's development involved different phases that logically flow one after the other. The logical presentation of the strategic action plan's development started with the researcher obtaining data from youths in Phase 1 of this study (see Chapter 4). Thereafter, a review of literature on strategic action plan development followed (see Section 5.3.4), along with a thorough literature review on the socio-ecological model (see Section 5.4). The review took place in conjunction with some steps taken by the WHO (2013) on strategic action plan development. The logical presentation of the second phase of this study entailed the development of the draft strategic action plan (see Table 5.3) and how it was presented to the participants, while the third phase entailed the validation of the draft strategic action plan via the e-Delphi technique (see Chapter 6). The Delphi technique and what was required from each panellist were logically communicated in the recruitment letter (see Annexure 8) and the instructions that accompanied the embedded validation tool of the strategic action plan (see Table 5.3). The validated strategic action plan (see Table 6.14) was presented alongside the mode of its dissemination (see Chapter 7 for recommendations).

- **Transparent presentation**

Transparent presentation entails a clear understanding of how a procedure works (Your Dictionary 2019:online). The strategic action plan is presented in such a way that every involved person is able to understand the aim of the strategic action plan, followed by a validation process through a robust, open, and transparent consensus process on experts' opinions (see Chapter 6) and the expected outcome of the strategic action plan. The final draft of the strategic action plan document was distributed to all concerned persons, as described in Chapter 7. Developing health promotion plans, such as strategic action plans to promote and encourage healthy lifestyle behaviours, entails an all-inclusive planning strategy; thus, the following steps are taken when scientifically developing a strategic action plan.

5.3.2 Steps in strategic action plan development

The development of a good strategic action plan, as described by Shapiro (2010:4), EscuelaAndaluza de SaludPública (2016:20) and The South Dakota Good & Health Planning Toolkit (2013:2), can be achieved by following some basic steps, namely: (1) Establish a planning team, (2) Review, analyse and synthesise relevant and applicable findings, (3) Define the overall goals, (4) Define performance indicators and targets, (5) Define location, responsibility and timeline, (6) Define the required resources and their sources, (7) Identify challenges, obstacles, or potential barriers to the successful implementing of the strategic action plan, (8) Include monitoring and evaluation activities, and (9) Review the completed action plan.

5.3.2.1 Step 1: Establish a planning team

The development of a strategic action plan starts with the establishment of a team to take up the planning strategy. It is important to ensure a well thought out selection of key professionals, specialists and experts relevant to the exact field, guaranteeing the involvement and incessant commitment of dedicated and respected individuals (Shapiro 2010:4; EscuelaAndaluza de SaludPública 2016:20; The South Dakota Good & Health

Planning Toolkit 2013:2). The essential stakeholders, namely the youths themselves, were included in Phase 1 of the study (see Chapter 3) to provide their input on which to base the strategic action plan. The researcher and the research supervisor formed part of the planning team responsible for the development of the data gathering instruments, and were involved in the analysing the data and finalising the final product. Medical doctors, nurses, academics, directors in the government ministries and agencies who are experts in their various fields (see Chapter 6) also formed part of the team that contributed to the planning and development of the strategic action plan. They did so by contributing their expert opinions during the validation of the draft strategic action plan via the Delphi technique (see Chapter 6).

5.3.2.2 Step 2: Review, analyse and synthesise the findings of the needs-assessment

The second step in the process of developing a strategic action plan entails unifying, synthesising and blending the findings against the needs-assessment carried out by the planning team (Shapiro 2010:4). This is a critical step and can provide evidence for what needs to be addressed in a strategic action plan (The South Dakota Good & Health Planning Toolkit 2013:3; EscuelaAndaluza de SaludPública 2016:4). In this study, a thorough review of literature was conducted to develop a questionnaire (see Annexure 18) to obtain data from youths. The data were analysed (see Chapter 4) and together with a literature review informed the first draft strategic action plan (see Section 5.5). The Delphi technique was used by the panellists to validate the draft strategic action plan (see Chapter 6).

5.3.2.3 Step 3: Define the overall goals

The main purpose of this step is to define the overall goal(s) that the planning group would like to achieve in a given period of time. The moment the overall goal is set, the team can then proceed to create the means to achieve the goals (The South Dakota Good & Health Planning Toolkit 2013:3; EscuelaAndaluza de SaludPública 2016:5; Shapiro 2010:4). The

overall goal of this study was to develop a strategic action plan that can be implemented to inform youths about non-risky lifestyle practices in an attempt to decrease their levels of exposure to risks, and ultimately decrease NCDs in South-West Nigeria (see Chapter 1).

5.3.2.4 Step 4: Define performance indicators and targets

The strategic action plan needs to include how the set goals can be reached and the process of evaluating the success of the strategic action plan. It therefore specifies and quantifies the type and level of expected change for the target population within a specific time (Shapiro 2010:4). In this study, each of the action statements included the specific indicators/actions or methods to be taken, supported by who must take responsibility to achieve the expected outcome within a specific time frame (see Table 5.3).

5.3.2.5 Step 5: Define the location, responsible entity and time frame

The fifth step in the strategic action plan development is deciding who will be responsible for the action, the time frame in which the actions/goals need to be reached, and the place where the strategic action plan is to be carried out; depending on the community assessment findings and available resources (The South Dakota Good & Health Planning Toolkit 2013:3; Shapiro 2010:4; EscuelaAndaluza de SaludPública 2016:6). Possible responsible persons associated with each action statement were identified, and options were shared in the draft strategic action plan (see Table 5.3).

Officials from specific departments within the Ministry of Health and other ministries that have connections to the implementation of the strategic action plan, namely (1) Ministry of Education, (2) Ministry of Sport and Youth Development, (3) Ministry of Information and Culture (4) Ministry of Agriculture, and (5) officials from the government agencies (NAFDAC, NDLEA, the NPF, and NCS); were identified as the responsible persons for carrying out the action statements. The specific entities/person(s) responsible for carrying out each action statement, as well as the time frame in which to achieve the action, were

identified and confirmed after 75% consensus was reached among all panellists (see Table 5.3).

5.3.2.6 Step 6: Define the required resource and their source

Any action plan without sufficient resources, not only referring to financial resources, is ineffective (The South Dakota Good & Health Planning Toolkit 2013:3; Shapiro 2010:4; EscuelaAndaluza de SaludPública 2016:6). Both monetary and human resources were included in the action/methods and/or responsible person(s) in the strategic action plan in order to ensure effective implementation prospects (see Table 5.3).

5.3.2.7 Step 7: Identify challenges, obstacles, or potential barriers to the successful implementation of the strategic action plan

Examining the potential obstacles that could pose a setback to the successful implementation of the strategic action plan and resolving challenges is helpful in the successful implementation of the strategic action plan (EscuelaAndaluza de SaludPública 2016:20; Shapiro 2010:4; The South Dakota Good & Health Planning Toolkit 2013:2). The potential obstacles envisaged to lead to the unsuccessful implementation of the strategic action plan in this study included a lack of full cooperation on the part of human resources, lack of cooperation on the part of the youths, as well as financial constraints. In an attempt to address these challenges, the required resources and responsible person(s) were included in the strategic action plan. The involvement of all stakeholders in the development or the validation of the strategic action plan was an attempt to improve the buy-in of all stakeholders and improve the implementation possibilities.

5.3.2.8 Step 8: Include monitoring and evaluation activities

It is important to consider the monitoring and evaluation activities that will help in monitoring how well the plan is able to address what it is designed for (The South Dakota Good & Health Planning Toolkit 2013:3; Shapiro 2010:4; EscuelaAndaluza de

SaludPública 2016:7). In this study, a follow-up on the progress of the strategic action plan was one of the most significant steps of the entire process. The monitoring of the strategic action plan will be carried out at various levels deemed appropriate by the involved stakeholders in order to track its progress and effectiveness after its implementation. The monitoring and evaluation of the strategic action plan were suggested to take the form of quarterly official reports (see Section 7.3).

5.3.2.9 Step 9: Review the completed action plan

It is important to carefully cross-check for completeness of the strategic action plan by not leaving anything out that will impinge on the projected outcome(s) of the plan (EscuelaAndaluza de SaludPública 2016:7; Shapiro 2010:4). In order to ensure completeness of the strategic action plan, the draft strategic action plan was carefully cross-checked by the researcher and the research supervisor. The draft strategic action plan, with the embedded validation tool, was pre-tested and changes were implemented before panellists received the recruitment letter for participation in round 1. After round 1 of the validation, the findings were analysed, and the changes were implemented into the second draft strategic action plan. This plan, along with the embedded validation tool, was again sent out to all panellists for validation and inputs. The process continued for two rounds until 75% consensus was reached by all Delphi panellists (see Section 6.6).

Although the TPB was used as the theoretical standing that underpins the relationship between individuals' attitudes and behaviours, the socio-ecologic model was used to guide the process of strategic action plan development in order to increase the implementation of the plan, its effectiveness, and its evaluation.

5.4 USING A MODEL FOR STRATEGIC ACTION PLAN DEVELOPMENT

Models are used by strategic action planners to guide the process of goal attainment as they work with individuals, groups, and communities who have diverse risky lifestyle behaviours, including smoking, harmful alcohol consumption, physical inactivity, and

unhealthy diets (Smartsheet 2020:online). In order for strategic action plans to be effective, the use of models can provide a framework that will guide the strategic action planners as they develop health promotion programmes (Simpson 2015:1). Health behaviour models help to explain the reasons for individuals' and groups' behaviour in order to develop actions focused on a specific behaviour. These models therefore increase the effectiveness of the plan, its implementation, and its evaluation. Multiple models must be considered when developing interventions to improve lifestyle changes and the most appropriate for a specific context should be decided on (Simpson 2015:2; Glanz 2010:19). The processes included in the socio-ecological model were found to best capture changes in risky lifestyle behaviours such as smoking, harmful alcohol consumption, physical inactivity, and unhealthy diets, and was therefore the model of choice.

5.4.1 Socio-ecological model

The socio-ecological model addresses behaviour change at multiple levels and accounts for various factors that can influence the process of behaviour change in individuals, groups and the community (Glanz 2010:19). The model focuses on interventions targeted at individuals and the environment, with the intension to promote health (Simpson 2015:2; Anjorin, Carter & Kelly 2019:online). As discussed in Chapter 2, attitudes towards a particular behaviour are formed by beliefs about the behaviour and the outcomes of the specific behaviour. The youths' attitude towards healthy and unhealthy lifestyle practices therefore entails their beliefs about a specific behaviour and their assessments of the outcome of the behaviour in the long-term.

The use of the TPB in this study provides an explicit explanation of how individual behaviour is determined by behavioural intention. Some extrinsic factors and restrictions can, however, prevent individual youths from performing a particular behaviour, even when they have the intention to do so; thereby leading to behavioural change (Health Communication Capacity Collaborative 2013:1). These extrinsic factors and restrictions are explained in this study, using the social-ecological model.

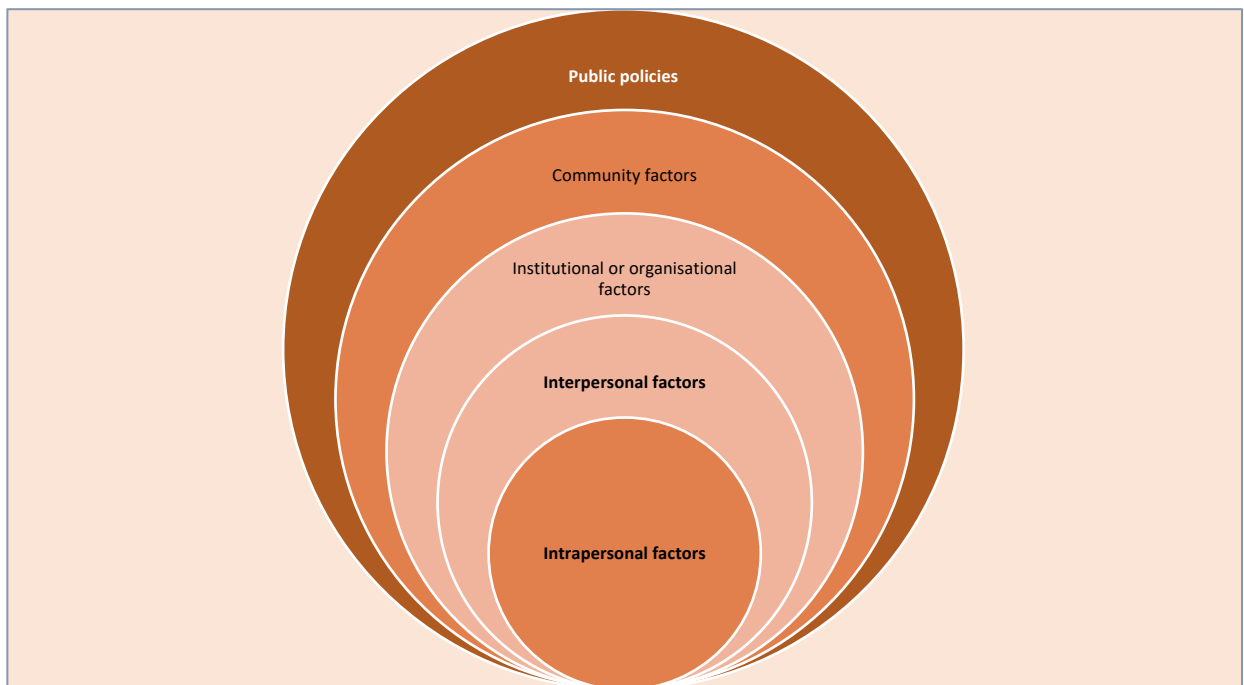


Figure 5.1: Socio-ecological model (Glanz 2010:19)

The factors that can influence the process of behaviour change among individual youths, groups and the community (in order to transform unhealthy behaviours to healthy behaviours via strategic action planning) are hereby explained through the five factors influencing health behaviour, as identified by the socio-ecological model.

5.4.1.1 Intrapersonal factors

Intrapersonal factors comprise individual characteristics such as knowledge, beliefs, and behaviours. Most health promotion strategic action plans are targeted at this level by educating individuals about ways to decrease unhealthy/risky lifestyle practices (Simpson 2015:2; Anjorin *et al* 2019:online; Glanz 2010:19). The strategic action plan that was developed in this study has the intention to change youths' behaviour in terms of living risky lifestyles in an attempt to ultimately reduce NCDs in South-West Nigeria.

5.4.1.2 Interpersonal factors

Interpersonal factors involve the social environment that affects individuals, such as friends, family, and peers who have close relationships with the individual and influence their behaviour (Glanz 2010:19). Consequently, an individual's behaviour also influences their friends, family and peers (Simpson 2015:2; Anjorin *et al* 2019:online). The youths' social environment, such as peers at school and family members who have close relationships with the individual youths and influence their behaviour, was taken into consideration while developing the strategic action plan. This was done by clearly stating schools' roles in educating individuals and peers – and the role of the government in educating parents – on the promotion of healthy behaviours among youths, for the successful implementation of the strategic action plan (see Table 5.3).

5.4.1.3 Institutional or organisational factors

Institutional or organisational factors refer to all organised social institutions that have formal or informal policies and structures that influence individuals' behaviours in one way or another (Anjorin *et al* 2019:online). The goal of strategic action plans is to encourage organised social institutions to provide environments that promote health and provide healthy lifestyle options (Simpson 2015:2). In this context, the participation of relevant structural units at the Nigeria Ministry of Health, Ministry of Education, Ministry of Youth and Sport Development, Ministry of Agriculture, Ministry of Information and Culture, as well as top officials in the NAFDAC, NDLEA, the NPF, and NCS were involved in the development of the strategic action plan. These structural units served as part of the planning team for the development of the strategic action plan, they validated the draft strategic action plan, and were included as the institutions/entities responsible for the development and implementation of the strategic action plan (see Table 5.3).

5.4.1.4 Community factors

Community factors are defined as the connections between an organisation and an institution, which includes community norms and values that influence an individual's behaviour (Anjorin *et al* 2019:online). Strategic action plans aimed at these community values and norms help improve healthy lifestyles among individuals (Simpson 2015:2; Glanz 2010:19). To ensure lifestyle improvement, societal norms that encourage social institutions, such as families, to engage in activities that promote healthy life choices among youths were considered in the development of the strategic action plan. Social institutions should support the implementation of the strategic action plan by socialising young people in terms of community norms and values that influence behaviour to help promote healthy lifestyles among them (see Table 5.3).

5.4.1.5 Public policies

Public policies refer to plans or guidelines relating to healthy lifestyle practices. A strategic action plan must address aspects that can influence the development of legislation that promotes healthy lifestyle policies for the community at large (Simpson 2015:2). Public policies that ban tobacco and alcohol sale to Nigerian youths, mandate school-based programmes on physical activity and regulate the consumption of unhealthy foods were proposed in this study's strategic action plan (see Table 5.3).

5.5 THE DRAFT STRATEGIC ACTION PLAN

The aim of the strategic action plan is to provide a structured and scientifically sound set of actions that can be implemented by persons within a specific timeframe to inform youths about non-risky lifestyle practices in an attempt to decrease their levels of exposure to risks, and ultimately decrease NCDs in South-West Nigeria. In summary, the nexus between the findings of Phase 1, the identified strategy, and some literature support are illustrated in Table 5.2. It provides a short guide for the development of the first draft strategic action plan.

Table 5.2: Nexus between the findings in Phase 1 and the literature review.

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
Strategy 1	Initiate interventions to reduce tobacco smoking among youths (15–24 years) by 25%.	<ul style="list-style-type: none"> 50.5% (n=194) of youth in South-West Nigeria smoke (see Table 4.5). 	In Malaysia and India, 14.6% and 22.1% of young people respectively smoke tobacco (Hock Lim <i>et al</i> 2017:1; Sharma <i>et al</i> 2015:1).
		<ul style="list-style-type: none"> 91.2% (F=177) of smokers, smoked before breakfast in the past 30 days (see Table 4.7). 	In Iran and Palestine (18.2%; 50% respectively), young people smoked in the early morning and on an empty stomach (Bhattacharyya <i>et al</i> 2018:4; Eldalo 2016:2). This is indicative of a higher likelihood of nicotine dependence (Caraballo <i>et al</i> 2009:4).
		<ul style="list-style-type: none"> 31 (f=16.0%) respondents got introduced to smoking (Simpson 2015:g) by their parents, 104 (f=53.6%) by friends and peers, 7 (f=3.6%) by media, 25 (f=12.9%) by extended family members and 27 (f=13.9%) personally chose to start smoking (see Table 4.12). 	The role models for smoking in the literature are identified as parents, friends, relatives, peers and sometimes by personal decision (Dewi & Supriyati 2013:1; Muttappallymyalil <i>et al</i> 2012:3; Subramaniam <i>et al</i> 2015:4; Aslam <i>et al</i> 2014:1).

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
		<ul style="list-style-type: none"> 95.4% (F=185) of respondents started smoking when they were younger than 20 years, while only 4.6% (F=9) started when they were older than 20 years (see Table 4.13). 	In Indonesia, Korea and India, most young people tried to smoke at a young age (Dewi & Supriyati 2013:1; Hwang & Park 2014:1; Narain <i>et al</i> 2011:1).
		<ul style="list-style-type: none"> 26.3% (n=101) of respondents indicated that limited access to tobacco and alcohol could contribute to a safe way of life (see Table 4.44). 	Reducing youths' access to tobacco and alcohol by limiting ages that have access to them is one of the ways of preventing an unhealthy lifestyle (Osei-Bonsu <i>et al</i> 2017:11).
Strategy 2	Introduce interventions to reduce alcohol consumption among youths (15–24years) by 25%.	<ul style="list-style-type: none"> 54.7% (n=210) of respondents in South-West Nigeria were consuming alcohol (see Table 4.15). 93.3% (F=196) of the respondents who consume alcohol drank alcohol before breakfast in the past 30 days (see Figure 4.1). 	<p>In Canada, 70% of youths were reported to consume alcohol (Canadian centre on substance abuse 2014:1).</p> <p>The prevalence of alcohol consumption before breakfast was 38.3% in an American study (Eisenberg & Fitz 2014:6); different from what was found in this study.</p>

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
		<ul style="list-style-type: none"> • 39 (f=18.7%) respondents got introduced to drinking by their parents, 91 (f=43.4%), by friends and peer, 23 (f=11.0%) by media, 16 (f=7.7%) by extended family members, and 40 (f=19.2%) personally chose to drink (see Table 4.20). 	<p>In Taiwan, Estonia and Kenya, exposure to alcohol through peers/friends, extended family members, media and parents increased the likelihood of alcohol initiation (Yen-TyngChen <i>et al</i> 2016:1; Ruutel <i>et al</i> 2014:1; Gongera, Mugai, Mugai <i>et al</i> 2013:7).</p>
		<ul style="list-style-type: none"> • 92.4% (F=194) of respondents started to drink when they were younger than 20 years, while only 7.6% (F=16) started to drink when they were older than 20 years (see Table 4.21). 	<p>In Brazil, 52.4% of respondents were initiated into alcohol consumption between ages 10 to 13 years, 39.8% between 14 to 17 years, while 7.8% got initiated when they were younger than 10 years old (Gonçalves dos ReisI, Marques de Oliveirall 2015:5).</p>
		<ul style="list-style-type: none"> • 79.6% (F=70) of female respondents consumed more than 6 units of alcohol daily (see Table 4.22). 	<p>Harmful drinking for women is defined as drinking more than 6 units a day or over 35 units a week, while harmful drinking for men is defined as more than 8 units a day</p>

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
		<ul style="list-style-type: none"> 52.5% (F=42) of male respondents consumed more than 8 units of alcohol daily (see Table 4.22). 	or over 50 units a week (Health knowledge education 2018:online).
Strategy 3	Introduce interventions to improve healthy diets among youths (15–24 years).	<ul style="list-style-type: none"> 35.4% (n=136) of respondents ate takeaway food every day (see Table 4.24). 	The regular dietary pattern of most young people includes the consumption of pasta, rice, fried chicken, pastry, French fries, carbonated soft drinks and ice cream (Olatona <i>et al</i> 2018:6; Narayan & Prabhu 2015:2; Otaibi & Kamel 2017:5; Van Zyl <i>et al</i> 2010:1; Sabharwal 2017:4).
		<ul style="list-style-type: none"> 40.1% (n=154) of respondents ate pastries on a daily basis (see Table 4.24). 	In Romania, 11% of respondents ate pastries on a daily basis (Rada 2016:6).
		<ul style="list-style-type: none"> 46.9% (n=180) of respondents drank sweetened cold drinks regularly (see Table 4.24). 	In Colombia, 85.3% of young people consumed sweetened drinks regularly (Herran, Villamor & Quintero-Lesmes 2017:1).
		<ul style="list-style-type: none"> 71.9% (n=276) of respondents did not consume fruits on a regular basis (see Table 4.24). 	In Iran, only 30.3% of young people had the optimal daily consumption of fruits (Shokrvash <i>et al</i> 2013:1).

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
		<ul style="list-style-type: none"> • 20.8% (n=80) of respondents consumed vegetables on a regular basis (see Table 4.24). 	In Iran, only 34.6% young people had the optimal daily consumption of vegetables (Shokrvash <i>et al</i> 2013:1).
		<ul style="list-style-type: none"> • 68.0% (n=261) of respondents preferred to drink other drinks instead of drinking water (see Figure 4.2). 	In Bangladesh, 95.4% of young people consumed drinks other than water (Bipasha <i>et al</i> 2017:1).
Strategy 4	Introduce interventions to enhance physical activity among youths (15–24 years).	<ul style="list-style-type: none"> • 20.8% (n=80) of respondents engaged in vigorous-intensity sport or fitness activities for at least 10 minutes daily (see Table 4.29). 	In Turkey, 47.1% of respondents participated in vigorous physical exercise on a daily basis (Belgin <i>et al</i> 2014:1).
		<ul style="list-style-type: none"> • 7.0% (n=27) of respondents engaged in swimming exercise (see Table 4.30), 10.7% (n=41) in aerobic exercises (see Table 4.30), 23.7% (n=91) in strengthening exercises (see Table 4.30), 55.5% (n=213) walk for at least 10 mins daily (see Figure 4.3). 	Despite known advantages of physical activity for a healthy life, numerous studies have shown that young people’s level of involvement in physical activities is low and most youths do not meet the prescribed daily physical activity guidelines (Belton <i>et al</i> 2014:1), as was the case in this study.

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
		<ul style="list-style-type: none"> 87.5% (n=336) of respondents spend between 5 to 14 hours sitting daily (see Table 4.32). 	In Cambodia, Myanmar and Malaysia, the overall prevalence of sedentary behaviour among young people was 33.0%, 10.5% and 42.7%, respectively (Peltzer & Pengpid 2016:1).
Strategy 5	Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles.	<ul style="list-style-type: none"> 7.8% (n=30) of respondents disagreed with the statement that their way of life can influence their health status positively or negatively (see Table 4.37). 10.7% (n=4) of respondents had no idea about the relationship between their way of life and their possible health status (see Table 4.37). 	In Kuwait, some young people were not aware of the health problems that could arise as a result of an unhealthy lifestyle (Al-Amari & Al-Khamees 2015:4).
		<ul style="list-style-type: none"> 34.1% (n=131) of respondents either disagreed or did not know that living an unhealthy lifestyle can cause NCDs in the future (see Table 4.37). 	Young people are known to take the lifestyle risk factors associated with NCDs for granted (Divakaran <i>et al</i> 2017:1).

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
Strategy 6	Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others.	<ul style="list-style-type: none"> 30.0% (n=115) of respondents indicated that continuous education for youths on healthy living via various means could contribute to a safe way of life (see Table 4.44). 	Health education has been identified to positively impact on lifestyle modification as young people undergoing lifestyle promotion programmes tend to adopt a healthy lifestyle (Saffari <i>et al</i> 2013:8).
		<ul style="list-style-type: none"> 13.5% (n=52) of respondents agreed with the statement that introducing youths to counselling can contribute to a safe way of life (see Table 4.44). 	Counselling young people about lifestyle choices and the benefits of living healthy lives will help promote safe lifestyle behaviours (WHO 2010:14).
		<ul style="list-style-type: none"> 11.7% (n=45) of respondents were of the opinion that parents and teachers instilling moral values in youths could contribute to a safe way of life (see Table 4.44). 	Enlisting parents and educators to express their disapproval of unhealthy behaviours and instilling healthy behaviours and practices in youths can help to improve youth health (Osei-Bonsu <i>et al</i> 2017:11; National Center for Chronic Disease Prevention 2009:10; WHO 2014:2).

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
		<ul style="list-style-type: none"> 7.8% (n=30) of respondents were currently receiving medical advice due to heart disease, 10.4% (n=40) due to lung disease, 12.8% (n=49) due to obesity, and 11.7% (n=45) due to hypertension (see Table 4.36). 	<p>In the eastern part of Nigeria, 50% of young people were currently seeing their doctors, while 39% reported being on regular medication (Agwu 2014:155). Improving youths' health is crucial for their wellbeing today, and for their future economic productivity (Cooper, De Lannoy & Rule 2015:1).</p>
		<ul style="list-style-type: none"> 27.3% (n=53) of respondents were willing to quit smoking, 45.0% (n=94) thought they could quit consuming alcohol, 35.4% (n=136) thought they could quit eating unhealthy food, while 37.5% (n=144) thought they could exercise more (see Table 4.38). 	<p>Quitting unhealthy lifestyle behaviours can avert the development of diseases, decrease mortality, develop a healthier body, and improve the quality of life (Palmer <i>et al</i> 2018:2; Baceviciene <i>et al</i> 2019:9; McDougall <i>et al</i> 2015:10).</p>

	STRATEGY	RESEARCH FINDINGS: PHASE 1	LITERATURE SUPPORT
		<ul style="list-style-type: none"> 18.5% (n=71) of respondents indicated that imposing strict rules and regulations can contribute to a safer way of life (see Table 4.44). 	Enforcing laws and enacting policies to restrict the sales of tobacco, alcohol and other harmful substances to the youth can help improve their health (NIDA 2019:42; Osei-Bonsu <i>et al</i> 2017:11).

Having highlighted the nexus between the findings in Phase 1 and the literature review that formed the background of the draft strategic action, the socio-ecological model was used by the researcher to guide the process of goal attainment while developing the strategic action plan. Since the validation tool was developed to fit and reflect on every aspect in the draft strategic action plan, the tool was embedded within the draft action plan. This allowed the panellists to reflect on and provide opinions on every aspect (see Table 5.3).

Table 5.3: Draft strategic action plan with embedded validation tool

<p>Instructions to panellists</p> <p>Please indicate with a tick in the boxes provided, your choice on each of the following aspects: Inclusion of each strategy in the strategic action plan</p> <ol style="list-style-type: none"> 1. Inclusion of the action statements provided 2. The methods suggested 3. The responsible persons and 4. The suggested time frames. <p>In all the comment boxes, please provide detailed suggestions for improvement.</p>	
Strategy 1:	<p>Initiate interventions to reduce tobacco smoking among youths (15–24 years) by 25%.</p> <p style="text-align: center;"> <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/> </p>
Action statement 1.1	<p>Control tobacco accessibility to youths (15–24 years).</p> <p style="text-align: center;"> <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/> </p>
Method 1.1.1	<p>Develop a policy to control tobacco sales to youths (15–24 years).</p> <p style="text-align: center;"> <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/> </p>

Responsible persons	Please make a tick next to the most appropriate person/s to be responsible for the development of a policy to control tobacco sales to youths (15–24 years).	
	1	A committee of two doctors working in the public health department and two public health nurses <i>appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>
	2	The commissioner for health assisted by a committee of two doctors and two public health nurses working in the public health department <i>appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>
	3	A committee of two doctors working in the public health department and two public health nurses <i>appointed by the director of health, local government service.</i>
	4	Two health practitioners (one public health nurse and one doctor), seconded by the directors of non-communicable disease division (NCDD), each <i>from the state ministry of health and from the local government service.</i>
	5	Educators from the Chattered Institute of Corporate Mentoring and Coaching, Nigeria (CICMCN) <i>assisted by educators from mould Africa; who work with youth on a daily basis.</i>
	6	Director of the department of community development, local government service <i>assisted by community liaison officers from the local government.</i>

Time frame	<p>The policy should be developed and finalised within ... months after approval of the strategic action plan by the ministry of health.</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>6 months</td> <td>9 months</td> <td>12 months</td> <td>18 months</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1	2	3	4	6 months	9 months	12 months	18 months				
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Method 1.1.2	<p>Present the policy to control tobacco sale to youths (15–24 years) to the state house of assembly through the house of assembly commission.</p> <table border="1"> <tr> <td>Agree</td> <td></td> <td>Disagree</td> <td></td> </tr> </table>	Agree		Disagree									
Agree		Disagree											
Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the presentation of the policy to control tobacco sales to youths (15–24 years) to the state house of assembly through the house of assembly commission.</p> <table border="1"> <tr> <td>1</td> <td>The commissioner for health</td> <td></td> </tr> <tr> <td>2</td> <td>Supervisor for health</td> <td></td> </tr> <tr> <td>3</td> <td>Local government legislators</td> <td></td> </tr> <tr> <td>4</td> <td>Director of the department of community development</td> <td></td> </tr> </table>	1	The commissioner for health		2	Supervisor for health		3	Local government legislators		4	Director of the department of community development	
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2	Supervisor for health												
3	Local government legislators												
4	Director of the department of community development												

Time frame	<p>The policy should be presented to the state house of assembly within ... months after developing the policy to control tobacco sales to youths (15–24 years).</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>3 months</td> <td>6 months</td> <td>9 months</td> <td>12 months</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1	2	3	4	3 months	6 months	9 months	12 months							
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Method 1.1.3	<p>Include the policy in the constitution of the state.</p> <table border="1"> <tr> <td>Agree</td> <td></td> <td>Disagree</td> <td></td> </tr> </table>	Agree		Disagree												
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Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the inclusion of the policy to control tobacco sales to youths (15–24 years) in the constitution of the state.</p> <table border="1"> <tr> <td>1</td> <td>Members of the state house of assembly</td> <td></td> </tr> <tr> <td>2</td> <td>The commissioner for health</td> <td></td> </tr> <tr> <td>3</td> <td>Supervisor for health</td> <td></td> </tr> <tr> <td>4</td> <td>Local government legislators</td> <td></td> </tr> <tr> <td>5</td> <td>State house of assembly commission</td> <td></td> </tr> </table>	1	Members of the state house of assembly		2	The commissioner for health		3	Supervisor for health		4	Local government legislators		5	State house of assembly commission	
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3	Supervisor for health															
4	Local government legislators															
5	State house of assembly commission															
Time frame	<p>The policy should be passed into law within ... months after approval of the policy by the state house of assembly.</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>6 months</td> <td>9 months</td> <td>12 months</td> <td>18 months</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1	2	3	4	6 months	9 months	12 months	18 months							
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Method 1.1.4	Ensure enforcement of the law that controls tobacco sales to youths (15–24 years). <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px;">Agree</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 10px;"></div> <div style="border: 1px solid black; padding: 2px 10px;">Disagree</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 10px;"></div> </div>															
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3	Officials of the NPF															
4	Taskforce constituted by the state ministry of health															
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Suggestions/comments																
Strategy 2:	Introduce interventions to reduce alcohol consumption among youths (15–24years) by 25%. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px;">Agree</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 10px;"></div> <div style="border: 1px solid black; padding: 2px 10px;">Disagree</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 10px;"></div> </div>															
Action statement 2.1	Control alcohol accessibility to youths (15–24 years). <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px;">Agree</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 10px;"></div> <div style="border: 1px solid black; padding: 2px 10px;">Disagree</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 10px;"></div> </div>															

Method 2.1.1	Develop a policy to control alcohol sales to youths (15–24 years). <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px;">Agree</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 10px;"></div> <div style="border: 1px solid black; padding: 2px 10px;">Disagree</div> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 10px;"></div> </div>	
Responsible persons	Please make a tick next to the most appropriate person/s to be responsible for the development of a policy to control alcohol sales to youths (15–24 years).	
	1	A committee of two doctors working in the public health department and two public health nurses <i>appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>
	2	The commissioner for health assisted by a committee of two doctors and two public health nurses working in the public health department <i>appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>
	3	A committee of two doctors working in the public health department and two public health nurses <i>appointed by the director of health, local government service.</i>
	4	Two health practitioners (one public health nurse and one doctor), seconded by the directors of non-communicable disease division (NCDD), <i>each from the state ministry of health and from the local government service.</i>
	5	Educators from CICMCN <i>assisted by educators from mould Africa; who work with youth on a daily basis.</i>
	6	Director of the department of community development, local government service <i>assisted by community liaison officers from the local government.</i>

Time frame	<p>The policy should be developed and finalised within ... months after approval of the strategic action plan by the ministry of health.</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>6 months</td> <td>9 months</td> <td>12 months</td> <td>18 months</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1	2	3	4	6 months	9 months	12 months	18 months				
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Method 2.1.2	<p>Present the policy to control alcohol sales to youths (15–24 years) to the state house of assembly through the house of assembly commission.</p> <table border="1"> <tr> <td>Agree</td> <td><input type="checkbox"/></td> <td>Disagree</td> <td><input type="checkbox"/></td> </tr> </table>	Agree	<input type="checkbox"/>	Disagree	<input type="checkbox"/>								
Agree	<input type="checkbox"/>	Disagree	<input type="checkbox"/>										
Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the presentation of the policy to control alcohol sales to youths (15–24 years), to the state house of assembly through the house of assembly commission.</p> <table border="1"> <tr> <td>1</td> <td>The commissioner for health</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2</td> <td>Supervisor for health</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3</td> <td>Local government legislators</td> <td><input type="checkbox"/></td> </tr> <tr> <td>4</td> <td>Director of the department of community development</td> <td><input type="checkbox"/></td> </tr> </table>	1	The commissioner for health	<input type="checkbox"/>	2	Supervisor for health	<input type="checkbox"/>	3	Local government legislators	<input type="checkbox"/>	4	Director of the department of community development	<input type="checkbox"/>
1	The commissioner for health	<input type="checkbox"/>											
2	Supervisor for health	<input type="checkbox"/>											
3	Local government legislators	<input type="checkbox"/>											
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Time frame	<p>The policy should be presented to the state house of assembly within ... months after developing the policy to control alcohol sales to youths (15–24 years).</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>3 months</td> <td>6 months</td> <td>9 months</td> <td>12 months</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1	2	3	4	3 months	6 months	9 months	12 months				
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3 months	6 months	9 months	12 months										

Method 2.1.3	<p>Include the policy in the constitution of the state.</p> <p style="text-align: center;"> <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/> </p>															
Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the inclusion of the policy to control alcohol sales to youths (15–24 years) in the constitution of the state.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px; text-align: center;">1</td> <td>Members of the state house of assembly</td> <td style="width: 40px; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">2</td> <td>The commissioner for health</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">3</td> <td>Supervisor for health</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">4</td> <td>Local government legislators</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">5</td> <td>State house of assembly commission</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	1	Members of the state house of assembly	<input type="checkbox"/>	2	The commissioner for health	<input type="checkbox"/>	3	Supervisor for health	<input type="checkbox"/>	4	Local government legislators	<input type="checkbox"/>	5	State house of assembly commission	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
Method 2.1.4	<p>Ensure enforcement of the law that controls alcohol sales to youths (15–24 years).</p> <p style="text-align: center;"> <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/> </p>															

Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the enforcement of the law that controls alcohol sales to youths (15–24 years).</p> <table border="1"> <tr> <td>1</td> <td>Officials of the NDLEA</td> <td></td> </tr> <tr> <td>2</td> <td>Officials of the NCS</td> <td></td> </tr> <tr> <td>3</td> <td>Officials of the NPF</td> <td></td> </tr> <tr> <td>4</td> <td>Taskforce constituted by the state ministry of health</td> <td></td> </tr> </table>	1	Officials of the NDLEA		2	Officials of the NCS		3	Officials of the NPF		4	Taskforce constituted by the state ministry of health	
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Time frame	<p>The enforcement of the law that controls alcohol sales to youth must commence within ... months after passing the policy into law.</p> <table border="1"> <tr> <td>1 3 months</td> <td>2 6 months</td> <td>3 9 months</td> <td>4 12 months</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1 3 months	2 6 months	3 9 months	4 12 months								
1 3 months	2 6 months	3 9 months	4 12 months										
Suggestions/comments													
Strategy 3	<p>Introduce interventions to improve healthy diets among youths (15–24years).</p> <p>Agree <input type="checkbox"/> Disagree <input type="checkbox"/></p>												
Action statement 3.1	<p>Mandate nutrition labelling of food products by food processing industries.</p> <p>Agree <input type="checkbox"/> Disagree <input type="checkbox"/></p>												
Method 3.1.1	<p>Develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries.</p> <p>Agree <input type="checkbox"/> Disagree <input type="checkbox"/></p>												

Responsible persons	Please make a tick next to the most appropriate person/s to be responsible for the development of a policy that mandates nutrient lists to appear on all packaged foods by food processing industries.		
1	A committee of two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses <i>appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>		
2	The commissioner of health assisted by a committee of two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses <i>appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>		
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Method 3.1.2	<p>Present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly through the house of assembly commission.</p> <table> <tr> <td>Agree</td> <td><input type="checkbox"/></td> <td>Disagree</td> <td><input type="checkbox"/></td> </tr> </table>	Agree	<input type="checkbox"/>	Disagree	<input type="checkbox"/>								
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Method 3.1.3	<p>Facilitate inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state.</p> <p> <input type="checkbox"/> Agree </p> <p> <input type="checkbox"/> Disagree </p>															
Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the facilitation of inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state.</p> <table border="1"> <tr> <td>1</td> <td>Members of the state house of assembly</td> <td></td> </tr> <tr> <td>2</td> <td>The commissioner for health</td> <td></td> </tr> <tr> <td>3</td> <td>Supervisor for health</td> <td></td> </tr> <tr> <td>4</td> <td>Local government legislators</td> <td></td> </tr> <tr> <td>5</td> <td>State house of assembly commission</td> <td></td> </tr> </table>	1	Members of the state house of assembly		2	The commissioner for health		3	Supervisor for health		4	Local government legislators		5	State house of assembly commission	
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Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries.</p> <table border="1"> <tr> <td>1</td> <td>Officials of the National Agency for Food and Drug Administration and Control (NAFDAC)</td> <td></td> </tr> <tr> <td>2</td> <td>Officials of the NCS</td> <td></td> </tr> <tr> <td>3</td> <td>Taskforce constituted by the state ministry of health</td> <td></td> </tr> </table>	1	Officials of the National Agency for Food and Drug Administration and Control (NAFDAC)		2	Officials of the NCS		3	Taskforce constituted by the state ministry of health				
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Suggestions/comments													

Strategy 4	Introduce interventions to enhance physical activity among youths (15–24 years). <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/>							
Action statement 4.1	Improve physical activity among youths (15–24 years). <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/>							
Method 4.1.1	Develop a sports competition/recreation programmes quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion. <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/>							
Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the development of sports competition/recreation programmes quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion.</p> <table border="1"> <tr> <td>1</td> <td>A committee of two doctors working in the public health department, two sports scientists and two public health nurses <i>appointed by the director of non-communicable disease division (NCDD), state ministry of health and state ministry of youth and sports development, Nigeria.</i></td> <td></td> </tr> <tr> <td>2</td> <td>The commissioner of health, assisted by a committee of two doctors working in the public health department, two sports scientists and two public health nurses <i>appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.</i></td> <td></td> </tr> </table>		1	A committee of two doctors working in the public health department, two sports scientists and two public health nurses <i>appointed by the director of non-communicable disease division (NCDD), state ministry of health and state ministry of youth and sports development, Nigeria.</i>		2	The commissioner of health, assisted by a committee of two doctors working in the public health department, two sports scientists and two public health nurses <i>appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>	
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	3	A committee of two sport scientists, two physical and health education instructors <i>appointed by the director of basic and secondary education, state ministry of education, Nigeria.</i>	
	4	Two health practitioners (one public health nurse and one doctor), <i>seconded by the directors of the non-communicable disease division (NCDD), from state ministry of health and the local government service, Nigeria.</i>	
	5	The commissioner for education assisted by a committee of school principals and proprietors <i>appointed by the director of basic and secondary education, state ministry of education, Nigeria.</i>	
	6	The commissioner for youth and sports development <i>assisted by a committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.</i>	
	7	A group of 10 volunteer youths (aged 15–24years) <i>facilitated by the director of sport, state ministry of youth and sports development, Nigeria.</i>	
Time frame	Quarterly sports competition/recreation programmes with attached incentives to encourage young people to participate more in physical activity should be developed and finalised within ... months after the approval of the strategic action plan by the ministry of youth and sports development.		
	1 6 months	2 9 months	3 12 months
			4 18 months

Method 4.1.2	<p>Present a budget to provide access to recreation centres, organising sports/events and incentives to encourage young people to participate in physical activity, to the state governor through the ministry of youth and sports development.</p> <p style="text-align: center;"> <input type="checkbox"/> Agree <input type="checkbox"/> <input type="checkbox"/> Disagree <input type="checkbox"/> </p>																		
Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the presentation of a budget for ensuring accessibility to recreation centres, organising sports and events and incentives for participants to the state governor through the ministry of youth and sports development.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30px; text-align: center;">1</td> <td style="width: 60%;">The commissioner for health</td> <td style="width: 10%;"></td> </tr> <tr> <td style="text-align: center;">2</td> <td>Supervisor for health</td> <td></td> </tr> <tr> <td style="text-align: center;">3</td> <td>Local government legislators</td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td>Director of the department of community development</td> <td></td> </tr> <tr> <td style="text-align: center;">5</td> <td>Commissioner for education</td> <td></td> </tr> <tr> <td style="text-align: center;">6</td> <td>Commissioner for youth and sports development</td> <td></td> </tr> </table>	1	The commissioner for health		2	Supervisor for health		3	Local government legislators		4	Director of the department of community development		5	Commissioner for education		6	Commissioner for youth and sports development	
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	1	2	3	4															
	3 months	6 months	9 months	12 months															
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Suggestions/comments																
Strategy 5	<p>Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles.</p> <p style="text-align: center;"> <input type="checkbox"/> Agree <input type="checkbox"/> Disagree </p>															
Action statement 5.1	<p>Prioritise a health promotion curriculum on healthy lifestyle at all levels of education that is focused on:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Agree</th> <th style="text-align: center;">Disagree</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Smoking</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">Alcohol usage</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">Physical activity</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">Healthy diets</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table>		Agree	Disagree	Smoking	<input type="checkbox"/>	<input type="checkbox"/>	Alcohol usage	<input type="checkbox"/>	<input type="checkbox"/>	Physical activity	<input type="checkbox"/>	<input type="checkbox"/>	Healthy diets	<input type="checkbox"/>	<input type="checkbox"/>
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Healthy diets	<input type="checkbox"/>	<input type="checkbox"/>														
Method 5.1.1	<p>Develop a curriculum that mandates the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention.</p> <p style="text-align: center;"> <input type="checkbox"/> Agree <input type="checkbox"/> Disagree </p>															

Responsible persons	Please make a tick next to the most appropriate person/s to be responsible for the development of a curriculum that mandates the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention.			
	1	A committee of health educators <i>coordinated by the director of education planning, research and development, state ministry of education Nigeria.</i>		
	2	A committee of school principals and proprietors <i>constituted by the director of basic and secondary education, state ministry of education Nigeria.</i>		
	3	Ad-hoc committee of curriculum development experts <i>constituted by the deputy director of National universities commission (NUC) Nigeria.</i>		
	4	The director, NUC Nigeria, <i>assisted by an ad-hoc committee of curriculum development experts, the director of education planning, research and development, state ministry of education, the director of non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>		
	5	Ad-hoc committee of curriculum development experts <i>constituted by the deputy director of NUC Nigeria, seconded by the commissioner for health, and the commissioner for education, Nigeria.</i>		
Time frame	The health promotion curriculum for all levels of education must be developed and finalised within ... months after its approval by the ministry of education.			
	1 6 months	2 9 months	3 12 months	4 18 months

Method 5.1.2	Develop electronic media-based health promotion activities (Health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools using the following:																										
Responsible persons	<p style="text-align: center;">Please make a tick next to the most appropriate person/s to be responsible for the development of electronic media-based health promotion activities (health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools.</p> <table border="1"> <thead> <tr> <th></th> <th style="text-align: center;">Agree</th> <th style="text-align: center;">Disagree</th> </tr> </thead> <tbody> <tr> <td>Social media</td> <td></td> <td></td> </tr> <tr> <td>Television programmes/advertisement</td> <td></td> <td></td> </tr> <tr> <td>Radio jingles</td> <td></td> <td></td> </tr> <tr> <td>Internet pop-up messages</td> <td></td> <td></td> </tr> </tbody> </table> <table border="1"> <tbody> <tr> <td style="text-align: center;">1</td> <td>A committee of educators (Qualified teachers and lecturers) <i>constituted by the director of education planning, research and development, state ministry of education Nigeria.</i></td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td>A committee of educators (Qualified teachers and lecturers) <i>organised by the director of education planning, research and development, state ministry of education and director of non-communicable disease division (NCDD), state ministry of health, Nigeria.</i></td> <td></td> </tr> <tr> <td style="text-align: center;">3</td> <td>A committee of educators (Qualified teachers and lecturers) <i>constituted by the director of education planning, research and development, state ministry of education and director of non-communicable disease division (NCDD) state</i></td> <td></td> </tr> </tbody> </table>				Agree	Disagree	Social media			Television programmes/advertisement			Radio jingles			Internet pop-up messages			1	A committee of educators (Qualified teachers and lecturers) <i>constituted by the director of education planning, research and development, state ministry of education Nigeria.</i>		2	A committee of educators (Qualified teachers and lecturers) <i>organised by the director of education planning, research and development, state ministry of education and director of non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>		3	A committee of educators (Qualified teachers and lecturers) <i>constituted by the director of education planning, research and development, state ministry of education and director of non-communicable disease division (NCDD) state</i>	
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3	A committee of educators (Qualified teachers and lecturers) <i>constituted by the director of education planning, research and development, state ministry of education and director of non-communicable disease division (NCDD) state</i>																										

		<i>ministry of health Nigeria to be assisted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.</i>	
	4	<i>A team of online peer educators constituted by the director of education planning, research and development, state ministry of education and director of non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.</i>	
	5	<i>An ad-hoc committee on media communication strategy constituted by the director, NBC, state ministry of information and culture Nigeria.</i>	
	6	<i>A committee of adequate health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>	
	7	<i>The director, NBC, state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by health a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.</i>	

Time frame	<p>Social media-based, health promotion activities for youths on lifestyle's connection to NCDs in all schools must be developed and finalised within ... months after its approval by the ministry of education.</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>3 months</td> <td>6 months</td> <td>9 months</td> <td>12 months</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1	2	3	4	3 months	6 months	9 months	12 months							
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Suggestions/comments																
Strategy 6	<p>Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others.</p> <table> <tr> <td>Agree</td> <td></td> <td>Disagree</td> <td></td> </tr> </table>	Agree		Disagree												
Agree		Disagree														
Action statement 6.1	<p>Constitute a support group to provide support to youths (15–24 years) who wish to stop smoking, drinking, physical inactivity and an unhealthy diet.</p> <table> <tr> <td>Agree</td> <td></td> <td>Disagree</td> <td></td> </tr> </table>	Agree		Disagree												
Agree		Disagree														
Method 6.1.1	<p>Provide an accessible peer counselling service to youths (15–24 years) who are willing to quit the following:</p> <table border="1"> <thead> <tr> <th></th> <th>Agree</th> <th>Disagree</th> </tr> </thead> <tbody> <tr> <td>Smoking</td> <td></td> <td></td> </tr> <tr> <td>Alcohol usage</td> <td></td> <td></td> </tr> <tr> <td>Physical inactivity</td> <td></td> <td></td> </tr> <tr> <td>Unhealthy diets</td> <td></td> <td></td> </tr> </tbody> </table>		Agree	Disagree	Smoking			Alcohol usage			Physical inactivity			Unhealthy diets		
	Agree	Disagree														
Smoking																
Alcohol usage																
Physical inactivity																
Unhealthy diets																

Responsible persons	Please make a tick next to the most appropriate person/s to be responsible for the provision of an accessible peer counselling service to youths (15–24 years) who are willing to quit smoking, alcohol usage, physical inactivity, and unhealthy diets.		
1	A committee of six certified health counsellors (one person each who major in psychology, nutrition, health care, counselling, nursing and sociology) <i>constituted by the director of Health Promotion Division (HPD), ministry of health Nigeria.</i>		
2	A committee of rehabilitation experts (two doctors, two psychologists, two social workers and two nurses) <i>constituted by the director of rehabilitation unit, ministry of health Nigeria.</i>		
3	A team of trained peer counsellors <i>constituted by the director of rehabilitation unit, ministry of health Nigeria.</i>		
4	Educators from CICMCN <i>assisted by educators from mould Africa; who work with youth on a daily basis.</i>		
5	Director of the department of community development, local government service <i>assisted by community liaison officers from the local government.</i>		
6	A group of youths, trained as peer counsellors, who volunteer to provide counselling to other youths who wish to stop smoking, drinking, physical inactivity and an unhealthy diet, <i>facilitated by the director of sport, state ministry of youth and sports development, Nigeria.</i>		

Time frame	<p>Accessible peer counselling service to youths (15–24 years) must be made available within ... months after the action plan is approved by the ministry of health and ministry of education.</p> <table border="1"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>3 months</td> <td>6 months</td> <td>9 months</td> <td>12 months</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1	2	3	4	3 months	6 months	9 months	12 months																
1	2	3	4																						
3 months	6 months	9 months	12 months																						
Action statement 6.2	<p>Offer education programmes for parents on the importance of youths' healthy lifestyle using diverse medium.</p> <p>Agree <input type="checkbox"/></p> <p>Disagree <input type="checkbox"/></p>																								
Method 6.2.1	<p>Include special information sessions on the importance of youths' healthy lifestyle for all parents by means of:</p> <p>(please tick all appropriate options)</p> <table border="1"> <tr> <td>1</td> <td>Teachers association (PTA) meetings</td> <td></td> </tr> <tr> <td>2</td> <td>Social media</td> <td></td> </tr> <tr> <td>3</td> <td>Pamphlets</td> <td></td> </tr> <tr> <td>4</td> <td>information sheets attached to students' results</td> <td></td> </tr> <tr> <td>5</td> <td>TV adverts</td> <td></td> </tr> <tr> <td>6</td> <td>Radio jingles</td> <td></td> </tr> <tr> <td>7</td> <td>Internet pop-ups</td> <td></td> </tr> <tr> <td>8</td> <td>Uploaded curriculum on the school's website</td> <td></td> </tr> </table>	1	Teachers association (PTA) meetings		2	Social media		3	Pamphlets		4	information sheets attached to students' results		5	TV adverts		6	Radio jingles		7	Internet pop-ups		8	Uploaded curriculum on the school's website	
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8	Uploaded curriculum on the school's website																								

Responsible persons	Please make a tick next to the most appropriate person/s to be responsible for the inclusion of special information sessions on the importance of youths' healthy lifestyle for all parents.			
	1	An ad-hoc committee on media communication strategy <i>constituted by the director, NBC, state ministry of information and culture Nigeria.</i>		
	2	A committee of adequate health educators <i>appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>		
	3	The director, NBC, state ministry of information and culture, <i>seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.</i>		
	4	A committee of school principals and proprietors <i>constituted by the director of basic and secondary education, state ministry of education Nigeria.</i>		
	5	Four members of the parents/teachers association executives invited <i>by the chairman, parents/teachers association.</i>		
Time frame	Special information sessions on the importance of youths' healthy lifestyle for all parents using diverse medium must begin within ... months after the action plan is approved by the ministry of health and ministry of education.			
	1	2	3	4
	3 months	6 months	9 months	12 months

Action statement 6.3	Educate families and communities on the need for youths to maintain a healthy lifestyle using various means. <div style="display: flex; justify-content: space-around; align-items: center;"> Agree <input style="width: 30px; height: 20px;" type="checkbox"/> Disagree <input style="width: 30px; height: 20px;" type="checkbox"/> </div>																	
Method 6.3.1	Educate families and communities on the need for youths to maintain a healthy lifestyle (15–24 years) via attractive advertisements on TV, radio jingles and special announcements at social functions. <div style="display: flex; justify-content: space-around; align-items: center;"> Agree <input style="width: 30px; height: 20px;" type="checkbox"/> Disagree <input style="width: 30px; height: 20px;" type="checkbox"/> </div>																	
Responsible persons	<p>Please make a tick next to the most appropriate person/s to be responsible for the education of families and communities on the need for youths to maintain a healthy lifestyle (15–24 years).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center;">1</td> <td style="width: 85%;">An ad-hoc committee on media communication strategy <i>constituted by the director, NBC, state ministry of information and culture Nigeria.</i></td> <td style="width: 10%;"></td> </tr> <tr> <td style="text-align: center;">2</td> <td>A committee of community health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.</td> <td></td> </tr> <tr> <td style="text-align: center;">3</td> <td>The director, NBC, state ministry of information and culture, <i>assisted a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.</i></td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td>Director of the department of community development, local government service <i>assisted by community liaison officers from the local government and a committee of community health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.</i></td> <td></td> </tr> <tr> <td style="text-align: center;">5</td> <td>A committee of community frontline officers including 1 royal father, 2 Chiefs <i>constituted by the state commissioner for local government and chieftaincy affairs,</i></td> <td></td> </tr> </table>			1	An ad-hoc committee on media communication strategy <i>constituted by the director, NBC, state ministry of information and culture Nigeria.</i>		2	A committee of community health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.		3	The director, NBC, state ministry of information and culture, <i>assisted a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.</i>		4	Director of the department of community development, local government service <i>assisted by community liaison officers from the local government and a committee of community health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.</i>		5	A committee of community frontline officers including 1 royal father, 2 Chiefs <i>constituted by the state commissioner for local government and chieftaincy affairs,</i>	
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5	A committee of community frontline officers including 1 royal father, 2 Chiefs <i>constituted by the state commissioner for local government and chieftaincy affairs,</i>																	

	<i>assisted by 5 representatives from the community landlord association constituted by the state chairman, landlord association.</i>			
Time frame	Education of families and communities should commence within ... months after the approval of the strategic action plan by the ministry of health.			
Suggestions/comments				

1 3 months	2 6 months	3 9 months	4 12 months

5.6 FURTHER APPLICATION OF THE SOCIO-ECOLOGICAL MODEL TO THE STRATEGIC ACTION PLAN DEVELOPMENT

The socio-ecological model (Figure 5.1) addresses behaviour change at multiple levels and focuses on interventions targeted at individuals and the environment, with the intention to promote health (Glanz 2010:5; Simpson 2015:2). Some external factors and restrictions can, however, prevent individual youths from engaging in a particular behaviour, even when they have the intention to do so; thereby leading to behavioural change (Health Communication Capacity Collaborative 2013:1). The application of the five levels influencing health behaviour in the strategic action plan, as identified by the socio-ecological model, is presented in Table 5.4.

Table 5.4: Application of the socio-ecological model to the strategic action plan development

FACTOR	APPLICATION TO THE STRATEGIC ACTION PLAN (see Table 5.3)
<p>Intrapersonal factors (individual characteristics). Refer to Section 5.4.1.1</p>	<p>Strategy 5 and action statement 6.1 in the developed strategic action plan have the goal of changing individual youths' behaviour by informing them of the health risks associated with living risky lifestyles. This will be achieved via the implementation of a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles.</p>
<p>Interpersonal factors (social environment such parents and peers that have close relationships with the individual and influence their behaviour). Refer to Section 5.4.1.2</p>	<p>In the developed strategic action plan, strategies 1 to 5 aim to educate peers while action statements 6.2 aims to educate parents on the promotion of healthy behaviours among youths, in order to improve their lifestyle.</p>
<p>Institutional or organisational factors (all organised social institutions which have formal or informal policies and structures that influence individuals' behaviours in one way or another). Refer to Section 5.4.1.3</p>	<p>The responsible institutions carrying out the action statements in strategies 1 to 6 included relevant structural units at the Nigeria ministry of health, ministry of education, ministry of youth and sport development, ministry of agriculture, ministry of information and culture. Other responsible persons were top officials in the NAFDAC, NDLEA, the NPF, and NCS were involved in the development of the strategic action plan.</p>
<p>Community factors (the connections between an organisation and an institution, which includes community norms and values that influence an individual's behaviour).</p>	<p>Action statement 6.3 aims to educate families and communities on the need for youths to maintain a healthy lifestyle and engage in activities that promote healthy life choices. Social institutions like the family will be educated on socialising young</p>

FACTOR	APPLICATION TO THE STRATEGIC ACTION PLAN (see Table 5.3)
Refer to Section 5.4.1.4	ones into community norms and values that influence behaviour to help promote a healthy lifestyle among them.
<p>Public policies (legislations that promote healthy lifestyle).</p> <p>Refer to Section 5.4.1.5</p>	Policies that ban tobacco and alcohol sale to Nigerian youths, mandate school-based programmes on physical activity, regulate the consumption of unhealthy diet were proposed in strategies 1 to 4 in the developed strategic action plan.

5.7 CONCLUSION

The chapter outlined the methodology followed, literature review on strategic action plans, principles that guide the presentation of a strategic action plan, steps in strategic action plan development, and the socio-ecological model. The aim of the strategic action plan was also discussed, along with the nexus between data on findings of Phase 1 and literature review, the draft strategic action plan with embedded validation tool, as well as the application of the socio-ecological model in the strategic action plan's development. Chapter 6 presents the e-Delphi process used in validating the draft strategic action plan.

CHAPTER 6
PHASE 3: VALIDATION OF DRAFT STRATEGIC ACTION PLAN USING
A DELPHI TECHNIQUE

6.1 INTRODUCTION

This chapter presents the validation of the draft strategic action plan using the e-Delphi technique (qualitative) to obtain the opinions of identified and willing experts. As indicated in Table 6.1, the chapter includes (1) the e-Delphi technique, (2) the validation process, (3) data interpretation and discussion of the findings, as well as (4) the final and validated strategic action plan. It is important to note that the e-Delphi validation tool was embedded in the draft strategic action plan to ensure a robust validation process (see Chapter 5, Table 5.3).

Table 6.1: Thesis structure and chapter layout

CHAPTER	DESCRIPTION OF CHAPTER CONTENT	PURPOSE
CHAPTER 1	OVERVIEW OF THE STUDY	
CHAPTER 2	LITERATURE REVIEW 9. The TPB 10. Lifestyle and non-communicable diseases among youths	Questionnaire Development
CHAPTER 3	1. Research design 2. The methodology followed (population, sampling, data gathering techniques, ethical aspects, data gathering process) as well validity and reliability of: 2.1 Phase 1 2.2 Phase 2 2.3 Phase 3	Methodology for Phase 1, Phase 2 and Phase 3

CHAPTER 4	Phase 1: 1. Data analysis and presentation 2. Interpretation of the findings 3. Discussion of the findings	Analysis of the findings from youths using a questionnaire
CHAPTER 5	Phase 2: 1. The principles of strategic action plan development 2. The development of the strategic action plan 3. The draft strategic action plan	Development of strategic action plan
CHAPTER 6 	Phase 3: 1. e-Delphi technique 2. The validation process 3. Data interpretation and discussion of findings. 4. The validated strategic action plan	Validated strategic action plan

6.2 THE DELPHI TECHNIQUE

The Delphi technique is a method used by researchers to achieve experts' consensus in providing a solution to a problem whenever the need to devise a problem-solving strategy arises (Avella 2016:1; Wilkes 2014:1). It is also employed when experts' opinion are needed on a particular issue in order to reach an agreement (Lv *et al* 2013:2; Chang, Chen, Wu *et al* 2017:4).

Dalkey was the person to first introduce the e-Delphi method in the 1950s as part of a strategy used in the military (Pereira & Alvim 2015:176) to investigate the impending effect of nuclear war (Linstone & Turoff 1975 cited in BiodivERsA Paris, 2014:1). The Delphi process can be carried out through email or by means of web surveys which allow for various rounds until consensus is achieved (Gill *et al* 2013:4). An ideal e-Delphi consensus usually falls between 55% to 100% agreement (Avella 2016:3). In this study, it was decided that 75% was deemed consensus.

According to Tariq and Woodman (2013:1), five important aspects are required for a successful e-Delphi method and must be addressed by researchers who use this technique. The required aspects that were addressed in this study included: (1) purposeful selection of panellists who were qualified experts, (2) anonymous relationships between and among experts, (3) repeated rounds of questioning experts, (4) controlled feedback, and (5) integration of data to achieve consensus. By standard, three rounds of data collection are required on average in Delphi studies (Wilkes 2014:3), but an additional round of data collection may be conducted until consensus is achieved (Brady 2015:3), or less if consensus is reached after two rounds. Data collection typically begins with a questionnaire developed by the researcher to capture the objectives of the study and ends after reaching consensus on the objectives of the study (Wilkes 2014:4); which in this study is an assessment tool based on the strategic action plan.

The Delphi technique was utilised to validate the draft strategic action plan due to its advantages, as described next.

6.2.1 Advantages of Delphi technique

The advantages of the Delphi technique that encouraged the researcher to employ the method in validating the action plan are explained by Donohoe *et al* (2012:3); Dufresne (2017:online), as well as Fink-Hafner, Dagen, Dousak *et al* (2019:5), as follows:

6.2.1.1 Anonymity

The Delphi technique assists in reducing the risk for group dynamics influencing research outcomes in a negative manner. Panellists in this study had the opportunity to freely express their opinions without the constraints or influence of differences in personality, social status or positions held. A software program (Jotform) was used to upload the assessment tool online. The software program ensured that the researcher only received sets of raw data and therefore the identity of the panellists was not revealed to the

researcher or other panellists. These advantages encouraged originality, honesty and a stable consideration of ideas and controlled feedback.

6.2.1.2 Flexibility and reflexivity

The researcher was able to adapt the technique to the research context, design the assessment tool to suit the research, structure data gathering with considerable flexibility, and collect very rich data. The panellists could open the link to obtain access to the assessment tool whenever they were able, and they could take enough time to complete the assessment tool.

6.2.1.3 Convenience

The use of an electronic Delphi tool (in this study called an assessment tool) was convenient for both the researcher and the panellists. The researcher was able to amend the assessment tool after each round to ensure that the tool was applicable to assess the adapted strategic action plan after all comments and input received from panellists in the previous round were incorporated.

6.2.1.4 Saves time and money

The Delphi technique contributes to saving time and cost, as it does not require proximity or a face-to-face meeting. There were no geographical limitations, thereby reducing the researcher's costs in terms of travelling and accommodation.

6.2.2 Limitations of the Delphi technique

The Delphi technique, as explained by Donohoe *et al* (2012:6), has some disadvantages, and these were addressed as follows:

6.2.2.1 Internet access and technology

Internet accessibility challenges and technical difficulties are factors that can mitigate against the Delphi technique. The researcher ensured that the web-based software (JotForm) was compliant with both computer and mobile Apps since access to mobile networks is now readily available in Nigeria with much wider coverage. All panellists also had access to a computer due to the nature of their jobs.

6.2.2.2 Experimental control

Experimental control refers to possible distractions and time management problems associated with the Delphi technique. In this study, the researcher identified vacation periods, high-season times, and major conferences as possible distractions to panellists, and avoided carrying out the e-Delphi study in these periods. The Covid-19 pandemic and its influence on the availability of panellists, because of the nature of their professions, were taken into consideration, and more time was allowed for them to complete the assessment tool. The researcher considered important design features such as ease of use, accessibility and data analysis options of the web-based software before selecting the software. Contact was maintained with the gatekeepers who assisted in sending reminders to panellists throughout the Delphi validation process via email in order to reduce the attrition rate.

6.3 POPULATION AND SAMPLE

The population, as described in Section 3.4.2, consisted of 73 professors and senior lecturers, 68 senior nurses/matrons, 10 medical doctors/consultants working for NGOs, 33 directors in the government ministries, and 13 directors in the government agencies (see Chapter 3). From this population, a sample of 25 Delphi panellists was selected as explained in Section 3.5.3 (see Table 3.4).

6.4 VALIDATION OF INSTRUMENT

6.4.1 Trustworthiness

To ensure trustworthiness, the assessment tool for validation allowed for individual input on each aspect of the draft strategic action plan until 75% consensus by all panellists was reached. The principles of credibility, dependability, transferability, confirmability and authenticity were applied (see Section 3.9).

6.4.2 The pre-test

As described in Section 3.10, a pre-test was carried out on the assessment tool in order to assess the feasibility of the exercise, the effectiveness of the tool, and to determine how well the panellists understood and were able to interpret the questions in the assessment tool (see Chapter 3). The validation process is hereby discussed.

6.5 THE VALIDATION PROCESS

All the panellists received a recruitment letter (see Annexure 8) via email. The recruitment letter allowed them to decline to participate or click on the link in the recruitment letter to gain access to the online assessment tool; by accessing and completing the assessment, they agreed to participate. The steps followed in the validation process in order to reach consensus among panellists' on the developed draft strategic action plan was described in Section 3.11.2. The Delphi rounds took place using an assessment tool based on the draft strategic action plan that consisted of a set of pre-defined response styles including single choice, multiple-choice and paragraph responses for panellists' comments (see Annexure 8). These response styles are often used in Delphi surveys (Hasson & Keeney 2011:4), whereby panellists are allowed to freely express their opinions regarding the topic of discussion (Massaroli, Gue-Martini, Lino *et al* 2017:6). How the Delphi rounds were conducted is discussed next.

6.5.1 Delphi round 1

The panellists accessed the draft strategic action plan and completed the validation tool. They were asked to indicate their level of agreement with every strategy and action statement, the method to be adopted in order to achieve the action statements, the person/s who will have to take responsibility for achieving the methods, as well as the recommended time frame within which every method must be achieved. Panellists had to include their comments and recommendations in the spaces provided (see Annexure 8). Panellists were allowed two weeks to complete the first round of input, then all the raw data were retrieved from the software program (JotForm). The data were analysed and presented, as described in Section 6.6. All input was taken into consideration, and where consensus on an item was not reached, it was included in the second draft strategic action plan. The comments and suggestions were also incorporated in the validation tool in order to develop the second draft strategic action plan with an embedded validation tool that was distributed in the same way as in round 1 (see Annexure 9).

6.5.2 Delphi round 2

In the second round, the second draft strategic action plan with embedded assessment tool was assessed and completed by the panellists, similar to that of the first round (see Annexure 9). As requested, they indicated their level of agreement where at least 75% consensus was not reached on any strategy, action statement, the method to be used to achieve the action statements, the person/s who will be responsible for achieving the methods, as well as the recommended time frame within which every method must be achieved. Panellists were allowed 10 days to complete the second round of feedback, after which all the raw data were retrieved from the software program (JotForm). Round 2 responses were requested within 10 days because there were fewer questions compared to round 1. The data that were analysed are described and presented in Section 6.6.2.

At least 75% consensus was achieved on all the items in the second draft strategic action plan, hence, the Delphi rounds were concluded. The researcher thanked the panellists in a message sent to the gatekeepers via email, thanking them for their contributions and time.

6.6 DATA ANALYSIS

Twenty-five panellist provided their input in round 1. The raw data, including narrative comments, were downloaded by the researcher via the software program (JotForm). This ensured that only raw data were retrieved. Data from the Delphi rounds were analysed using frequency tables to rate the level of agreement or disagreement between panellists' responses. For the comments section, content analysis was applied according to Tesch's eight steps of organising qualitative data. This approach provided an effective process to transcribing unstructured data (Creswell 2014:198), and was systematically used to transcribe narrative data (see Section 3.12.2).

6.6.1 Findings: Round 1

The findings from round 1 are discussed following the order in which the suggested strategies appeared in the first draft strategic action plan table, as illustrated in Table 5.3. A detailed analysis of the data and the interpretation thereof are presented next.

6.6.1.1 Strategy 1: Initiate interventions to reduce tobacco smoking among youths (15–24 years) by 25% (N=25)

As illustrated in Table 6.2, 92% consensus (n=23; N=25) was reached on strategy 1 regarding the initiation of interventions to reduce tobacco smoking among youths (15–24 years) by 25%.

Table 6.2: Strategy 1: Initiate interventions to reduce tobacco smoking among youths (15–24 years) by 25% (N=25)

		RESPONSE			
			n	f=%	CONSENSUS REACHED
STRATEGY 1 (n=25; N=25)	Initiate interventions to reduce tobacco smoking among youths (15–24 years) by 25%.	Agree	23	92.0	YES
		Disagree	2	8.0	
ACTION STATEMENT 1.1 (n=25; N=25)	Control tobacco accessibility to youths (15–24 years).	Agree	25	100	YES
		Disagree	0	0.0	
METHOD 1.1.1 (n=25; N=25)	Develop a policy to control tobacco sales to youths (15–24 years).	Agree	25	100	YES
		Disagree	0	0.0	
RESPONSIBLE PERSON/S TO DEVELOP POLICY TO CONTROL TOBACCO SALES TO YOUTHS (15–24 YEARS) (n=25; N=25)	1. A committee of two doctors working in the public health departments and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		3	12.0	NO
	2. The commissioner for health, assisted by a committee of two doctors and two public health nurses working in the public health department appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		13	52.0	
	3. A committee of two doctors working in the public health		3	12.0	

	department and two public health nurses appointed by the director of health, local government service.				
	4. Two health practitioners (one public health nurse and one doctor), seconded by the directors of the non-communicable disease division (NCDD), each from the state ministry of health and from the local government service.		1	4.0	
	5. Educators from the CICMCN assisted by educators from Mould Africa; who work with youth on a daily basis.		4	16.0	
	6. Director of the department of community development, local government service assisted by community liaison officers from the local government.		1	4.0	
TIME FRAME WITHIN WHICH TO DEVELOP AND FINALISE THE POLICY TO CONTROL TOBACCO SALES TO YOUTHS (15–24 YEARS) (n=25; N=25)	1. 6 months		17	68.0	NO
	2. 9 months		3	12.0	
	3. 12 months		4	16.0	
	4. 18 months		1	4.0	
METHOD 1.1.2 (n=25; N=25)	Present the policy to control tobacco sales to youths (15–24	Agree	25	100	YES
		Disagree	0	0.0	

	years) to the state house of assembly through the house of assembly commission.				
RESPONSIBLE PERSON/S FOR THE PRESENTATION OF THE POLICY TO CONTROL TOBACCO SALES TO YOUTHS (15–24 YEARS) TO THE STATE HOUSE OF ASSEMBLY THROUGH THE HOUSE OF ASSEMBLY COMMISSION (n=25; N=25)	1. The commissioner for health		23	92.0	YES
	2. Supervisor for health		0	0.0	
	3. Local government legislators		0	0.0	
	4. Director of the department of community development		2	8.0	
TIME FRAME WITHIN WHICH TO PRESENT THE POLICY TO CONTROL TOBACCO SALES TO YOUTHS (15–24 YEARS) TO THE STATE HOUSE OF ASSEMBLY (n=25; N=25)	1. 3 months		17	68.0	NO
	2. 6 months		5	20.0	
	3. 9 months		2	8.0	
	4. 12 months		1	4.0	
METHOD 1.1.3 (n=25; N=25)	Include the policy in the constitution of the state.	Agree	24	96.0	YES
		Disagree	1	4.0	

RESPONSIBLE PERSON/S TO INCLUDE THE POLICY TO CONTROL TOBACCO SALES TO YOUTHS (15–24 YEARS) IN THE CONSTITUTION OF THE STATE (n=24; N=25)	1. Members of the state house of assembly		21	87.5	YES
	2. The commissioner for health		1	4.2	
	3. Supervisor for health		0	0.0	
	4. Local government legislators		0	0.0	
	5. State house of assembly commission		2	8.3	
TIME FRAME WITHIN WHICH TO INCLUDE THE POLICY TO CONTROL TOBACCO SALES TO YOUTHS (15–24 YEARS) IN THE CONSTITUTION OF THE STATE (n=24; N=25)	1. 6 months		18	75.0	YES
	2. 9 months		4	16.6	
	3. 12 months		1	4.2	
	4. 18 months		1	4.2	
METHOD 1.1.4 (n=25; N=25)	Ensure enforcement of the law that controls tobacco sales to youths (15–24 years)	Agree	25	100	YES
		Disagree	0	0.0	
RESPONSIBLE PERSON/S TO ENSURE ENFORCEMENT OF THE LAW THAT CONTROLS TOBACCO SALES TO YOUTHS (15–24 YEARS)	1. Officials of the NDLEA		18	72.0	NO
	2. Officials of the NCS		0	0.0	
	3. Officials of the NPF		1	4.0	
	4. Taskforce constituted by the state ministry of health		6	24.0	

(n=25; N=25)					
TIME FRAME WITHIN WHICH TO COMMENCE THE ENFORCEMENT OF THE LAW THAT CONTROLS TOBACCO SALES TO YOUTHS (15–24 YEARS) (n=25; N=25)	1. 3 months		19	76.0	YES
	2. 6 months		3	12.0	
	3. 9 months		2	8.0	
	4. 12 months		1	4.0	

Action statement 1.1: Control tobacco accessibility to youths (15–24 years) (N= 25)

As illustrated in Table 6.2, 100% consensus (n=25; N=25) was reached that the control of tobacco accessibility to youths would help in improving their lifestyle and should be included in the action plan. Although consensus was reached on all the methods proposed to achieve action statement 1.1, a consensus was not reached on the responsible person/s to implement the methods to achieve the action statement, neither was there agreement on the time frames within which the actions/objectives should be reached (see Table 6.2).

Method 1.1.1: Develop a policy to control tobacco sales to youths (15–24 years)

As illustrated in Table 6.2, 100% consensus (n=25; N=25) was reached that a policy to control tobacco sales to youths (15–24 years) must be developed.

Method 1.1.2: Present the policy to control tobacco sales to youths (15–24 years) to the state house of assembly through the house of assembly commission

The panellists reached 100% consensus (n=25; N=25) that the policy to control tobacco sales to youths (15–24 years) should be presented to the state house of assembly through the house of assembly commission (see Table 6.2).

Method 1.1.3: Include the policy in the constitution of the state

Table 6.2 indicated that 96% consensus (n=24; N=25) was reached that the developed policy to control tobacco sales to youths (15–24 years) should be included in the constitution of the state.

Method 1.1.4: Ensure enforcement of the law that controls tobacco sales to youths (15–24 years)

As indicated in Table 6.2, panellists reached 100% consensus (n=25; N=25) that the enforcement of the law that controls tobacco sales to youths (15–24 years) must be ensured.

Responsible person/s for methods 1.1.1 – 1.1.4

As is illustrated in Table 6.2, a consensus was not reached on the responsible person/s for the development of a policy to control tobacco sales to youths (15–24 years) (method 1.1.1), or who should be responsible for law enforcement to control tobacco sales to youths (method 1.1.4) (see Table 6.2). There was 92% consensus (n=23; N=25) that the health commissioner should be responsible for the presentation of the policy to the state house of assembly through the house of assembly commission after the finalisation of the policy (method 1.1.2). Moreover, 87.5% consensus (F=21; n=24) was reached that members of the state house of assembly should be responsible for the inclusion of the policy in the constitution of the state (method 1.1.3) (see Table 6.2).

Time frame required to achieve methods 1.1.1 -1.1.4

Panellists reached 75% consensus (n=18; N=24) that the developed policy should be included in the constitution of the state within 6 months after presenting the policy to the state house of assembly (method 1.1.3). Also, 76% consensus (n=19; N=25) was reached that law enforcement to control tobacco sales to youths should commence within 3 months after the policy is included in the constitution of the state (method 1.1.4). A consensus was not reached on the time frame within which the policy to control tobacco sales to youths (15–24 years) should be developed (after acceptance of the strategic action) (method 1.1.1); neither on the time frame within which the policy should be presented to the state house of assembly (method 1.1.2) (see Table 6.2).

Panellists' narrative comments

Only one panellist provided a comment and suggested that:

“A task force constituted by each state government should also be incorporated to supplement the effort of the National drug law enforcement agency towards enforcement of law on control of sales of Tobacco to the youths”.

This comment pertaining to the responsible person/s for the law enforcement for the control of tobacco sales to youths (method 1.1.4) was included in the second draft strategic action plan (see Annexure 19). Thus, the aspects where consensus was not reached, as well as the suggestions of the panellists that was included in the second draft strategic action plan, were re-presented in round 2 (see Table 6.8, second draft strategic action plan).

6.6.1.2 Strategy 2: Introduce interventions to reduce alcohol consumption among youths (15–24 years) by 25% (N=25)

As illustrated in Table 6.3, 100% consensus (n=25; N=25) was reached that the strategy to introduce interventions to reduce alcohol consumption among youths (15–24 years) by 25%, must be included in the strategic action plan.

Table 6.3: Strategy 2: Introduce interventions to reduce alcohol consumption among youths (15-24 years) by 25% (N=25)

		RESPONSE			CONSENSUS REACHED
			n	f=%	
STRATEGY 2 (n=25; N=25)	Introduce interventions to reduce alcohol consumption among youths (15–24 years) by 25%.	Agree	25	100	YES
		Disagree	0	0.0	
ACTION STATEMENT 2.1 (n=25; N=25)	Control alcohol accessibility to youths (15–24 years).	Agree	25	100	YES
		Disagree	0	0.0	
METHOD 2.1.1 (n=25; N=25)	Develop a policy to control alcohol sales to youths (15–24 years).	Agree	24	96.0	YES
		Disagree	1	4.0	
RESPONSIBLE PERSON/S TO DEVELOP A POLICY TO CONTROL ALCOHOL SALES TO YOUTHS (15–24 YEARS) (n=24; N=25)	1. A committee of two doctors working in the public health department and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state		0	0.0	NO

	ministry of health, Nigeria.				
	2. The commissioner of health, assisted by a committee of two doctors working in the public health department and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		15	60.0	
	3. A committee of two doctors working in the public health department and two public health nurses appointed by the director of health, local government service, Nigeria.		4	16.0	
	4. Two health practitioners (one public health nurse and one doctor), seconded by the directors of the non-communicable disease division (NCDD), from the ministry of health		1	4.0	

	and the local government service, Nigeria.				
	5. Educators from the CICMCN assisted by educators from Mould Africa; who work with youth on a daily basis.		3	12.0	
	6. Director of the department of community development, local government service assisted by community liaison officers from the local government.		1	4.0	
TIME FRAME WITHIN WHICH TO DEVELOP A POLICY TO CONTROL ALCOHOL SALES TO YOUTHS (15–24 YEARS) (n=24; N=25)	1. 6 months		15	62.5	NO
	2. 9 months		4	16.7	
	3. 12 months		5	20.8	
	4. 18 months		0	0.0	
METHOD 2.1.2 (n=25; N=25)	Present the policy to control alcohol sales to youths (15–24 years) to the state house of assembly through the house of assembly commission.	Agree	24	96.0	YES
		Disagree	1	4.0	
RESPONSIBLE PERSON/S TO PRESENT THE POLICY TO CONTROL ALCOHOL	1. The commissioner for health		21	87.4	YES
	2. Supervisor for health		1	4.2	

SALES TO YOUTHS (15–24 YEARS) TO THE STATE HOUSE OF ASSEMBLY THROUGH THE HOUSE OF ASSEMBLY COMMISSION (n=24; N=25)	3. Local government legislators		1	4.2	
	4. Director of the department of community development		1	4.2	
TIME FRAME WITHIN WHICH TO PRESENT THE POLICY TO CONTROL ALCOHOL SALES TO YOUTHS (15–24 YEARS) TO THE STATE HOUSE OF ASSEMBLY (n=24; N=25)	1. 3 months		17	70.8	NO
	2. 6 months		6	25.0	
	3. 9 months		0	0.0	
	4. 12 months		1	4.2	
METHOD 2.1.3 (n=25; N=25)	Include the policy in the constitution of the state.	Agree	23	92.0	YES
		Disagree	2	8.0	
RESPONSIBLE PERSON/S TO INCLUDE THE POLICY IN THE CONSTITUTION OF THE STATE (n=23; N=25)	1. Members of the state house of assembly		20	87.0	YES
	2. The commissioner for health		0	0.0	
	3. Supervisor for health		0	0.0	
	4. Local government legislators		0	0.0	
	5. State house of assembly commission		3	13.0	
TIME FRAME WITHIN WHICH TO INCLUDE THE POLICY IN THE CONSTITUTION OF THE STATE (n=24; N=25)	1. 6 months		19	79.1	YES
	2. 9 months		4	16.7	
	3. 12 months		1	4.2	
	4. 18 months		0	0.0	
METHOD 2.1.4 (n=25; N=25)	Ensure enforcement of the law that controls	Agree	24	96.0	YES
		Disagree	1	4.0	

	alcohol sales to youths (15–24 years)				
RESPONSIBLE PERSON/S TO ENFORCE THE LAW THAT CONTROLS ALCOHOL SALES TO YOUTHS (15–24 YEARS) (n=24; N=25)	1. Officials of the NDLEA		13	54.2	NO
	2. Officials of NCS		0	0.0	
	3. Officials of the NPF		2	8.3	
	4. Taskforce constituted by the state ministry of health		9	37.5	
TIME FRAME WITHIN WHICH TO ENFORCE THE LAW THAT CONTROLS ALCOHOL SALES TO YOUTHS (15–24 YEARS) (n=24; N=25)	1. 3 months		17	70.8	NO
	2. 6 months		4	16.7	
	3. 9 months		1	4.2	
	4. 12 months		2	8.3	

Action statement 2.1: Control alcohol accessibility to youths (15–24 years) (N=25)

As indicated in Table 6.3, 100% consensus (n=25; N=25) was reached that the control of alcohol accessibility to youths (15–24 years) would be of benefit to the overall health of youths and should be included in the strategic action plan. Although consensus was attained on all the proposed methods to achieve action statement 2.1 (see Table 6.3), consensus was not reached on the responsible person/s to implement the methods to accomplish the action statement, nor on the time frames within which the objectives of the action statements would be reached (see Table 6.3).

Method 2.1.1: Develop a policy to control alcohol sales to youths (15–24 years)

As indicated in Table 6.3, 96% consensus (n=24; N=25) was reached that a policy to control alcohol sales to youths (15–24 years) must be developed.

Method 2.1.2: Present the policy to control alcohol sales to youths (15–24 years) to the state house of assembly through the house of assembly commission

Ninety-six percent consensus (96%; n=24; N=25) was attained that the policy to control alcohol sales to youths (15–24 years) should be presented to the state house of assembly through the house of assembly commission after finalising the policy (see Table 6.3).

Method 2.1.3: Include the policy in the constitution of the state

As illustrated in Table 6.3, 92% consensus (n=23; N=25) was reached that the policy developed to control alcohol sales to youths (15–24 years) must be included in the constitution of the state after its presentation to the state house of assembly.

Method 2.1.4: Ensure enforcement of the law that controls alcohol sales to youths (15–24 years)

Ninety-six percent (96%; n=24; N=25) consensus was reached that enforcement of the law that controls alcohol sales to youths (15–24 years) must be guaranteed (see Table 6.3).

Responsible person/s for methods 2.1.1 – 2.1.4

Table 6.3 indicated that consensus was not reached by the panellists pertaining to who the responsible person/s should be to develop the policy to control alcohol sales to youths (15–24 years) (method 2.1.1), or who should ensure enforcement of the law controlling alcohol sales to youths (15–24 years) (method 2.1.4). Panellists reached 87.4% consensus (F=21; n=24; N=25) that the health commissioner should present the policy to the state house of assembly through the house of assembly commission (method 2.1.2), and 87% consensus was reached (F=20; n=23; N=25) that members of the state house of assembly should include the policy in the constitution of the state (method 2.1.3) (see Table 6.3).

Time frames to achieve methods 2.1.1 – 2.1.4

As indicated in Table 6.3, consensus was not attained on the time frame within which to develop a policy to control alcohol sales to youths (15–24 years) (method 2.1.1), and when to present the policy to the state house of assembly (method 2.1.2). Consensus was also not reached on the time frame within which to commence enforcement of the law that controls alcohol sales to youths (15–24 years) (method 2.1.4). However, 79.1% consensus (n=19; N=24) was reached that the policy must be included in the constitution of the state within 6 months after the policy is finalised (method 2.1.3) (see Table 6.3).

6.6.1.3 Strategy 3: Introduce interventions to improve healthy diets among youths (15–24 years) (N=25)

As illustrated in Table 6.4, panellist reached consensus (100%; n=25; N=25) that the strategy to introduce interventions to improve healthy diets among youths would help promote healthy eating patterns among youths and must be included in the strategic action plan.

Table 6.4: Strategy 3: Introduce interventions to improve healthy diets among youths (15–24 years) (N=25)

		RESPONSE			CONSENSUS REACHED
			n	f=%	
STRATEGY 3 (n=25; N=25)	Introduce interventions to improve healthy diets among youths (15–24 years).	Agree	25	100	YES
		Disagree	0	0.0	
ACTION STATEMENT 3.1 (n=25; N=25)	Mandate nutrition labelling of food products by food processing industries.	Agree	24	96.0	YES
		Disagree	1	4.0	
METHOD 3.1.1		Agree	24	96.0	YES

(n=25; N=25)	Develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries.	Disagree	1	4.0	
RESPONSIBLE PERSON/S TO DEVELOP A POLICY THAT MANDATES NUTRIENT LISTS TO APPEAR ON ALL PACKAGED FOODS BY FOOD PROCESSING INDUSTRIES (n=24; N=25)	1. A committee of two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		4	16.7	NO
	2. The commissioner of health assisted by a committee of two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		15	62.5	

	3. A committee of two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of health, local government service Nigeria.		0	0.0	
	4. Two health practitioners (one public health nurse and one doctor), seconded by the directors of the non-communicable disease division (NCDD), from the state ministry of health and from the local government service.		0	0.0	
	5. Educators from the CICMCN assisted by educators from Mould Africa; who work with youth on a daily basis.		3	12.5	
	6. Director of the department of community development, local government service assisted by community		2	8.3	

	liaison officers from the local government.				
TIME FRAME WITHIN WHICH TO DEVELOP A POLICY THAT MANDATES NUTRIENT LISTS TO APPEAR ON ALL PACKAGED FOODS BY FOOD PROCESSING INDUSTRIES (n=25; N=25)	1. 3 months		12	48.0	NO
	2. 6 months		5	20.0	
	3. 9 months		6	24.0	
	4. 12 months		2	8.0	
METHOD 3.1.2 (n=25; N=25)	Present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly through the house of assembly commission.	Agree	24	96.0	YES
		Disagree	1	4.0	
RESPONSIBLE PERSON/S TO PRESENT THE POLICY THAT MANDATES NUTRIENT LISTS TO APPEAR ON ALL PACKAGED FOODS BY FOOD PROCESSING INDUSTRIES TO THE STATE HOUSE OF ASSEMBLY (n=24; N=25)	1. The commissioner for health		21	87.5	YES
	2. Supervisor for health		2	8.3	
	3. Local government legislators		0	0.0	
	4. Director of the department of community development		1	4.2	
TIME FRAME WITHIN WHICH TO PRESENT THE POLICY THAT MANDATES	1. 3 months		10	41.6	NO
	2. 6 months		13	54.2	
	3. 9 months		0	0.0	

NUTRIENT LISTS TO APPEAR ON ALL PACKAGED FOODS BY FOOD PROCESSING INDUSTRIES TO THE STATE HOUSE OF ASSEMBLY (n=24; N=25)	4. 12 months		1	4.2	
METHOD 3.1.3 (n=25; N=25)	Facilitate inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state.	Agree	23	92.0	YES
Disagree		2	8.0		
RESPONSIBLE PERSON/S TO INCLUDE THE POLICY THAT MANDATES NUTRIENT LISTS TO APPEAR ON ALL PACKAGED FOODS BY FOOD PROCESSING INDUSTRIES IN THE CONSTITUTION OF THE STATE (n=23; N=25)	1. Members of the state house of assembly		18	78.2	YES
2. The commissioner for health		2	8.7		
3. Supervisor for health		2	8.7		
4. Local government legislators		0	0.0		
5. State house of assembly commission		1	4.4		
TIME FRAME WITHIN WHICH TO INCLUDE THE POLICY THAT MANDATES NUTRIENT LISTS TO APPEAR ON ALL PACKAGED FOODS BY FOOD PROCESSING INDUSTRIES IN THE	1. 6 months		18	75.0	YES
2. 9 months		3	12.5		
3. 12 months		3	12.5		
4. 18 months		0	0.0		

CONSTITUTION OF THE STATE (n=24; N=25)					
METHOD 3.1.4 (n=25; N=25)	Ensure enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries	Agree	24	96.0	YES
		Disagree	1	4.0	
RESPONSIBLE PERSON/S TO ENFORCE THE LAW THAT MANDATES NUTRIENT LISTS TO APPEAR ON ALL PACKAGED FOODS BY FOOD PROCESSING INDUSTRIES (n=24; N=25)	1. Officials of the NAFDAC		8	33.3	NO
	2. Officials of the NCS		0	0.0	
	3. Taskforce constituted by the state ministry of health		16	66.7	
TIME FRAME WITHIN WHICH TO ENFORCE THE LAW THAT MANDATES NUTRIENT LISTS TO APPEAR ON ALL PACKAGED FOODS BY FOOD PROCESSING INDUSTRIES (n=24; N=25)	1. 6 months		18	75.0	YES
	2. 9 months		3	12.5	
	3. 12 months		3	12.5	
	4. 18 months		0	0.0	

Action statement 3.1: Mandate nutrition labelling of food products by food processing industries (N=25)

Table 6.4 indicated that 96% consensus (n=24; N=25) was reached that compulsory nutrition labelling of food products by food processing industries would help in promoting healthy diet choices among youths (15–24 years) and should be included in the strategic

action plan. Panellists reached consensus on all the proposed methods to achieve the aims of action statement 3.1, but did not achieve consensus on the person/s responsible for implementing the methods and some of the proposed time frames within which the methods should be achieved (see Table 6.4).

Method 3.1.1: Develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries

As demonstrated in Table 6.4, 96% consensus (n=24; N=25) was reached that the policy which mandates nutrient lists to appear on all packaged foods by food processing industries must be developed.

Method 3.1.2: Present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly through the house of assembly commission

Pertaining to the presentation of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly, 96% consensus (n=24; N=25) was reached (see Table 6.4).

Method 3.1.3: Facilitate inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state

Table 6.4 indicated that 92% consensus (n=23; N=25) was reached that the policy developed to mandate nutrient lists to appear on all packaged foods must be included in the constitution of the state.

Method 3.1.4: Ensure enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries

In Table 6.4, it is indicated that panellists reached 96% consensus (n=24; N=25) that the law mandating nutrient lists to appear on all packaged foods by food processing industries must be enforced.

Responsible person/s for methods 3.1.1 – 3.1.4

Panellists did not reach consensus on the responsible person/s to develop the policy that mandates nutrient lists to appear on all packaged foods by food processing industries (method 3.1.1), neither on the person/s who have to ensure enforcement of the law mandating nutrient lists to appear on all packaged foods (method 3.1.4) (see Table 6.4). Consensus was reached (87%; F=21; n=24; N=25) that the commissioner for health should present the policy to the state house of assembly through the house of assembly commission (method 3.1.2). Also, 78.2% consensus (n=18; N=23) was reached that members of the state house of assembly must facilitate the inclusion of the policy in the constitution of the state (method 3.1.3) (see Table 6.4).

Time frame to achieve methods 3.1.1 – 3.1.4

As illustrated in Table 6.4, panellists did not reach consensus on the time frame within which to develop the policy that mandates nutrient lists to appear on all packaged foods by food processing industries (method 3.1.1), or the timeframe within which to present the policy for inclusion in the constitution of the state (method 3.1.2). Consensus (75%; F=18; n=24; N=25) was achieved, indicating that the policy must be included in the constitution of the state within 6 months after the policy has been finalised (method 3.1.3). In addition, 75% consensus (F=18; n=24; N=25) was reached that enforcement of the law that mandates nutrient lists to appear on all packaged foods should commence within 6 months after inclusion of the policy in the constitution of the state (method 3.1.4).

All aspects where consensus was not reached were incorporated in the second draft strategic action plan that was re-presented in round 2 (see Table 6.10, second draft strategic action plan).

6.6.1.4 Strategy 4: Introduce interventions to enhance physical activity among youths (15–24 years) (N=25)

Panellists reached 100% consensus (n=25; N=25) that the strategy to introduce interventions to enhance physical activity among youths (15–24 years) will help to improve youths' health and must be included in the strategic action plan (see Table 6.5).

Table 6.5: Strategy 4: Introduce interventions to enhance physical activity among youths (15–24 years) (N=25)

		RESPONSE			CONSENSUS REACHED
			n	f =%	
STRATEGY 4 (n=25; N=25)	Introduce interventions to enhance physical activity among youths (15–24 years).	Agree	0.0	100	YES
		Disagree	0	0.0	
ACTION STATEMENT 4.1 (n=25; N=25)	Improve physical activity among youths (15–24 years).	Agree	25	100	YES
		Disagree	0	0.0	
METHOD 4.1.1 (n=25; N=25)	Develop a sports competition/recreation programmes quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion.	Agree	25	100	YES
		Disagree	0	0.0	
RESPONSIBLE PERSON/S TO DEVELOP A SPORTS COMPETITION/RECREATION PROGRAMMES QUARTERLY, WITH	1. A committee of two doctors working in the public health department, two sports scientists and two public health nurses		2	8.0	NO

ATTACHED INCENTIVES TO ENCOURAGE YOUNG PEOPLE TO PARTICIPATE MORE IN PHYSICAL ACTIVITY IN ORDER TO ENSURE HEALTH PROMOTION (n=25; N=25)	appointed by the director of the non-communicable disease division (NCDD), state ministry of health and state ministry of youth and sports development, Nigeria.			
	2. The commissioner of health, assisted by a committee of two doctors working in the public health department, two sports scientists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		5	20.0
	3. A committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.		2	8.0
	4 Two health practitioners (one public health nurse and one doctor), seconded by the directors of the non-communicable disease division (NCDD), from state ministry of		0	0.0

	health and the local government service, Nigeria.				
	5. The commissioner for education assisted by a committee of school principals and proprietors appointed by the director of basic and secondary education, state ministry of education, Nigeria.		1	4.0	
	6. The commissioner for youth and sports development assisted by a committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.		12	48.0	
	7. A group of 10 volunteer youths (aged 15–24 years) facilitated by the director of sport, state ministry of youth and sports development, Nigeria.		3	12.0	
TIME FRAME WITHIN WHICH TO DEVELOP A SPORTS COMPETITION/RECREATIO	1. 6 months		20	80.0	YES
	2. 9 months		3	12.0	

N PROGRAMMES QUARTERLY, WITH ATTACHED INCENTIVES TO ENCOURAGE YOUNG PEOPLE TO PARTICIPATE MORE IN PHYSICAL ACTIVITY IN ORDER TO ENSURE HEALTH PROMOTION (N=25)	3. 12 months		2	8.0	
	4. 18 months		0	0.0	
METHOD 4.1.2 (n=25; N=25)	Present a budget on building recreation centres, organising sports/events on physical activity and incentives to encourage young people to participate more in physical activity to the state governor through the ministry of youth and sports development.	Agree	25	100	YES
		Disagree	0	0.0	
RESPONSIBLE PERSON/S TO PRESENT A BUDGET ON BUILDING RECREATION CENTRES, ORGANISING SPORTS/EVENTS ON PHYSICAL ACTIVITY AND INCENTIVES TO ENCOURAGE YOUNG PEOPLE PARTICIPATE MORE IN PHYSICAL ACTIVITY TO THE STATE GOVERNOR (n=25; N=25)	1. The commissioner for health		4	16.0	YES
	2. Supervisor for health		0	0.0	
	3. Local government legislators		0	0.0	
	4. Director of the department of community development		0	0.0	
	5. Commissioner for education		0	0.0	
	6. Commissioner for youth and sports development		21	84.0	
	1. 3 months		17	68.0	NO

TIME FRAME WITHIN WHICH TO RESENT A BUDGET ON BUILDING RECREATION CENTRES, ORGANISING SPORTS/EVENTS ON PHYSICAL ACTIVITY AND INCENTIVES TO THE STATE GOVERNOR (n=25; N=25)	2. 6 months		3	12.0	
	3. 9 months		2	8.0	
	4. 12 months		3	12.0	

Action statement 4.1: Improve physical activity among youths (15–24 years)

As is indicated in Table 6.5, 100% (n=25; N=25) consensus was reached that physical activity must be improved among youths (15–24 years) to promote healthy living. Although consensus was reached that all the proposed methods would help achieve action statement 4.1, consensus was not attained on the person/s suggested to take responsibility to implement the methods, neither on some time frames within which the actions/objectives should be reached.

Method 4.1.1: Develop sports competition/recreation programmes quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion

One hundred percent (100%; n=25; N=25) consensus was reached indicating that quarterly sports competition/recreation programmes, with attached incentives, must be developed in order to encourage young people to participate in physical activity to ensure health promotion (see Table 6.5).

Method 4.1.2: Present a budget to provide access to recreation centres, organising sports/events and incentives to encourage young people to participate in physical activity, to the state governor through the ministry of youth and sports development

As illustrated in Table 6.5, 100% consensus (n=25; N=25) was reached that a budget to provide access to recreation centres, organising sports/events and incentives to encourage young people to participate in physical activity and improve their lifestyle, must be presented to the state governor through the ministry of youth and sports development.

Responsible person/s for methods 4.1.1 – 4.1.2

Although consensus was not reached the person/s responsible for developing sports competition/recreation programmes (method 4.1.1), panellists reached 84% consensus (n=21; N=25) that the commissioner for youth and sports development should present the budget to the state governor, through the ministry of youth and sports development (method 4.1.2) (see Table 6.5).

Time frames to achieve methods 4.1.1 – 4.1.2

Eighty percent consensus (80%; n=20; N=25) was reached that within 6 months after the strategic action plan is approved, sports competition/recreation programmes need to be developed. The sports competition/recreation programmes are to encourage young people to participate in physical activity in order to improve their lifestyle (method 4.1.1). Consensus was not achieved on the timeframe within which to present the budget to the state governor (method 4.1.2) (see Table 6.5).

6.6.1.5 Strategy 5: Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles (N=25)

As indicated in Table 6.6, 100% (n=25; N=25) consensus was reached that the strategy to implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles, must be included in the strategic action plan.

Table 6.6: Strategy 5: Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles (N=25)

		RESPONSE			CONSENSUS REACHED
			n	f=%	
STRATEGY 5 (n=25; N=25)	Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles.	Agree	25	100	YES
		Disagree	0	0.0	
ACTION STATEMENT 5.1 (n=25; N=25)	Prioritise a health promotion curriculum on healthy lifestyle at all levels of education that is focused on: Smoking	Agree	25	100	YES
		Disagree	0	0.0	
	Alcohol usage	Agree	24	96.0	
		Disagree	1	4.0	
	Physical activity	Agree	25	100	
		Disagree	0	0.0	

	Healthy diets	Agree	25	100	
		Disagree	0	0.0	
METHOD 5.1.1 (n=25; N=25)	Develop a curriculum that mandate the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention.	Agree	25	100	YES
		Disagree	0	0.0	
RESPONSIBLE PERSON/S TO DEVELOP A CURRICULUM THAT MANDATE THE COMPULSORY INCLUSION OF ALL ASPECTS PERTAINING TO HEALTHY LIFESTYLES AND DISEASE PREVENTION (n=25; N=25)	1. A committee of health educators coordinated by the director of education planning, research and development, state ministry of education Nigeria.		9	36.0	NO
	2. A committee of school principals and proprietors constituted by the director of basic and secondary education, state ministry of education Nigeria.		0	0.0	
	3. Ad-hoc committee of curriculum development experts constituted by the deputy director of NUC Nigeria.		0	0.0	

	4. The director, NUC Nigeria, assisted by an ad-hoc committee of curriculum development experts, the director of education planning, research and development, state ministry of education, the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		8	32.0	
	5. Ad-hoc committee of curriculum development experts constituted by the deputy director of NUC Nigeria, seconded by the commissioner for health, and the commissioner for education, Nigeria.		8	32.0	
TIME FRAME WITHIN WHICH TO DEVELOP A CURRICULUM THAT MANDATE THE COMPULSORY INCLUSION OF ALL ASPECTS PERTAINING TO HEALTHY LIFESTYLES AND DISEASE PREVENTION (n=25; N=25)	1. 6 months		17	68.0	NO
	2. 9 months		1	4.0	
	3. 12 months		5	20.0	
	4. 18 months		2	8.0	

METHOD 5.1.2. (n=25; N=25)	Develop electronic media-based health promotion activities (health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools using: Social media	Agree	25	100	YES
		Disagree	0	0.0	
	Television programmes/advertisement	Agree	25	100	
		Disagree	0	0.0	
	Radio jingles	Agree	25	100	
		Disagree	0	0.0	
	Internet pop-up messages	Agree	23	92.0	
		Disagree	2	8.0	
RESPONSIBLE PERSON/S FOR THE DEVELOPMENT OF ELECTRONIC MEDIA-BASED HEALTH PROMOTION ACTIVITIES (HEALTH CLUBS, TALK SHOWS, HEALTH DEBATES) FOR YOUTHS ON LIFESTYLE'S CONNECTION TO NCDs IN ALL SCHOOLS (n=25; N=25)	1. A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education Nigeria.		3	12.0	NO
	2. A committee of educators (Qualified teachers and lecturers) organised by the director of education planning, research and development, state ministry of education and director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		5	20.0	

	<p>3. A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education and director of the non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, NBC, state ministry of information and culture Nigeria.</p>		6	24.0	
	<p>4. A team of online peer educators constituted by the director of education planning, research and development, state ministry of education and director of the non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, NBC, state ministry of information and culture Nigeria.</p>		6	24.0	
	<p>5. An ad-hoc committee on media communication strategy constituted by the director, NBC, state</p>		0	0.0	

	ministry of information and culture Nigeria.				
	6. A committee of adequate health educators appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		0	0.0	
	7. The director, NBC, state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.		5	20.0	
TIME FRAME WITHIN WHICH ELECTRONIC MEDIA-BASED HEALTH PROMOTION ACTIVITIES (HEALTH CLUBS, TALK SHOWS, HEALTH DEBATES)	1. 3 months		8	32.0	NO
	2. 6 months		11	44.0	
	3. 9 months		3	12.0	
	4. 12 months		3	12.0	

<p>FOR YOUTHS ON LIFESTYLE'S CONNECTION TO NCDs IN ALL SCHOOLS IS DEVELOPED AND FINALISED (n=25; N=25)</p>					
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Action statement 5.1: Prioritise a health promotion curriculum on healthy lifestyle at all levels of education that is focused on smoking, alcohol use, physical activity and healthy diets

Consensus was reached that a health promotion curriculum must be prioritised at all levels of education, and it must be included in the strategic action plan (see Table 6.6). The health promotion curriculum must be focused on smoking (100% consensus; n=25; N=25), alcohol use (96% consensus; n=24; N=25), physical activity (100% consensus; n=25; N=25), and healthy diets (100% consensus; n=25; N=25).

Method 5.1.1: Develop a curriculum that mandates the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention

One hundred percent (100%; n=25; N=25) consensus was reached that a curriculum that mandates the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention should be developed (see Table 6.6).

Method 5.1.2: Develop electronic media-based health promotion activities (health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools using social media, television programmes/advertisement, radio jingles and internet pop-up messages

Consensus was reached that electronic media must be used to promote health activities (health clubs, talk shows, health debates) among youths. It was agreed that the health

promotion activities must be developed in all schools through the use of social media (100% consensus; n=25; N=25). These activities must be focused on the connection between lifestyle and NCDs. Television programmes/advertisement (100% consensus; n=25; N=25), radio jingles (100% consensus; n=25; N=25), and internet pop-up messages (92% consensus; n=23; N=25) (see Table 6.6) must be utilised.

Responsible person/s for methods 5.1.1 – 5.1.2

Consensus was not reached on who should be responsible for the development of a curriculum with mandatory contents on healthy lifestyles and the prevention of disease (method 5.1.1); neither who should take responsibility for the development of the health promotion activities that must focus on the relationship between lifestyle and NCDs in all schools (method 5.1.2) (see Table 6.6).

Time frames to achieve methods 5.1.1 – 5.1.2

In Table 6.5, it is indicated that consensus was not reached regarding the time frame within which a curriculum with mandatory contents on healthy lifestyles and the prevention of disease should be developed (method 5.1.1). Also, consensus was not attained on when to develop health promotion activities that must focus on the relationship between lifestyle and NCDs in all schools, using electronic media (method 5.1.2) (see Table 6.6).

6.6.1.6 Strategy 6: Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others (N=25)

As indicated in Table 6.7, 100% consensus (n=25; N=25) was reached that a system to secure counselling services to youth (15–24 years) and offer health education to their significant others must be implemented in order to improve youths' lifestyle (see Table 6.7).

Table 6.7: Strategy 6: Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others (N=25)

		RESPONSE			CONSENSUS REACHED
			n	f =%	
STRATEGY 6 (n=25; N=25)	Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others.	Agree	25	100	YES
		Disagree	0	0.0	
ACTION STATEMENT 6.1 (n=25; N=25)	Constitute a support group to provide support to youths (15–24 years) who wish to stop smoking, drinking, physical inactivity and an unhealthy diet.	Agree	25	100	YES
		Disagree	0	0.0	
METHOD 6.1.1 (n=25; N=25)	Provide an accessible peer counselling service to youths (15–24 years) who are willing to quit: Smoking	Agree	25	100	YES
		Disagree	0	0.0	
	Alcohol Usage	Agree	25	100	
		Disagree	0	0.0	
	Physical Inactivity	Agree	25	100	
		Disagree	0	0.0	
	Unhealthy Diets	Agree	25	100	
		Disagree	0	0.0	
RESPONSIBLE PERSON/S TO PROVIDE AN ACCESSIBLE PEER COUNSELLING SERVICE TO YOUTHS	1. A committee of six certified health counsellors (one person each who major in psychology, nutrition, health care, counselling,		8	32.0	

(15–24 YEARS) WHO ARE WILLING TO QUIT SMOKING, ALCOHOL CONSUMPTION, UNHEALTHY DIETS AND PHYSICAL INACTIVITY (n=25; N=25)	nursing and sociology) constituted by the director of HPD, ministry of health Nigeria.				NO
	2. A committee of rehabilitation experts (two doctors, two psychologists, two social workers and two nurses) constituted by the director of rehabilitation unit, ministry of health Nigeria.		2	8.0	
	3. A team of trained peer counsellors constituted by the director of the rehabilitation unit, ministry of health Nigeria.		2	8.0	
	4. Educators from the CICMCN assisted by educators from Mould Africa; who work with youth on a daily basis.		0	0.0	
	5. Director of the department of community development, local government service assisted by community liaison officers from the local government.		0	0.0	
	6. A group of youths, trained as peer counsellors, who volunteer to provide counselling to other		13	52.0	

	<p>youths who wish to stop smoking, drinking, physical inactivity and an unhealthy diet, facilitated by the director of sport, state ministry of youth and sports development, Nigeria.</p>				
<p>TIME FRAME WITHIN WHICH TO PROVIDE AN ACCESSIBLE PEER COUNSELLING SERVICE TO YOUTHS (15–24 YEARS) WHO ARE WILLING TO QUIT SMOKING, ALCOHOL CONSUMPTION, UNHEALTHY DIETS AND PHYSICAL INACTIVITY.</p> <p>(n=25; N=25)</p>	3 months		9	36.0	NO
	6 months		11	44.0	
	9 months		4	16.0	
	12 months		1	4.0	
<p>ACTION STATEMENT 6.2</p> <p>(n=25; N=25)</p>	<p>Offer education programmes for parents on the importance of youths' healthy lifestyle.</p>	Agree	25	100	YES
		Disagree	0	0.0	
<p>METHOD 6.2.1</p> <p>(n=25; N=25)</p>	<p>Include special information sessions on the importance of youths' healthy lifestyle for all parents by means of: Parents/teachers association (PTA) meetings</p>	Agree	25	100	YES
		Disagree	0	0.0	
	Social media	Agree	25	100	
		Disagree	0	0.0	
	Pamphlets	Agree	25	100	

		Disagree	0	0.0	
	Information sheets attached to students' results	Agree	25	100	
		Disagree	0	0.0	
	TV adverts	Agree	25	100	
		Disagree	0	0.0	
	Radio jingles	Agree	23	92.0	
		Disagree	2	8.0	
	Internet pop-ups and uploaded curriculum on school's website	Agree	25	100	
		Disagree	0	0.0	
RESPONSIBLE PERSON/S FOR THE INCLUSION OF SPECIAL INFORMATION SESSIONS ON THE IMPORTANCE OF YOUTHS' HEALTHY LIFESTYLE FOR ALL PARENTS (n=25; N=25)	1. An ad-hoc committee on media communication strategy constituted by the director, NBC, state ministry of information and culture Nigeria.		2	8.0	NO
	2. A committee of adequate health educators appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		2	8.0	
	3. The director, NBC, state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by health a committee of educators (Qualified teachers and		17	68.0	

	lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.				
	4. A committee of school principals and proprietors constituted by the director of basic and secondary education, state ministry of education Nigeria.		2	8.0	
	5. Four members of the PTA executives invited by the chairman, PTA.		2	8.0	
TIME FRAME WITHIN WHICH TO INCLUDE SPECIAL INFORMATION SESSIONS ON THE IMPORTANCE OF YOUTHS' HEALTHY LIFESTYLE FOR ALL PARENTS (n=25; N=25)	1. 3 months		14	56.0	NO
	2. 6 months		8	32.0	
	3. 9 months		2	8.0	
	4. 12 months		1	4.0	
ACTION STATEMENT 6.3 (n=25; N=25)	Educate families and communities on the need for youths to maintain a healthy lifestyle using various means.	Agree	25	100	YES
		Disagree	0	0.0	
METHOD 6.3.1 (n=25; N=25)	Educate families and communities on the need for youths to maintain a healthy lifestyle (15–24 years) via attractive advertisements on	Agree	25	100	YES
		Disagree	0	0.0	

	TV, radio jingles and special announcements at social functions.				
RESPONSIBLE PERSON/S FOR THE EDUCATION OF FAMILIES AND COMMUNITIES ON THE NEED FOR YOUTHS TO MAINTAIN A HEALTHY LIFESTYLE (15–24 YEARS) (n=25; N=25)	1. An ad-hoc committee on media communication strategy constituted by the director, NBC, state ministry of information and culture Nigeria.		2	8.0	NO
	2. A committee of community health educators appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.		1	4.0	
	3. The director, NBC, state ministry of information and culture, assisted a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.		6	24.0	
	4. Director of the department of community development, local government service assisted by community liaison officers from the local government and a committee of community health educators appointed		6	24.0	

	by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.				
	5. A committee of community frontline officers including 1 royal father, 2 Chiefs constituted by the state commissioner for local government and chieftaincy affairs, assisted by five representatives from the community landlord association constituted by the state chairman, landlord association.		10	40.0	
TIME FRAME WITHIN WHICH TO EDUCATE FAMILIES AND COMMUNITIES ON THE NEED FOR YOUTHS TO MAINTAIN A HEALTHY LIFESTYLE (15–24 YEARS) (n=25; N=25)	1. 3 months		15	60.0	NO
	2. 6 months		7	28.0	
	3. 9 months		3	12.0	
	4. 12 months		0	0.0	

Action statement 6.1: Constitute a support group to provide support to youths (15–24 years) who wish to stop smoking, drinking, physical inactivity and an unhealthy diet (see Table 6.7)

Table 6.7 indicated that 100% consensus (n=25; N=25) was reached that a support group for youths (15–24 years) who wish to stop an unhealthy lifestyle must be constituted

(action statement 6.1). The action statement was considered important and must be included in the action plan (see Table 6.7).

Method 6.1.1: Provide an accessible peer counselling service to youths (15–24 years) who are willing to quit smoking, alcohol usage, physical inactivity and unhealthy diets

One hundred percent consensus (100%; n=25; N=25) was reached that youths (15–24 years) who are keen on quitting unhealthy lifestyle behaviour, such as smoking, alcohol use, physical inactivity and unhealthy diets, must be provided with an accessible peer counselling service (see Table 6.7).

Responsible person/s for method 6.1.1

As indicated in Table 6.7, consensus was not reached on the person/s responsible to provide peer counselling service to young people (15–24 years) who are ready to quit unhealthy lifestyle practices (method 6.1.1). The counselling service must be made easily accessible to them (see Table 6.7).

Time frame to achieve method 6.1.1

As illustrated in Table 6.7, consensus was not attained on the time frame within which to provide an easily available peer counselling service to youths (15–24 years) who are ready to quit an unhealthy lifestyle behaviour (method 6.1.1).

Action statement 6.2: Offer education programmes for parents on the importance of youths' healthy lifestyle (see Table 6.7)

One hundred percent consensus (n=25; N=25) was reached that programmes to educate parents on the importance of youths' healthy lifestyle should be made available using different means (see Table 6.7).

Method 6.2.1: Include special information sessions on the importance of youths' healthy lifestyle for all parents by means of PTA meetings, social media, pamphlet, information sheets attached to students' results, TV adverts, radio jingle, internet pop-ups and uploaded curriculum on school's website

As illustrated in Table 6.7, consensus was reached that special information sessions on the importance of youths' healthy lifestyle must be included for all parents. This should be done by means of PTA meetings (100% consensus; n=25; N=25), social media (100% consensus; n=25; N=25) and pamphlets (100% consensus; n=25; N=25). Other means to include information sessions are via information sheets attached to students' results (100% consensus; n=25; N=25), TV adverts (100% consensus; n=25; N=25), radio jingles (92% consensus; n=23; N=25), internet pop-ups and uploaded curriculum on school's website (100% consensus; n=25; N=25).

Responsible person/s for method 6.2.1

Consensus was not reached on who must take responsibility for including information sessions that focus on the importance of healthy living among youths for all parents by means of PTA meetings, social media, pamphlet, information sheets attached to students' results, TV adverts, radio jingles, internet pop-ups and uploaded curriculum on school's website (method 6.2.1) (see Table 6.7).

Time frame to achieve method 6.2.1

Table 6.7 indicated that there was no consensus on when to include the special information sessions for all parents to intimate them with the importance of helping youths live a healthy lifestyle by means of PTA meetings, social media, pamphlet, information

sheets attached to students' results, TV adverts, radio jingles, internet pop-ups and uploaded curriculum on school's website (method 6.2.1).

Action statement 6.3: Educate families and communities on the need for youths to maintain a healthy lifestyle using various means (see Table 6.7)

One hundred percent consensus (100%; n=25; N=25) was also reached that programmes to educate families and communities on the importance of youths living a healthy lifestyle should be offered through various means (see Table 6.7).

Method 6.3.1: Educate families and communities on the need for youths to maintain a healthy lifestyle (15–24 years) via attractive advertisements on TV, radio jingles and special announcements at social functions

One hundred percent consensus (n=25; N=25) was reached that the use of attractive advertisements on TV, radio jingles and special announcements at social functions would help to educate families and communities on why youths (15–24 years) should maintain healthy lifestyles (see Table 6.7).

Responsible person/s for method 6.3.1

Table 6.7 indicated that consensus was not reached on who should provide the required information to families and communities on why youths (15–24 years) should live a healthy lifestyle (method 6.3.1).

Time frame to achieve method 6.3.1

In Table 6.7, consensus was not reached on when to start educating families and communities on the need for youths (15–24 years) to live a healthy lifestyle (method 6.3.1).

As described above, all the suggestions received from panellists, as well as all the aspects on which consensus were not reached, were included in the second draft of the strategic action plan. A recruitment letter (see Annexure 9) explaining the process and the involvement required from panellists during the second round was distributed the same way as explained in round 1 (see Section 6.5). All 25 panellists were invited to participate in the second round, and a 100% response rate was achieved. This response rate is excellent, considering that the literature confirmed a response rate for Delphi techniques or consensus-seeking methods to be adequate at 70% (Sumsion 1998 cited in Keeney, Hasson & Mckenna 2011:5).

The data were received as explained in round 1 (see Section 6.5.1), and the analysis was done accordingly (see Section 6.6). The findings of the second Delphi round are discussed in Section 6.7.

6.7 FINDINGS: ROUND 2 (second draft)

The findings of the second round are discussed following the order in which the suggested strategies appeared in the second draft strategic action plan (see Annexure 19).

Note: In an attempt to avoid repetition, all strategies, action statements and methods will be illustrated in Tables 6.8 – 6.13 to ensure completeness, BUT ONLY the findings pertaining to aspects where consensus was not reached, will be discussed in full.

6.7.1 Strategy 1: Initiate interventions to reduce tobacco smoking among youths (15–24 years) by 25%

Action statement (1.1): Control tobacco accessibility to youths (15–24 years) (see Table 6.8)

Methods to control the accessibility of tobacco to youths (see Table 6.8)

Method 1.1.1: Develop a policy to control tobacco sales to youths (15–24 years).

Method 1.1.2: Present the policy to control tobacco sales to youths (15–24 years) to the state house of assembly through the house of assembly commission.

Method 1.1.3: Include the policy in the constitution of the state.

Method 1.1.4: Ensure enforcement of the law that controls tobacco sales to youths (15–24 years).

Responsible person/s (see Table 6.8)

Method 1.1.2: The health commissioner should present the policy to control tobacco sales to youths to the state house of assembly.

Method 1.1.3: Members of the state house of assembly should include the policy to control tobacco sales to youths in the constitution of the state.

Responsible person/s (relating to methods 1.1.1 and 1.1.4)

Method 1.1.1: Consensus was reached (88%; n=22; N=25) that the commissioner for health **must take responsibility to develop the policy to control tobacco sales to youths**. The commissioner of health must be assisted by a committee of two doctors and two public health nurses working in the public health department, appointed by the director of the non-communicable disease division (NCDD), state ministry of health in Nigeria.

Method 1.1.4: 80% consensus (n=20; N=25) was reached that both the officials of the NDLEA and a task force constituted by the state ministry of health must be responsible

for ensuring the **law enforcement** of the control of tobacco sales to youths (see Table 6.8).

Time frame (see Table 6.8)

Method 1.1.3: The policy to control tobacco sales to youths (15–24 years) should be included in the constitution of the state within 6 months after presenting the policy to the state house of assembly.

Method 1.1.4: Law enforcement to control tobacco sales to youths (15–24 years) should commence within 3 months after the policy is included in the constitution of the state.

Method 1.1.1: As indicated in Table 6.8, consensus was attained (88%; n=22; N=25) that the **policy to control tobacco sales to youths** should be developed within the period of 6 months after its approval by the ministry of health.

Method 1.1.2: Consensus (96%; n=24; N=25) was reached that the policy must be **presented to the state house of assembly** through the house of assembly commission within 3 months after the development of the policy (see Table 6.8).

Table 6.8: Strategy 1: Initiate interventions to reduce tobacco smoking among youths (15-24 years) by 25% (N=25)

STRATEGY 1: Initiate interventions to reduce tobacco smoking among youths (15–24 years) by 25%. (CONSENSUS REACHED)			
Action statement 1.1: Control tobacco accessibility to youths (15–24 years). (CONSENSUS REACHED)			
Method 1.1.1: Develop a policy to control tobacco sales to youths (15–24 years). (CONSENSUS REACHED)			
Responsible person/s to develop a policy to control tobacco sales to youths (15–24 years). (n=25; N=25)	Responses		Consensus Reached
	n	f = (%)	
1 A committee of two doctors working in the public health department and two public health nurses appointed by the	1	4.0	YES

director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.			
2 The commissioner for health, assisted by a committee of two doctors and two public health nurses working in the public health department appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	22	88.0	
3 A committee of two doctors working in the public health department and two public health nurses appointed by the director of health, local government service.	0	0.0	
4 Two health practitioners (one public health nurse and one doctor), seconded by the directors of the non-communicable disease division (NCDD), each from the state ministry of health and from the local government service.	1	4.0	
5 Educators from the CICMCN assisted by educators from Mould Africa; who work with youth on a daily basis.	0	0.0	
6 Director of the department of community development, local government service assisted by community liaison officers from the local government.	1	4.0	
TIME FRAME WITHIN WHICH TO DEVELOP AND FINALISE THE POLICY TO CONTROL TOBACCO SALES TO YOUTHS (15–24 YEARS). (n=25; N=25)			
6 months	22	88.0	YES
9 months	3	12.0	
12 months	0	0.0	
18 months	0	0.0	
Method 1.1.2: Present the policy to control tobacco sales to youths (15–24 years) to the state house of assembly through the house of assembly commission. (CONSENSUS REACHED)			
Responsible person/s: The health commissioner. (CONSENSUS REACHED)			
		Responses	Consensus
		n	f = (%)
			Reached

TIME FRAME WITHIN WHICH TO PRESENT THE POLICY TO CONTROL TOBACCO SALES TO YOUTHS (15–24 YEARS) TO THE STATE HOUSE OF ASSEMBLY (n=25; N=25)			
3 months	24	96.0	YES
6 months	1	4.0	
9 months	0	0.0	
12 months	0	0.0	
Method 1.1.3: Include the policy in the constitution of the state. (CONSENSUS REACHED)			
Responsible person/s: Members of the state house of assembly. (CONSENSUS REACHED)			
Time frame: 6 months. (CONSENSUS REACHED)			
Method 1.1.4: Ensure enforcement of the law that controls tobacco sales to youths (15–24 years). (CONSENSUS REACHED)			
RESPONSIBLE PERSON/S TO ENSURE ENFORCEMENT OF THE LAW THAT CONTROLS TOBACCO SALES TO YOUTHS (15–24 YEARS) (n=25; N=25)	Responses		Consensus Reached
	n	f = (%)	
1 Officials of the NDLEA	1	4.0	YES
2 Officials of the NCS	0	0.0	
3 Officials of the NPF	1	4.0	
4 Taskforce constituted by the state ministry of health.	3	12.0	
5 A combination of officials of the NDLEA and taskforce constituted by the state ministry of health.	20	80.0	
Time frame: 3 months (CONSENSUS REACHED)			

6.7.2 Strategy 2: Introduce interventions to reduce alcohol consumption among youths (15–24 years) by 25% (N=25)

Action statement 2.1: Control alcohol accessibility to youths (15–24 years) (see Table 6.9)

Methods to control the accessibility of alcohol to youths (see Table 6.9)

Method 2.1.1: Develop a policy to control alcohol sales to youths (15–24 years).

Method 2.1.2: Present the policy to control alcohol sales to youths (15–24 years) to the state house of assembly through the house of assembly commission.

Method 2.1.3: Include the policy in the constitution of the state.

Method 2.1.4: Ensure enforcement of the law that controls alcohol sales to youths (15–24 years).

Responsible person/s (see Table 6.9)

Method 2.1.2: The health commissioner should present the policy to control alcohol sales to youths to the state house of assembly.

Method: 2.1.3: Members of the state house of assembly should include the policy to control alcohol sales to youths in the constitution of the state.

Responsible person/s (relating to methods 2.1.1 and 2.1.4)

Method 2.1.1: Table 6.9 indicates that 80.0% consensus (n=20; N=25) was reached that the **policy to control alcohol sales to youths** (15–24 years) must be developed by the commissioner of health. A committee of two doctors working in the public health department and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health in Nigeria must assist the commissioner of health in developing the policy.

Method 2.1.4: Consensus (84% n=21; N=25) was reached that a combination of officials of the NDLEA and a task force constituted by the state ministry of health should be responsible for ensuring the **law enforcement** of the control of alcohol sales to youths (15–24 years) (see Table 6.9).

Time frame (see Table 6.9)

Method 2.1.3: The **policy to control alcohol sales to youths (15–24 years)** must be included in the constitution of the state within 6 months after the policy is finalised.

Time frame (relating to methods 2.1.1, 2.1.2 and 2.1.4)

Method 2.1.1: Ninety-two percent consensus (92%; n=23; N=25) was reached that the **policy that controls alcohol sales to youths (15–24 years)** must be developed within a period of 6 months after the approval of the strategic action plan by the ministry of health (see Table 6.9).

Method 2.1.2: Consensus (76%; n=19; N=25) was attained that the policy must be **presented to the state house of assembly** within 3 months after the policy is finalised (see Table 6.9).

Method 2.1.4: Consensus was reached (76%; n=19; N=25) that within the period of 3 months, **enforcement of the law that controls alcohol sales to youths (15–24 years)** must commence after its inclusion in the constitution of the state (see Table 6.9).

Table 6.9: Strategy 2: Introduce interventions to reduce alcohol consumption among youths (15–24 years) by 25% (N=25)

STRATEGY 2: Introduce interventions to reduce alcohol consumption among youths (15–24 years) by 25%. (CONSENSUS REACHED)			
Action statement 2.1: Control alcohol accessibility to youths (15–24 years). (CONSENSUS REACHED)			
Method 2.1.1: Develop a policy to control alcohol sales to youths (15–24 years). (CONSENSUS REACHED)			
Responsible person/s to develop a policy to control alcohol sales to youths (15–24 years) (n=25; N=25).	Responses		Consensus Reached
	n	f = (%)	
1 A committee of two doctors working in the public health department and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	0	0.0	YES
2 The commissioner of health, assisted by a committee of two doctors working in the public health department and two public health nurses appointed by the director of the non-	20	80.0	

communicable disease division (NCDD), state ministry of health, Nigeria.			
3 A committee of two doctors working in the public health department and two public health nurses appointed by the director of health, Local government service, Nigeria.	2	8.0	
4 Two health practitioners (one public health nurse and one doctor), seconded by the directors of the non-communicable disease division (NCDD), from the ministry of health and the local government service, Nigeria.	1	4.0	
5 Educators from the CICMCN assisted by educators from Mould Africa; who work with youth on a daily basis.	1	4.0	
6 Director of the department of community development, local government service assisted by community liaison officers from the local government.	1	4.0	
Time frame within which to develop a policy to control alcohol sales to youths (15–24 years). (n=25; N=25)			
6 months	23	92.0	YES
9 months	2	8.0	
12 months	0	0.0	
18 months	0	0.0	
Method 2.1.2: Present the policy to control alcohol sales to youths (15–24 years) to the state house of assembly through the house of assembly commission. (CONSENSUS REACHED)			
Responsible person/s: The health commissioner. (CONSENSUS REACHED)			
		Responses	Consensus Reached
		n	f = (%)
Time frame within which to present the policy to control alcohol sales to youths (15–24 years) to the state house of assembly (n=25; N=25).			
3 months	19	76.0	YES
6 months	5	20.0	
9 months	0	0.0	
12 months	1	4.0	

Method 2.1.3: Include the policy in the constitution of the state. (CONSENSUS REACHED)			
Responsible person/s to include the policy in the constitution of the state: Members of the state house of assembly (CONSENSUS REACHED)			
Time frame within which to include the policy in the constitution of the state: 6 months. (CONSENSUS REACHED)			
Method 2.1.4: Ensure enforcement of the law that controls alcohol sales to youths (15–24 years). (CONSENSUS REACHED)			
Responsible person/s to enforce the law that controls alcohol sales to youths (15–24 years). (n=25; N=25)	Responses		Consensus Reached
	n	f = (%)	
1. Officials of the NDLEA	2	8.0	YES
2. Officials of the NCS	0	0.0	
3. Officials of the NPF	1	4.0	
4. Taskforce constituted by the state ministry of health.	1	4.0	
5. A combination of officials of the NDLEA and taskforce constituted by the state ministry of health.	21	84.0	
Time frame within which to enforce the law that controls alcohol sales to youths (15–24 years) (n=25; N=25).			
3 months	19	76.0	YES
6 months	4	16.0	
9 months	1	4.0	
12 months	1	4.0	

6.7.3 Strategy 3: Introduce interventions to improve healthy diets among youths (15–24 years) (N=25)

Action statement 3.1: Mandate nutrition labelling of food products by food processing industries (see Table 6.10)

Methods to achieve mandatory nutrition labelling of food products by food processing industries (See Table 6.10)

Method 3.1.1: Develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries.

Method 3.1.2: Present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly through the house of assembly commission.

Method 3.1.3: Facilitate inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state.

Method 3.1.4: Ensure enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries.

Responsible person/s (see Table 6.10)

Method 3.1.2: The health commissioner should present the **policy that mandates nutrient lists to appear on all packaged foods by food processing industries** to the state house of assembly.

Method 3.1.3: Members of the state house of assembly must **facilitate the inclusion of the policy in the constitution of the state.**

Responsible person/s (relating to methods 3.1.1 and 3.1.4)

Methods 3.1.1: As illustrated in Table 6.10, 76% consensus (n=19; N=25) was reached that the commissioner of health should be responsible for developing **the policy mandating food processing industries to include nutrient lists on all packaged foods**. The commissioner of health must be assisted by a committee two doctors working in the public health department, two certified dietitians/nutritionists, and two public health nurses that are appointed by the director of the non-communicable disease division (NCDD) state ministry of health in Nigeria.

Methods 3.1.4: Consensus was reached (88%; n=22; N=25) that both the officials of the NDLEA and a taskforce constituted by the state ministry of health must **ensure**

enforcement of the law that mandates nutrient lists to appear on all packaged foods (see Table 6.10).

Time frame (see Table 6.10)

Method 3.1.3: The **policy that mandates nutrient lists to appear on all packaged foods** must be included in the constitution of the state within 6 months after the policy has been finalised.

Method 3.1.4: **Enforcement of the law that mandates nutrient lists to appear on all packaged foods** should commence within 6 months after including the policy in the constitution of the state.

Time frame (relating to methods 3.1.1 and 3.1.2)

Methods 3.1.1: Consensus was reached (84%; n=21; N=25) that within the period of 3 months, the **policy mandating food processing industries to ensure that nutrient lists appear on all packaged foods** must be developed (see Table 6.10).

Methods 3.1.2: Eighty-four percent consensus (84%; n=21; N=25) was reached that the policy must be **presented to the state house of assembly** within 6 months after the policy is finalised (see Table 6.10).

Table 6.10: Strategy 3: Interventions to improve healthy diets among youths (15–24 years) (N=25)

STRATEGY 3: Introduce interventions to improve healthy diets among youths (15–24 years). (CONSENSUS REACHED)			
Action statement 3.1: Mandate nutrition labelling of food products by food processing industries. (CONSENSUS REACHED)			
Method 3.1.1: Develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries. (CONSENSUS REACHED)			
Responsible person/s to develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries (n=25; N=25).	Responses		Consensus Reached
	n	f = (%)	

1	A committee of two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	4	16.0	YES
2	The commissioner of health assisted by a committee two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	19	76.0	
3	A committee of two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of health, local government service Nigeria.	0	0.0	
4	Two health practitioners (one public health nurse and one doctor), seconded by the directors of the non-communicable disease division (NCDD), from the state ministry of health and the local government service.	0	0.0	
5	Educators from the CICMCN assisted by educators from Mould Africa; who work with youth on a daily basis.	1	4.0	
6	Director of the department of community development, local government service assisted by community liaison officers from the local government.	1	4.0	
Time frame within which to develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries (n=25; N=25).				
3 months		21	84.0	YES
6 months		4	16.0	
9 months		0	0.0	
12 months		0	0.0	
Method 3.1.2: Present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly through the house of assembly commission. (CONSENSUS REACHED)				
Responsible person/s: The health commissioner. (CONSENSUS REACHED)				

Time frame within which to present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly (n=25; N=25).	Responses		Consensus reached
	n	f = (%)	
3 months	4	16.0	YES
6 months	21	84.0	
9 months	0	0.0	
12 months	0	0.0	
Method 3.1.3: Facilitate inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state. (CONSENSUS REACHED)			
Responsible person/s: Members of the state house of assembly. (CONSENSUS REACHED)			
Time frame: The health commissioner. (CONSENSUS REACHED)			
Method 3.1.4: Ensure enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries. (CONSENSUS REACHED)			
Responsible person/s to enforce the law that mandates nutrient lists to appear on all packaged foods by food processing industries. (n=25; N=25)	Responses		Consensus reached
	n	f = (%)	
1. Officials of the NAFDAC	2	8.0	YES
2. Officials of the NCS	0	0.0	
3. Taskforce constituted by the state ministry of health.	1	4.0	
4. A combination of officials of the NDLEA and taskforce constituted by the state ministry of health.	22	88.0	
Time frame: 6 months (CONSENSUS REACHED)			

6.7.4 Strategy 4: Introduce interventions to enhance physical activity among youths (15–24 years) (N=25)

Action statement 4.1: Improve physical activity among youths (15–24 years) (see Table 6.11)

Methods to improve physical activity among youths (15–24 years) (see Table 6.11)

Method 4.1.1: Develop a sports competition/recreation programmes quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion.

Method 4.1.2: Present a budget on building recreation centres, organising sports/events on physical activity and incentives to encourage young people to participate more in physical activity to the state governor through the ministry of youth and sports development.

Responsible person/s (see Table 6.11)

Method 4.1.2: The commissioner for youth and sports development should present the budget to the state governor, through the ministry of youth and sports development.

Responsible person/s (relating to method 4.1.1)

Method 4.1.1: Seventy-six percent consensus (76%, n=19; N=25) was reached that the commissioner of health must be responsible for developing **sports competition/recreation programmes quarterly**. Incentives must be attached to the programmes to encourage young people to participate more in physical activity, thereby promoting their health. The commissioner of health must be assisted by a committee of two doctors working in the public health department, two sports scientists and two public health nurses that are appointed by the director of the non-communicable disease division (NCDD), state ministry of health in Nigeria (see Table 6.11).

Time frame (see Table 6.11)

Method 4.1.1: Consensus was reached (80%; n=20; N=25) that the time frame within which to develop **sports competition/recreation programmes** to encourage young people to participate more in physical activity is 6 months.

Time frame (relating to methods 4.1.2)

Method 4.1.2: As illustrated in Table 6.11, 88% consensus (n=22; N=25) was reached that the **budget on building recreation centres and organising sports/events on physical activity** should be presented to the state governor within 3 months after finalising the budget.

Table 6.11: Strategy 4: Interventions to enhance physical activity among youths 15–24 years) (N=25)

STRATEGY 4: Introduce interventions to enhance physical activity among youths (15–24 years). (CONSENSUS REACHED)			
Action statement 4.1: Improve physical activity among youths (15–24 years). (CONSENSUS REACHED)			
Method 4.1.1: Develop a sports competition/recreation programmes quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion. (CONSENSUS REACHED)			
Responsible person/s to develop a sports competition/recreation programmes quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion. (n=25; N=25)	Responses		Consensus reached
	n	f = (%)	
1. A committee of two doctors working in public health department, two sports scientists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health and state ministry of youth and sports development, Nigeria.	0	0.0	YES
2. The commissioner of health assisted by a committee of two doctors working in public health department, two sports scientists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	19	76.0	

3. A committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.	0	0.0	
4. Two health practitioners (one public health nurse and one doctor), seconded by the directors of the non-communicable disease division (NCDD), from state ministry of health and the local government service, Nigeria.	0	0.0	
5. The commissioner for education assisted by a committee of school principals and proprietors appointed by the director of basic and secondary education, state ministry of education, Nigeria.	1	4.0	
6. The commissioner for youth and sports development assisted by a committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.	0	0.0	
7. A group of 10 volunteer youths (aged 15-24 years) facilitated by the director of sport, state ministry of youth and sports development, Nigeria.	5	20.0	

Time frame: 6 months. (CONSENSUS REACHED)

Method 4.1.2 Present a budget on building recreation centres, organising sports/events on physical activity and incentives to encourage young people to participate more in physical activity to the state governor through the ministry of youth and sports development. (CONSENSUS REACHED)

Responsible person/s: Commissioner for youth and sports development. (CONSENSUS REACHED)

Time frame within which to resent a budget on building recreation centres, organising sports/events on physical activity and incentives to the state governor (n=25; N=25).	Responses		Consensus reached
	n	f = (%)	
3 months	22	88.0	YES
6 months	3	12.0	
9 months	0	0.0	
12 months	0	0.0	

6.7.5 Strategy 5: Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles (N=25)

Action statement 5.1: Prioritise a health promotion curriculum on healthy lifestyle at all levels of education that is focused on smoking, alcohol usage, physical activity and healthy diets (see Table 6.12)

Methods to prioritise a health promotion curriculum on healthy lifestyle at all levels of education that is focused on smoking, alcohol usage, physical activity and healthy diets (see Table 6.12)

Method 5.1.1: Develop a curriculum that mandates the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention.

Method 5.1.2: Develop electronic media-based health promotion activities (health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools using the social media, television programmes/advertisement, radio jingles, and internet pop-up messages.

Responsible person/s (relating to methods 5.1.1 and 5.1.2 in the second draft strategic action plan)

Methods 5.1.1: As indicated in Table 6.12, 80% consensus (n=20; N=25) was reached that **a curriculum mandating that all aspects concerning healthy lifestyles and prevention of disease are included in the syllabus** by an ad-hoc committee of curriculum development experts. The ad-hoc committee must be constituted by the deputy director of the NUC and the curriculum development experts should be assisted by the commissioner for health and the commissioner for education in Nigeria.

Methods 5.1.2: 76% consensus (n=19; N=25) was reached that **health promotion activities on the relationship between lifestyle and NCDs** must be developed in all schools by a committee of educators (Qualified teachers and lecturers) constituted by the

director of education planning, research and development in the state ministry of education. The director of the non-communicable disease division (NCDD) state ministry of health and the director, NBC, state ministry of information and culture in Nigeria must collaborate with the committee. These health promotion activities must be electronic media-based (the use of social media, television programmes/advertisement, radio jingles, and internet pop-up messages) (see Table 6.12).

Time frame (relating to methods 5.1.1 and 5.1.2 in the second draft strategic action plan)

Methods 5.1.1: 88% consensus (n=22; N=25) was attained that within 6 months, a **curriculum mandating compulsory inclusion of all aspects relating to healthy lifestyles and disease prevention** must be developed (after its approval by the ministry of education) (see Table 6.12).

Methods 5.1.2: Consensus was reached (76%; n=19; N=25) that **social media-based health promotion activities for youths on lifestyle’s connection to NCDs in all schools** must be finalised within 6 months (after its approval by the ministry of education) (see Table 6.12).

Table 6.12: Strategy 5: Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles (N=25)

STRATEGY 5: Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles. (CONSENSUS REACHED)
Action statement 5.1: Prioritise a health promotion curriculum on healthy lifestyle at all levels of education that is focused on smoking, alcohol usage, physical activity and healthy diets. (CONSENSUS REACHED)

Method 5.1.1: Develop a curriculum that mandates the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention. (CONSENSUS REACHED)

Responsible person/s to develop a curriculum that mandates the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention. (n=25; N=25)	Responses		Consensus reached
	n	f=(%)	
1 A committee of health educators coordinated by the director of education planning, research and development, state ministry of education Nigeria.	2	8.0	YES
2 A committee of school principals and proprietors constituted by the director of basic and secondary education, state ministry of education Nigeria.	0	0.0	
3 Ad-hoc committee of curriculum development experts constituted by the deputy director of NUC Nigeria.	0	0.0	
4 The director, NUC Nigeria, assisted by an ad-hoc committee of curriculum development experts, the director of education planning, research and development, state ministry of education, the director of the Non-communicable disease division (NCDD), state ministry of health, Nigeria.	3	12.0	
5 Ad-hoc committee of curriculum development experts constituted by the deputy director of NUC Nigeria, seconded by the commissioner for health, and the commissioner for education, Nigeria.	20	80.0	

Time frame within which to develop a curriculum that mandate the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention. (n=25; N=25)

Time frame	n	f=(%)	YES
6 months	22	88.0	
9 months	2	8.0	
12 months	1	4.0	
18 months	0	0.0	

Method 5.1.2: Develop electronic media-based health promotion activities (health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools

using the social media, television programmes/advertisement, radio jingles, and internet pop-up messages. (CONSENSUS REACHED)			
Responsible person/s for the development of electronic media-based health promotion activities (health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools. (n=25; N=25)	Responses		Consensus reached
	n	f = (%)	
1 A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education Nigeria.	1	4.0	YES
2 A committee of educators (Qualified teachers and lecturers) organised by the director of education planning, research and development, state ministry of education and director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	1	4.0	
3 A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education and director of the non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, NBC, state ministry of information and culture Nigeria.	19	76.0	
4 A team of online peer educators constituted by the director of education planning, research and development, state ministry of education and director of the non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, NBC, state ministry of information and culture Nigeria.	2	8.0	
5 An ad-hoc committee on media communication strategy constituted by the director, NBC, state ministry of information and culture Nigeria.	0	0.0	
6 A committee of adequate health educators appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	0	0.0	

7	The director, NBC, state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by health a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.	2	8.0	
TIME FRAME within which electronic media-based health promotion activities (health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools is developed and finalised. (n=25; N=25)				
3 months		3	12.0	YES
6 months		19	76.0	
9 months		3	12.0	
12 months		0	0.0	

6.7.6 Strategy 6: Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others (N=25)

Action statement 6.1: Constitute a support group to provide support to youths (15–24 years) who wish to stop smoking, drinking, physical inactivity and an unhealthy diet (see Table 6.13)

Methods to provide support to youth (15–24 years) who wish to stop unhealthy lifestyle (see Table 6.13)

Method 6.1.1: Provide an accessible peer counselling service to youths (15–24 years) who are willing to quit smoking, alcohol usage, physical inactivity, unhealthy diets.

Responsible person/s (relating to method 6.1.1 in the second draft strategic action plan)

Method 6.1.1: As illustrated in Table 6.13, 80% consensus (n=20; N=25) was reached indicating that a **group of youths, trained as peer counsellors, who volunteer to provide counselling to other youths** must be responsible for providing an accessible

peer counselling service to youths (15–24 years) who are willing to quit unhealthy lifestyle practices. The group of youths should be facilitated by the director of sport, state ministry of youth and sports development, in Nigeria.

Time frame (relating to method 6.1.1 in the second draft strategic action plan)

Method 6.1.1: As indicated in Table 6.13, there was 76% consensus (n=19; N=25) that **an accessible peer counselling service to youths who are willing to quit their unhealthy lifestyle** must be provided within 6 months (after the action plan is approved by the ministry of health and ministry of education).

Action statement 6.2: Offer education programmes for parents on the importance of youths' healthy lifestyle (see Table 6.13)

Methods to offer education programmes for parents on the importance of youths' healthy lifestyle (see Table 6.13)

Method 6.2.1: Include special information sessions on the importance of youths' healthy lifestyle for all parents by means of PTA meetings, social media, pamphlets, information sheets attached to students' results, TV adverts and radio jingles.

Responsible person/s (relating to method 6.2.1 in the second draft strategic action plan)

Method 6.2.1: Eighty-four percent consensus (84%; n=21; N=25) was reached that the director of NBC, state ministry of information and culture must be responsible for providing **special information sessions on the importance of youths' healthy lifestyle for all parents**. The director of NBC should be assisted by the director of basic and secondary education, state ministry of education and a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education in Nigeria. Special information should be included in PTA

meetings, social media, pamphlets, information sheets attached to students' results, TV adverts and radio jingles (see Table 6.13).

Time frame (relating to method 6.2.1 in the second draft strategic action plan)

Method 6.2.1: As indicated in Table 6.13, there was 88% consensus (n=22; N=25) that **special information sessions for all parents on the importance of a healthy lifestyle among youths** must begin within 3 months after the action plan has been approved.

Action statement 6.3: Educate families and communities on the need for youths to maintain healthy lifestyle using various means (see Table 6.13)

Methods to educate families and communities on the need for youths to maintain a healthy lifestyle using diverse media (see Table 6.13)

Method 6.3.1: Educate families and communities on the need for youths to maintain a healthy lifestyle (15–24 years) via attractive advertisements on TV, radio jingles and special announcements at social functions.

Responsible person/s (relating to method 6.3.1 in the second draft strategic action plan)

Method 6.3.1: As illustrated in Table 6.13, 76% consensus (n=19; N=25) was reached that a committee of community frontline officers, including one royal father, two Chiefs constituted by the state commissioner for local government and chieftaincy affairs should **provide education for families and communities on the need for youths to maintain a healthy lifestyle**. The committee should be assisted by five representatives from the community landlord association constituted by the state chairman or landlord.

Time frame (relating to method 6.3.1 in the second draft strategic action plan)

Method 6.3.1: As indicated in Table 6.13, 88% consensus (n=22; N=25) was reached that **families and communities' education** should commence within the period of 3 months (after the approval of the strategic action plan by the ministry of health).

Table 6.13: Strategy 6: Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others (N=25)

STRATEGY 6: Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others. (CONSENSUS REACHED)			
Action statement 6.1: Constitute a support group to provide support to youths (15–24 years) who wish to stop smoking, drinking, physical inactivity and an unhealthy diet. (CONSENSUS REACHED)			
Method 6.1.1: Provide an accessible peer counselling service to youths (15–24 years) who are willing to quit smoking, alcohol usage, physical inactivity, unhealthy diets. (CONSENSUS REACHED)			
Responsible person/s to provide an accessible peer counselling service to youths (15–24 years) who are willing to quit smoking, alcohol consumption, unhealthy diets and physical inactivity. (n=25; N=25)	Responses		Consensus reached
	n	f = (%)	
1. A committee of six certified health counsellors (one person each who major in psychology, nutrition, health care, counselling, nursing and sociology) constituted by the director of HPD, ministry of health Nigeria.	3	12.0	YES
2. A committee of rehabilitation experts (two doctors, two psychologists, two social workers and two nurses) constituted by the director of rehabilitation unit, ministry of health Nigeria.	0	0.0	
3. A team of trained peer counsellors constituted by the director of rehabilitation unit, ministry of health Nigeria.	2	8.0	
4. Educators from the CICMCN assisted by educators from Mould Africa; who work with youth on a daily basis.	0	0.0	

5. Director of the department of community development, local government service assisted by community liaison officers from the local government.	0	0.0	
6. A group of youths, trained as peer counsellors, who volunteer to provide counselling to other youths who wish to stop smoking, drinking, physical inactivity and an unhealthy diet, facilitated by the director of sport, state ministry of youth and sports development, Nigeria.	20	80.0	
Time frame within which to provide an accessible peer counselling service to youths (15–24 years) who are willing to quit smoking, alcohol consumption, unhealthy diets and physical inactivity. (n=25; N=25)			
3 months	3	12.0	YES
6 months	19	76.0	
9 months	2	8.0	
12 months	1	4.0	
Action statement 6.2: Offer education programmes for parents on the importance youths' healthy lifestyle using various means. (CONSENSUS REACHED)			
Method 6.2.1: Include special information sessions on the importance of youths' healthy lifestyle for all parents by means of PTA meetings, social media, pamphlets, information sheets attached to students' results, TV adverts and radio jingles. (CONSENSUS REACHED)			
Responsible person/s for the inclusion of special information sessions on the importance of youths' healthy lifestyle for all parents. (n=25; N=25)	Responses		Consensus reached
	n	f = (%)	
1. An ad-hoc committee on media communication strategy constituted by the director, NBC, state ministry of information and culture Nigeria.	0	0.0	YES
2. A committee of adequate health educators appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	0	0.0	

3. The director, NBC, state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.	21	84.0	
4. A committee of school principals and proprietors constituted by the director of basic and secondary education, state ministry of education Nigeria.	2	8.0	
5. Four members of the PTA executives invited by the chairman, PTA.	2	8.0	
Time frame within which to include special information sessions on the importance of youths' healthy lifestyle for all parents. (n=25; N=25)			
3 months	22	88.0	YES
6 months	2	8.0	
9 months	1	4.0	
12 months	0	0.0	
Action statement 6.3: Educate families and communities on the need for youths to maintain a healthy lifestyle using various means. (CONSENSUS REACHED)			
Method 6.3.1: Educate families and communities on the need for youths to maintain a healthy lifestyle (15–24 years) via attractive advertisements on TV, radio jingles and special announcements at social functions. (CONSENSUS REACHED)			
Responsible person/s for the education of families and communities on the need for youths to maintain a healthy lifestyle (15–24 years). (n=25; N=25)	Responses		Consensus reached
	n	f = (%)	
1. An ad-hoc committee on media communication strategy constituted by the director, NBC, state ministry of information and culture Nigeria.	2	8.0	YES
2. A committee of community health educators appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	2	8.0	
3. The director, NBC, state ministry of information and culture, assisted a committee of educators (Qualified teachers and	1	4.0	

lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.			
4. Director of the department of community development, local government service assisted by community liaison officers from the local government and a committee of community health educators appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.	1	4.0	
5. A committee of community frontline officers including one royal father, two Chiefs constituted by the state commissioner for local government and chieftaincy affairs, assisted by five representatives from the community landlord association constituted by the state chairman, landlord association.	19	76.0	
Time frame within which to educate families and communities on the need for youths to maintain a healthy lifestyle (15–24 years). (n=25; N=25)			
3 months	22	88.0	YES
6 months	2	8.0	
9 months	1	4.0	
12 months	0	0.0	

The validated strategic action plan is hereby presented in Table 6.14.

6.7 THE VALIDATED STRATEGIC ACTION PLAN

In Phase 3 of the study, the panellist validated the draft strategic action plan and reached consensus that the action plan can be implemented to inform youths about risky lifestyles and promote non-risky lifestyles to decrease NCDs in South-West Nigeria (see Sections 6.6 - 6.8). In Table 6.14, a strategic action plan to improve youths’ lifestyles and decrease NCDs in South-West Nigeria is presented.

Table 6.14: The validated strategic action plan.

STRATEGY 1	Initiate interventions to reduce tobacco smoking among youths (15–24 years) by 25%.
Action statement 1.1	Control tobacco accessibility to youths (15–24 years).
Method 1.1.1	Develop a policy to control tobacco sales to youths (15–24 years).
Responsible person/s	The health commissioner assisted by a committee of two doctors and two public health nurses working in the public health department appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
Time frame	The policy to control tobacco sales to youths must be developed within 6 months after the strategic action plan is approved by the ministry of health.
Method 1.1.2	Present the policy to control tobacco sales to youths (15–24 years) to the state house of assembly through the house of assembly commission.
Responsible person/s	The health commissioner.
Time frame	The policy must be presented to the state house of assembly through the house of assembly commission within 3 months after developing the policy to control tobacco sales to youths (15–24 years).
Method 1.1.3	Include the policy in the constitution of the state.
Responsible person/s	Members of the state house of assembly.
Time frame	The policy should be passed into law within 6 months after approval of the policy by the state house of assembly.
Method 1.1.4	Ensure enforcement of the law that controls tobacco sales to youths (15–24 years).
Responsible person/s	A combination of officials of the NDLEA and taskforce constituted by the state ministry of health.

Time frame	The enforcement of the law that controls tobacco sales to youth must commence within 3 months after passing the policy into law.
STRATEGY 2	Introduce interventions to reduce alcohol consumption among youths (15–24 years) by 25%.
Action statement 2.1	Control alcohol accessibility to youths (15–24 years).
Method 2.1.1	Develop a policy to control alcohol sales to youths (15–24 years).
Responsible person/s	The commissioner of health assisted by a committee of two doctors working in public health department and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.
Time frame	The policy to control alcohol sales to youths must be developed within 6 months after the strategic action plan is approved by the ministry of health.
Method 2.1.2	Present the policy to control alcohol sales to youths (15–24 years) to the state house of assembly through the house of assembly commission.
Responsible person/s	The health commissioner.
Time frame	The policy must be presented to the state house of assembly through the house of assembly commission within 3 months after developing the policy to control alcohol sales to youths (15–24 years).
Method 2.1.3	Include the policy in the constitution of the state.
Responsible person/s	Members of the state house of assembly.
Time frame	The policy should be passed into law within 6 months after approval of the policy by the state house of assembly.
Method 2.1.4	Ensure enforcement of the law that controls alcohol sales to youths (15–24 years).

Responsible person/s	A combination of officials of the NDLEA and taskforce constituted by the state ministry of health.
Time frame	The enforcement of the law that controls alcohol sales to youth must commence within 3 months after passing the policy into law.
STRATEGY 3	Introduce interventions to improve healthy diets among youths (15–24 years).
Action statement 3.1	Mandate nutrition labelling of food products by food processing industries.
Method 3.1.1	Develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries.
Responsible person/s	The commissioner of health assisted by a committee of two doctors working in the public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.
Time frame	The policy that mandates nutrient lists to appear on all packaged foods by food processing industries must be developed within 3 months after the strategic action plan is approved by the ministry of health.
Method 3.1.2	Present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly through the house of assembly commission.
Responsible person/s	The health commissioner.
Time frame	The policy must be presented to the state house of assembly through the house of assembly commission within 6 months after developing the policy that mandates nutrient lists to appear on all packaged foods by food processing industries.
Method 3.1.3	

	Facilitate inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state.
Responsible person/s	Members of the state house of assembly.
Time frame	The policy should be passed into law within 6 months after approval of the policy by the state house of assembly.
Method 3.1.4	Ensure enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries.
Responsible person/s	A combination of officials of the NDLEA and taskforce constituted by the state ministry of health.
Time frame	The enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries must commence within 6 months after passing the policy into law.
STRATEGY 4	Introduce interventions to enhance physical activity among youths (15–24 years).
Action statement 4.1	Improve physical activity among youths (15–24 years).
Method 4.1.1	Develop a sports competition/recreation programmes quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion.
Responsible person/s	The commissioner of health assisted by a committee of two doctors working in the public health department, two sports scientists and two public health nurses appointed by the director of the non-communicable disease division (NCDD), state ministry of health, Nigeria.
Time frame	Quarterly sports competition/recreation programmes with attached incentives to encourage young people to participate more in physical activity should be developed and finalised

	within 6 months after the approval of the strategic action plan by the ministry of youth and sports development.
Method 4.1.2	Present a budget on building recreation centres, organising sports/events on physical activity and incentives to encourage young people to participate more in physical activity to the state governor through the ministry of youth and sports development.
Responsible person/s	Commissioner for youth and sports development.
Time frame	The budget should be presented to the state governor within 3 months after presenting a budget for ensuring accessibility to recreation centres, organising sports and events and incentives for participants.
STRATEGY 5	Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles.
Action statement 5.1	Prioritise a health promotion curriculum on healthy lifestyle at all levels of education that is focused on smoking, alcohol usage, physical activity and healthy diets.
Method 5.1.1	Develop a curriculum that mandates the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention.
Responsible person/s	Ad-hoc committee of curriculum development experts constituted by the deputy director of NUC Nigeria, seconded by the commissioner for health, and the commissioner for education, Nigeria.
Time frame	The health promotion curriculum for all levels of education must be developed and finalised within 6 months after its approval by the ministry of education.
Method 5.1.2	Develop electronic media-based health promotion activities (health clubs, talk shows, health debates) for youths on lifestyle's connection to NCDs in all schools using the social media, television programmes/advertisement, radio jingles, and internet pop-up messages.

Responsible person/s	A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education and director of the non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, NBC, state ministry of information and culture Nigeria.
Time frame	Social media-based health promotion activities for youths on lifestyle's connection to NCDs in all schools must be developed and finalised within 3 months after its approval by the ministry of education.
STRATEGY 6	Implement a system to secure counselling services to youths (15–24 years) and provide health education to their significant others.
Action statement 6.1	Constitute a support group to provide support to youths (15–24 years) who wish to stop smoking, drinking, physical inactivity and an unhealthy diet.
Method 6.1.1	Provide an accessible peer counselling service to youths (15–24 years) who are willing to quit smoking, alcohol usage, physical inactivity, unhealthy diets.
Responsible person/s	A group of youths, trained as peer counsellors, who volunteer to provide counselling to other youths who wish to stop smoking, drinking, physical inactivity and an unhealthy diet, facilitated by the director of sport, state ministry of youth and sports development, Nigeria.
Time frame	Accessible peer counselling service to youths (15–24 years) must be made available within 6 months after the action plan is approved by the ministry of health and ministry of education.
Action statement 6.2	Offer education programmes for parents on the importance of youths' healthy lifestyle using various means.

Method 6.2.1	Include special information sessions on the importance of a healthy lifestyle of youths for all parents by means of PTA meetings, social media, pamphlets, information sheets attached to students' results, TV adverts and radio jingle.
Responsible person/s	The director, NBC, state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.
Time frame	Special information sessions on the importance of a healthy lifestyle of youths for all parents using diverse medium must begin within 3 months after the action plan is approved by the ministry of health and ministry of education.
Action statement 6.3	Educate families and communities on the need for youths to maintain a healthy lifestyle using various means.
Method 6.3.1	Educate families and communities on the need to maintain healthy lifestyle among youths (15–24 years) via attractive advertisements on TV, radio jingles and special announcements at social functions.
Responsible person/s	A committee of community frontline officers including 1 royal father, 2 Chiefs constituted by the state commissioner for local government and chieftaincy affairs, assisted by 5 representatives from the community landlord association constituted by the state chairman, landlord association.
Time frame	Education of families and communities should commence within 3 months after the approval of the strategic action plan by the ministry of health.

6.8 CONCLUSION

The draft strategic action plan was validated by experts in two e-Delphi rounds, to reach consensus on every strategy, action statement, method to be employed in order to achieve the objectives of the action statements, responsible person/s to implement the methods to achieve the action statements and the timeframes within which the actions/objectives should be reached. Hence, the strategic action plan to improve youths' lifestyle and decrease NCDs in South-West Nigeria was validated. The conclusion, recommendations, and the limitations of the study are discussed in Chapter 7.

CHAPTER 7

CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

7.1 INTRODUCTION

Chapter 7 presents the conclusions reached, leading to the development of the strategic action plan and the validation thereof according to the structure followed, as indicated in Table 7.1. The chapter also outlines recommendations and the limitations of the study.

Table 7.1: Thesis structure and chapter layout

CHAPTER	DESCRIPTION OF CHAPTER CONTENT	PURPOSE
CHAPTER 1	OVERVIEW OF THE STUDY	
CHAPTER 2	LITERATURE REVIEW 1. The TPB 2. Lifestyle and non-communicable diseases among youths	Questionnaire Development
CHAPTER 3	1. Research design 2. The methodology followed (population, sampling, data gathering techniques, ethical aspects, data gathering process) as well validity and reliability of: 2.1 Phase 1 2.2 Phase 2 2.3 Phase 3	Methodology for Phase 1, Phase 2 and Phase 3
CHAPTER 4	Phase 1: 1. Data analysis and presentation 2. Interpretation of the findings 3. Discussion of the findings	Analysis of the findings from youths using a questionnaire

CHAPTER 5	Phase 2: 1. The principles of strategic action plan development 2. The development of the strategic action plan 3. The draft strategic action plan	Development of strategic action plan
CHAPTER 6	Phase 3: 1. e-Delphi technique 2. The validation process 3. Data interpretation and discussion of findings. 4. The validated strategic action plan	Validated strategic action plan
CHAPTER 7 	1. Conclusions 2. Recommendations for implementing the strategic action plan 3. The limitations of the study	

7.2 CONCLUSIONS

Highlighting the achieved objectives of the study one after the other, the conclusions drawn are hereby described.

7.2.1 Objective 1 and 2: Current risky lifestyle practices of youths and the factors contributing to the specific pattern of lifestyle among youths in South-West Nigeria

7.2.1.1 Smoking

In a report compiled by the Population Reference Bureau, tobacco use is the single most avertable and avoidable cause of disease, disability, and death worldwide; with about 3.4 million tobacco-associated global deaths (PRB 2015:4). It is therefore alarming that the study findings revealed that 50.5% (n=194) of respondents smoked tobacco products (see Table 4.5), of which 91.2% (F=177) already smoked before breakfast (see Table 4.7). Most smokers (53.6%; F=104) were introduced to smoking by their friends and peers

(see Table 4.12). The most alarming finding was that 95.4% (F=185) of smokers started smoking before the age of 20 years (see Table 4.13).

7.2.1.2 Alcohol consumption

Alcohol is well known to be responsible for over 60 types of diseases and injuries (Lange *et al* 2017:1). It is therefore important to note the perturbing findings of this study that 54.7% (n=210) of respondents consumed alcohol (see Table 4.15); of which the majority (93.3%; F=196) drank alcohol before eating breakfast (see Figure 4.1). Most of the drinkers (43.4%; F=91) got initiated into drinking by friends and peer (see Table 4.20). Alarming, 92.4% of drinkers started to drink before the age of 20 years (see Table 4.21).

7.2.1.3 Unhealthy diet

Diet is the greatest factor in lifestyle that has a direct and positive relation with health, as unhealthy dietary patterns established during youth increase the individual's risks for NCDs (Barb 2018:1). Thus, it is imperative to pay attention to the study findings reporting risky lifestyles among young people; only 20.8% (n=80) of respondents consumed vegetables on a regular basis (see Table 4.25), while 71.9% (n=276) of respondents did not consume fruits often (see Table 4.25). A majority (46.9%; n=180) of the respondents consumed sweetened cold drinks regularly (see Table 4.25), with 68.0% (n=261) of the respondents reporting a preference for other drinks instead of drinking water (see Figure 4.2). Moreover, 40.1% (n=154) of respondents consumed pastries on a daily basis (see Table 4.25).

7.2.1.4 Physical inactivity

Inadequate physical activity among youths usually extends into adulthood and may increase their risk for NCDs by 20% to 30% (Essa & El-Shemy 2015:1). This study found that an alarming proportion (87.5%; n=336) of respondents spent between 5–14 hours sitting daily (see Table 4.32) with only 20.8% (n=80) engaging in vigorous-intensity sport

or fitness activities for at least 10 minutes every day (see Table 4.29). Only 7.0% (n=27) of respondents engaged in swimming exercise, 10.7% (n=41) in aerobic exercises, and 23.7% (n=91) in strengthening exercises for at least 10 minutes daily (see Table 4.30). Thus, there is a need to focus on improving youths' lifestyle behaviour.

7.2.2 Objective 3: The perception of youths on the impact of risky lifestyle patterns on non-communicable diseases

A healthy lifestyle describes a way of life that reduces one's risk of being ill or dying young. It is a way of life that helps individuals enjoy more quality health throughout their lifetime (Li *et al* 2018:1; Saint & Krueger 2017:1). Unfortunately, 10.7% (n=4) of respondents had no idea about the relationship between their lifestyle and their health status (see Table 4.37). Thus, the study revealed that youths have very inaccurate perceptions about the impact of risky lifestyle patterns on NCDs. Of the respondents, 7.8% (n=30) did not agree that their way of life can influence their health status positively or negatively, while 34.1% (n=131) were not aware that living an unhealthy lifestyle can cause NCDs in the future (see Table 4.37).

7.2.3 Objective 4: Barriers to healthy lifestyle patterns among youths in South-West Nigeria

Many unhealthy behaviours among young people are said to be caused by their friends and peers, family members, personal characteristics such as the inability to say "No", the desire to satisfy curiosity, their need to satisfy the urge for enjoyment, pleasure and fun, conformity, experimentation, social enhancement, boredom, and relaxation (Armin 2017:5). Based on this literature evidence, this study discovered that youths' indecision to quit unhealthy lifestyle practices (101 responses) is due to peer influence (99 responses), low self-esteem (61 responses), poor governmental control (76 responses), parental influence (65 responses), as well as uncontrolled freedom (83 responses) (see Table 4.41). Consequently, only 27.3% (n=53) of respondents were willing to quit smoking, 45.0% (n=94) thought they could quit consuming alcohol, 35.4% (n=136)

thought they could quit eating unhealthy food, while 37.5% (n=144) thought they could exercise more (see Table 4.38).

7.2.4 Objective 5: Lifestyle changes contributing to the prevention of non-communicable diseases among youths in South-West Nigeria

NCDs can be prevented by controlling the habits, behaviours and lifestyle of people in order to reduce common modifiable risk factors (WHO 2010:61). It is therefore paramount to give priority to lifestyle changes among young people by imposing strict rules and regulations (71 responses), introducing youths to counselling (52 responses), and instilling health values (45 responses) in young people (see Table 4.44). All these will help improve their quality of life (79 responses), prevent NCDs (35 responses), and ensure longevity (42 responses) (see Table 4.40).

7.2.5 Objective 6 and 7: Developed and validated a strategic action plan that can be implemented to inform youths about risky lifestyles and promote non-risky lifestyles to decrease non-communicable diseases among youths in South-West Nigeria

The draft strategic action plan was developed using the findings obtained in Phase 1 of this study, the literature review on the principles that guide the presentation of a strategic action plan, steps in strategic action plan development, as well as the socio-ecological model used for strategic action plan development, as described in Chapter 5. Each of the strategies included action statements and specific methods that were supported by who must take responsibility for achieving the expected outcome within a specific time frame (see Table 5.3). The strategic action plan was validated via experts' opinions in a Delphi process (see Chapter 6) and is ready to be presented to the relevant authorities and stakeholders in South-West Nigeria.

Only two Delphi rounds were conducted to reach consensus that all the items contained in the draft strategic action plan were vital for inclusion in the strategic action plan (see

Section 6.6). The effective implementation of this strategic action plan across all South-West states (see Section 7.3) demands that the document be given high priority in national development programmes. In the absence of urgent response, youths will be more burdened by NCDs.

7.3 RECOMMENDATIONS

The primary risk factors for NCDs, as indicated in the study findings, include smoking, harmful alcohol consumption, physical inactivity, and unhealthy dietary patterns; typically engaged in during young adulthood (PRB 2015:2). Deaths from NCDs are essentially avoidable if healthy lifestyles can be promoted, specifically among youths, by investing in the health of youths in order to produce multiple results (Sheehan, Sweeny, Rasmussen *et al* 2017:5). The developed strategic action plan (see Table 6.14) will only be valued and accepted for implementation if it is shared and communicated with various possible stakeholders within the states in South-West Nigeria.

Officials from specific departments within the ministry of health and other ministries that have connections to the implementation of the strategic action plan – (1) ministry of education, (2) ministry of sport and youth development, (3) ministry of information and culture (4) ministry of agriculture and (5) officials from the government agencies (NAFDAC, NDLEA, NPF and NCS) – contributed to the final strategic action plan. Thus, they bought into this developed strategic action plan, and this paved the way for unfaltering commitment of every stakeholder to push for immediate approval and implementation of the strategic action plan.

The researcher will electronically share the validated strategic action plan to improve lifestyles and decrease NCDs among youths in South-West Nigeria, with all the stakeholders mentioned above. The researcher will request an opportunity to have a discussion, online or in person, with at least one stakeholder (from each of the mentioned stakeholder's group) in each state in order to deliberate on the study findings in order to

negotiate the way forward regarding the implementation of the strategic action plan within the state.

It is therefore recommended that the strategic action plan must be adopted by the states' government in the South-West region in Nigeria and implemented by all the above-listed stakeholders. The implementation of the strategic action plan may contribute to:

1. A reduction in tobacco smoking and alcohol consumption among youths (15–24 years).
2. An improvement in healthy diets among youths (15–24years); considering the findings of this study that youths engage in poor dietary patterns on a regular basis.
3. Increased participation in physical activity by youths (15–24 years), thereby making physical activity a lifestyle.
4. The implementation of a health promotion curriculum for all levels of education in South-West Nigeria that prioritise education on healthy lifestyles, thereby grooming young people to adopt healthy lifestyles, even from the cradle.
5. The implementation of a system that secures health education and counselling services to youths, thereby encouraging youths to quit smoking, drinking, physical inactivity, as well as unhealthy diets.

It is therefore recommended that the taskforce (constituted by the state government through the ministry of education, ministry of sport and youth development, ministry of information and culture, and the ministry of agriculture) monitors the strategic action plan. Each member of the taskforce must be one of the stakeholders mentioned earlier in this section. At various levels deemed appropriate by the involved stakeholders, the effectiveness of the strategic action plan's implementation must be monitored in the form of quarterly official reports on its progress and effectiveness. The government should be enthusiastic in monitoring the progress and effectiveness of the strategic action plan as it will be recorded as part of the achievements of the government in power. A follow-up study is therefore suggested to further design the best strategy to effectively monitor and evaluate the strategic action plan.

To ensure wider awareness of the strategic action plan, efforts will be made to share it on a national level through presentations at conferences. The strategic action plan, as well as the rigorous process followed to develop and validate the strategic action plan, will be published in peer-reviewed journals to ensure the dissemination of knowledge. Through the involvement of stakeholders, gatekeepers of tertiary institutions, and the researcher, the strategic action plan will also be shared at youth summits, on radio and television health programmes, as well as the symposium organised for university students.

7.4 SIGNIFICANCE OF THE STUDY

The study revealed that a significant proportion of youths in South-West Nigeria engage in an unsafe and risky lifestyle (see Sections 4.4 to 4.7). Most of the reasons have to do with youths' personal attitudes, perceptions and beliefs. The strategic action plan can be implemented to inform youths about non-risky lifestyles and may contribute to a decrease in their levels of exposure to risks, and ultimately decrease NCDs in South-West Nigeria. Effective implementation of the strategic action plan can contribute immensely to the promotion of healthy lifestyles in the youths by supporting positive health attitudes, and discouraging negative ones. Interventions that address NCD risks can also be provided by the strategic action plan; thereby helping youths become a healthier adult population, and ultimately reducing the number of deaths from NCDs in the near future.

7.5 STRENGTH OF THE STUDY

The study achieved all its proposed objectives in the three phases. Phase 1 of the study, which was the preliminary step that led to the development of the strategic action plan, was carried out in tertiary institutions where youths were found in large numbers at the same time. This enabled the researcher to access the target population with ease and a 100% questionnaire return rate was attained. In Phase 2, the strategic action plan was developed using the data obtained from Phase 1 and a literature review on strategic action plan development. According to the WHO (2016:9), validation is the act of ascertaining and verifying that any method, plan or technique certainly and reliably leads

to the expected outcome or result. In Phase 3, the Delphi technique (qualitative) was used to validate the strategic action plan with various stakeholders.

7.6 LIMITATION OF THE STUDY

It was challenging in some of the selected tertiary institutions to gain approval to conduct the study because of long bureaucratic procedures, thus data gathering was delayed. A delay was also encountered while getting approval from some parents/guardians of minor respondents who volunteered to partake in the study. The researcher was, however, able to answer all their questions pertaining to the study – explaining in clear terms the nature, purpose and benefits of the study to the parents/guardians of participants – thus approval was eventually granted, although it was time-consuming and data gathering commenced later than expected.

Some questions on personal and sensitive issues related to smoking and alcohol consumption were asked, and because of the prohibition of smoking and drinking in three of the selected tertiary institutions, participants may not have been completely honest because they might have been afraid of having to face the students' disciplinary committee or being expelled from the institution. However, the researcher, in the information letter, promised absolute anonymity and confidentiality.

The study focused on the south-west region of Nigeria as a safety precaution due to the resurgence of ethnic clashes in the country; including ethnic militias such as MASSOB/IPOB of the eastern region of Nigeria and the current Boko Haram insurgency in the north. Therefore, the results cannot be generalised to all regions in Nigeria. Follow-up research to include other geo-political regions in Nigeria is needed, and the study findings should be compared to that of South-West Nigeria to be able to assess generalisability. Such a study could adopt the validated strategic action plan for use in these regions for the benefit of Nigerian youths in general, as youths from these regions were excluded from the study. It will, however, be possible for other researchers to access

the population's characteristics and the data trail provided to determine the level of similarity that may exist.

7.7 SUMMARY

NCDs are principally caused by four key risk factors, namely tobacco smoking, harmful alcohol consumption, physical inactivity, and unhealthy dietary patterns (PRB 2015:2). These mentioned risks factors are typically engaged in during young adulthood, and set the stage for unhealthy lifestyle behaviour and diseases later in life (PRB 2015:2). Ensuring healthy lives and promoting the wellbeing of every young person is therefore paramount because the rate at which the youth population rises makes their health status significant (UN 2011:1).

The findings of this study indicated that the current lifestyle practices of youths in South-West Nigeria are risky, and lifestyle changes that can contribute to the prevention of NCDs among youths can and must be promoted in South-West Nigeria.

A strategic action plan to improve lifestyle and decrease non-communicable diseases among youths in South-West Nigeria is thus a very crucial intervention in promoting healthy lifestyles among the youths in order to effectively address NCD risks and ultimately reduce the tragedy from NCDs in the future.

The accomplishment of the strategic action plan is solely dependent on the ability of the stakeholders to implement it. The stakeholders will play a pivotal role in fast-tracking the implementation of the developed strategic action plan. They were actively involved in developing the strategic action plan, thus owning that they need to facilitate its implementation. With the cooperation of all the stakeholders, including youths and their parents, the burden of NCDs in South-West Nigeria can be relieved.

“Health is much more dependent on our habits and nutrition than on medicine”

(Quote by John Lubbock).

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ANNEXURE 1: ETHICS APPROVAL



COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

10 October 2020

Dear MS FO Sangokoya

NHREC Registration # :
Rec-240816-052
CREC Reference # :
58540245_CHS_CREC_2020

Decision:
Ethics Approval from 10 October
2020 to 31 August 2024

Principal Researcher(s): MS FO Sangokoya

Supervisor: Prof Lizeth Roets (email: roetsl@unisa.ac.za)

New Title:

A STRATEGIC ACTION PLAN TO IMPROVE LIFESTYLE AND DECREASE NON-COMMUNICABLE DISEASES AMONG YOUTHS IN SOUTH- WEST NIGERIA.

Degree Purpose: Doctoral Degree

Thank you for the application for research ethics clearance by the Unisa College of Human Science Ethics Committee. Ethics approval is granted for three years.

The **Low-Risk application** was **reviewed** by College of Human Sciences Research Ethics Committee, on **29 September 2020** in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College Ethics Review Committee.



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3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No fieldwork activities may continue after the expiry date **(31 October 2024)**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

*The reference number **58540245_CHS_CREC_2020** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Disclaimer : The initial certificate was issued Under the Following title: Development Of Guidelines To Improve Life Style And Prevent Non-Communicable Diseases Among Youths In South- Western Nigeria.

Yours Sincerely,

Signature : 

Dr. K.J. Malesa
CHS Ethics Chairperson
Email: maleskj@unisa.ac.za
Tel: (012) 429 4780

PP 

Prof K. Masemola
Executive Dean : CHS
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RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)

15 February 2017

Dear MS FO Sangokoya

Decision: Ethics Approval

HSHDC/631/2017

MS FO Sangokoya

Student: 5854-024-5

Supervisor: Prof L Roets

Qualification: PhD

Joint Supervisor: -

Name: MS FO Sangokoya

Proposal: Development of guidelines to improve life style and prevent non-communicable diseases among youths in South-Western Nigeria.

Qualification: DPCHS04

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted for the duration of the research period as indicated in your application.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on 15 February 2017.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*




3) *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

4) *[Stipulate any reporting requirements if applicable].*

Note:

The reference numbers [top middle and right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the Research Ethics Committee: Department of Health Studies.

Kind regards,


Prof L Roets
CHAIRPERSON
roetsl@unisa.ac.za


Prof MM Moleki
ACADEMIC CHAIRPERSON
molekmm@unisa.ac.za

ANNEXURE 2: RESEARCH QUESTIONNAIRE

RESEARCH QUESTIONNAIRE LIFESTYLE AND NON-COMMUNICABLE DISEASES AMONG YOUTHS.

FOR OFFICIAL USE ONLY

Please answer all the questions as honest as possible

Consent has been read and obtained: Yes No

BIODATA: Please answer the following by ticking with an (x) next to the correct option.

- | | | | | | | |
|----|---------------------|------------|---|-----------------|---|---|
| 1. | Age: | 15-17 | <input style="width: 30px; text-align: center;" type="text" value="1"/> | 18-24 | <input style="width: 30px; text-align: center;" type="text" value="2"/> | <input style="width: 30px; height: 20px;" type="text"/> |
| 2. | Gender: | Male | <input style="width: 30px; text-align: center;" type="text" value="1"/> | Female | <input style="width: 30px; text-align: center;" type="text" value="2"/> | <input style="width: 30px; height: 20px;" type="text"/> |
| 3. | Level of Education: | University | <input style="width: 30px; text-align: center;" type="text" value="1"/> | Graduate School | <input style="width: 30px; text-align: center;" type="text" value="2"/> | <input style="width: 30px; height: 20px;" type="text"/> |
| 4. | Marital Status: | Married | <input style="width: 30px; text-align: center;" type="text" value="1"/> | Single | <input style="width: 30px; text-align: center;" type="text" value="2"/> | <input style="width: 30px; height: 20px;" type="text"/> |
| | | Separated | <input style="width: 30px; text-align: center;" type="text" value="3"/> | Divorced | <input style="width: 30px; text-align: center;" type="text" value="4"/> | <input style="width: 30px; height: 20px;" type="text"/> |

LIFESTYLE PRACTICES

Please read through the statements below and with a tick (x) in the appropriate box, indicate your answer.

Tobacco smoking.

S/N	Question	Yes 1	No 2	
5.	Do you currently smoke any tobacco products such as cigarettes, cigars or pipes?			<input style="width: 30px; height: 20px;" type="text"/>
6.	Do you currently smoke anything other than tobacco?			<input style="width: 30px; height: 20px;" type="text"/>
7.	During the past 30 days, have you ever smoked before breakfast?			<input style="width: 30px; height: 20px;" type="text"/>

8. If you answered 'Yes' to any of questions 5-7, please provide reasons for this behaviour:

.....

.....

--	--

9. If you answered 'No' to any of questions 5-7, please provide reasons for this behaviour:

.....

.....

--	--

10. Who introduced you to smoking?

.....

.....

--	--

11. How old were you when you first started smoking?

Age	Please tick (x)
Less than 10years	1
11-15 years	2
16 – 20years	3
Older than 20years	4

12. Please write down what motivates you to smoke.

.....

--	--

Please read through the statements below and with a tick (x) in the appropriate box, indicate your answer.

Alcohol Consumption:

	Question	Yes 1	No 2
13	Have you ever consumed an alcoholic drink such as beer, wine, spirits or fermented cider?		
14	Have you consumed an alcoholic drink within the past 30 days?		
15	During the past 30 days, did you consume any alcoholic drink before breakfast?		

--

16. If you answered 'Yes' to any of questions 13-15, please provide reasons for this behaviour:

.....

--	--

17. If you answered 'No' to any of questions 13-15, please provide reasons for this behaviour:

.....

--	--

18. Who introduced you to drinking?

.....

--	--

19. How old were you when you first started drinking?

Age	Please tick (x)
Less than 10years	1
11-15 years	2
16-20years	3
Older than 20years	4

--

20. Please indicate how many bottles or glasses do you drink per day:

Bottles _____
 Glasses _____

--

21. Please write down what motivates you to drink alcohol.

.....

--	--

Please read through the statements regarding diet below and with a tick (x) in the appropriate box, indicate your answer.

DIET:

	Question	Daily 1	Weekly 2	Monthly 3	Never 4
22	How often do you eat take away food				
23	How often do you eat pastries?				
24	How often do you take sweetened cold drinks?				
25	How often do you drink water?				
26	How often do you eat fruits?				
27	How often do you eat vegetables?				

28. What type of take away food do you eat? Name all please.

.....

29. Do you prefer to drink other drinks rather than water?

Yes

No

Sometimes

30. If you answered 'Y' question 29, please provide reasons for this behaviour:

.....
.....

31. If you answered 'No' to question 29, please provide reasons for this behaviour:

.....
.....

Please read through the statements regarding activity below and with a tick (x) in the appropriate box, indicate your answer.

PHYSICAL ACTIVITY:

Please answer the following questions on physical activity even if you do not consider yourself to be physically active.

	Question	Yes 1	No 2
32	Do you walk for at least 10 minutes a day continuously to get to and from places?		
33	Do you use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places?		
34	Do you engage in any vigorous-intensity sport or fitness activities for at least 10 min daily?		

35. Please explain why you think physical activity is important or not important.

.....
.....

Please read through the statements regarding physical activity below and with a tick (x) in the appropriate box, indicate your answer

During the past week, did you spend at least 10mins on any of the following?

	Exercise	Yes	No

		1	2
36	Stretching or strengthening exercises		
37	Walk for exercise		
38	Swimming or aquatic exercise		
39	Bicycling (including stationary exercise bikes)		
40	Other aerobic exercise (please Specify)		

41. How much time do you usually spend sitting or resting on a typical day?
 _____ Hours _____ Minutes

Please read through the listed chronic conditions below and with a tick (x) in the appropriate box, indicate whether you have any of the mentioned diseases. Please tick all the relevant conditions.

HEALTH STATUS(s):

	Disease	Yes 1	No 2
42	Lung disease		
43	Heart disease		
44	Cancer		
45	Uncontrollable weight gain		
46	Diabetes		

47. Other chronic conditions (please specify).....
 Are you currently receiving any of the following from a doctor or other health worker?

	Advice	Yes 1	No 2
48	Advice to reduce salt intake		
49	Advice or treatment to lose weight		
50	Advice or treatment to stop smoking		
51	Advice to start or do more exercise		
52	Special prescribed diet		

If you answered 'No' to all of questions 48-52, please ignore question 53 and go to question 54.

53. If you answered 'Yes' to any of the questions 48-52, please give reasons:

.....

--	--

PERCEPTION OF YOUTHS ON THE IMPACT OF LIFESTYLE PATTERNS ON NON- COMMUNICABLE DISEASES.

Please read through the statements below and with a tick (x) in the appropriate box, indicate in the appropriate box to what extent you agree or do not agree with the mentioned statements:

	Question	Agree 1	Strongly agree 2	Disagree 3	Strongly disagree 4	I don't know 5
54	Your way of life can determine your health status in a positive or negative way.					
55	Consumption of alcohol is risky to your health.					
56	Physical inactivity is risky to your health.					
57	Smoking is risky to your health.					
58	Harmful alcohol intake can cause heart diseases, cancer of oral cavity, cancer of the liver, cancer of the oesophagus and breast cancer.					

59	Unhealthy diets (diets that do not contain the prescribed daily required nutrients and calories that are important and needed to successfully prevent diseases in the human body) are risky to your health and can cause obesity, diabetes, heart diseases and prostate cancer.					
60	Tobacco smoking can cause lung diseases, lung cancer, prostate cancer breast cancer, cervical cancer and colon cancer.					
61	Physical inactivity (not participating in any sports, walking or cycling) can lead to obesity, heart diseases, colorectal cancer and diabetes					
62	Living an unhealthy lifestyle (a way of life that increases the risk of being ill or dying early) can cause non-communicable diseases in the future.					

BARRIERS TO HEALTHY LIFESTYLE PATTERN AMONG YOUTH

Please read through the statements below and with a tick (x) in the appropriate box, indicate your answer.

S/N	Question	Yes 1	No 2	Uncertain 3
63	Do you think you can: Quit smoking? Quit consuming alcohol? Quit eating unhealthy food? Exercise more?			

64. If you answered 'Yes' to any of the options in question 63, please write down your reasons:

.....
.....
.....

--	--

65. If you answered 'No' to any of the options in question 63, please write down your reasons:

.....
.....
.....

--	--

LIFESTYLE CHANGES THAT CAN CONTRIBUTE TO THE PREVENTION OF NON COMMUNICABLE DISEASES

Please read through the statements below and with a tick (x) in the appropriate box, indicate in the appropriate box to what extent you agree or do not agree with the mentioned statements:

S/N	Question	Agree 1	Strongly agree 2	Disagree 3	Strongly disagree 4	I don't know 5
66	Living a healthy lifestyle (a way of life that reduces the risk of being ill or dying early) can improve the quality of life.					

67. In your opinion, what do you think is responsible for the unhealthy lifestyle among youth?

.....
.....
.....

68. Do you think it is possible for youths to live a healthy lifestyle (No smoking, moderate alcohol consumption, physical activity and consumption of healthy diet).

.....
.....
.....

69. What in your opinion can motivate or support youth to live a healthy lifestyle free from (smoking, harmful alcohol consumption, physical inactivity and consumption of unhealthy diet).

.....
.....
.....

70. What is your general view of how youths live their lives today?

.....
.....
.....

ANNEXURE 3: INFORMATION LETTER FOR PARTICIPANTS

Dear.....

My name is Sangokoya Foluke Odunayo. I am a student from the Department of Health Studies, University of South Africa (UNISA) and I am studying towards my doctoral degree. I am doing research so that I can be able to develop a strategic action plan that can help to improve the life style of youth and can decrease Non-communicable diseases among youths In South - West Nigeria. You are asked to help me because you are young and between the age 15-17 years. All the information that you give to me that can help to promote a non-risky way of life among Nigerian youths and possibly reduce young people's involvement in the harmful use of substances such as alcohol and tobacco smoking; as well as to motivate them to be physically active and to eat healthy.

I hereby request you to volunteer to complete a questionnaire. The questionnaire will be completed in a class room inside your school premises, but you will be able to complete it in privacy similar to the privacy during examination sessions. The process should take no longer than 20 minutes. If you do not want to answer a particular question, you do not have to answer it, but I will appreciate it if you can honestly answer as many questions as possible. All the information that you provide will remain a secret. All the information that I receive from all the people who will participate in the study will be combined into one report and the results will be shared but your name and personal details will not be asked in the questionnaires so it will not be possible to link any of the information to you.

The name of your school will not be mentioned to further ensure that your identity remains a secret. You will not be paid for agreeing to fill in the questionnaire. You are also free to pull out and discontinue at any time without punishment. I did receive approval from your school management and an ethics committee that oversees this research. If you have any questions about the study, please feel free to contact me on 08034301934 or folukeadeosun1981@gmail.com. You can also contact my supervisor, Professor Roets Lizeth on +27 12-4292226 or roetsl@unisa.ac.za.

Thank you.



Adeosun, Foluke Odunayo.

ANNEXURE 4: INFORMATION LETTER AND CONSENT FORM FOR ADULT PARTICIPANTS

Dear.....

I am a registered doctoral student in the Department of Health Studies, University of South Africa (UNISA). I am doing research that will enable me to develop a strategic action plan to improve the life style of youths and to decrease Non-communicable diseases among youths In South - West Nigeria. I want to develop an action plan, based on the information that you will give to me that could help to promote a non-risky way of life among Nigerian youths and possibly reduce their involvement in the harmful in-take of substances such as alcohol and tobacco smoking; as well as to motivate them to be physically active and eat healthy .

As you are within the age group 18 - 24 years, I hereby request you to please volunteer to complete a questionnaire for me. The questionnaire will be completed in a class room inside the school premises, but you will be able to complete it in privacy similar to the privacy during examination sessions. The process should take no longer than 20 minutes. If you do not want to answer a particular question, you do not have to answer it, but I will appreciate it if you can honestly answer as many questions as possible. All the information that you provide will remain a secret. All the information that I receive from all the people who will participate in the study will be combined into one report and the results will be shared but your name and personal details will not be asked in the questionnaires so it will not be possible to link any of the information to you.

The name of your school will not be mentioned to further ensure that your identity remains a secret. You will not be paid for agreeing to fill in the questionnaire. You are also free to pull out and discontinue at any time without punishment. I did receive approval from your school management and an ethics committee that oversees this research. If you have any questions about the study, please feel free to contact me on 08034301934 or folukeadeosun1981@gmail.com. You can also contact my supervisor, Professor Roets Lizeth on +27 12-4292226 or roetsl@unisa.ac.za .

Thank you.



Adeosun, Foluke Odunayo.

CONSENT

I understand that I will secretly complete a questionnaire that will assist in reaching the aim of the study and that this study will take place in my school premises. I am taking part because I want to and not because of any other reason. I have been told that I can stop at any time, and if I do not like a question, I do not have to answer it. No one will know what my specific answers were. I have been promised secrecy.

Signature.....

Date.....

Age.....

ANNEXURE 5: INFORMATION LETTER AND ASSENT FORM FOR MINORS

Dear.....

My name is Sangokoya Foluke Odunayo. I am a student from the Department of Health Studies, University of South Africa (UNISA) and I am studying towards my doctoral degree. I am doing research so that I can be able to develop a strategic action plan that can help to improve the life style of youth and can decrease Non-communicable diseases among youths In South - West Nigeria. You are asked to help me because you are young and between the age 15-17 years. All the information that you give to me that can help to promote a non-risky way of life among Nigerian youths and possibly reduce young people's involvement in the harmful use of substances such as alcohol and tobacco smoking; as well as to motivate them to be physically active and to eat healthy.

I hereby request you to volunteer to complete a questionnaire. The questionnaire will be completed in a class room inside your school premises, but you will be able to complete it in privacy similar to the privacy during examination sessions. The process should take no longer than 20 minutes. If you do not want to answer a particular question, you do not have to answer it, but I will appreciate it if you can honestly answer as many questions as possible. All the information that you provide will remain a secret. All the information that I receive from all the people who will participate in the study will be combined into one report and the results will be shared but your name and personal details will not be asked in the questionnaires so it will not be possible to link any of the information to you.

The name of your school will not be mentioned to further ensure that your identity remains a secret. You will not be paid for agreeing to fill in the questionnaire. You are also free to pull out and discontinue at any time without punishment. I did receive approval from your school management and an ethics committee that oversees this research. If you have any questions about the study, please feel free to contact me on 08034301934 or folukeadeosun1981@gmail.com. You can also contact my supervisor, Professor Roets Lizeth on +27 12-4292226 or roetsl@unisa.ac.za.

Thank you.



Adeosun, Foluke Odunayo.

ASSENT AGREEMENT

I understand that I will complete a questionnaire out of my own free will. I will complete the questionnaire as honest as I can on in my school premises. All the information that I give will be kept a secret. I have been told that I can stop at any time, and no one will know my answers because I have been promised secrecy.

Signature _____

Date: _____

Age: _____

ANNEXURE 6: PARENTAL OR GUARDIAN CONSENT

Dear Parent/Guardian,

My name is Sangokoya Foluke Odunayo. I am a doctoral student enrolled in the Department of Health Studies, University of South Africa (UNISA). My thesis title is: A strategic action plan to improve life style and decrease Non-communicable diseases among youths In South - West Nigeria. I want to develop an action plan based on the information I get from your child, that can help to assist Nigerian youths to live a non-risky way of life. The strategic action plan might reduce the levels of involvement in the in-take of harmful substances such as alcohol and tobacco smoking; as well as to motivate them to be physically active and eat a healthy diet.

I need your consent to allow me to contact your child and ask for his or her voluntary participation in my study. Your child will only be asked to complete a questionnaire that will take more or less 20 minute to complete. The name of your child will not appear on the questionnaire and the information within the questionnaire will be kept confidential. Your child's identity and the name of the school will not be revealed in the report or articles. You or your child will not be paid because you have the choice not to agree for your child to participate.

I have been granted permission to carry out this study by the management of the University where your child is enrolled as well as from the ethics committee of the university where I am registered for my study.

Your decision whether or not to allow your child to participate will not affect you or your child's relationship with the School in any way. If you decide to allow your child to participate, you and your child are still free to withdraw and discontinue participation at any time without penalty.

If you have any questions about the study, please feel free to contact me on 08034301934 or folukeadeosun1981@gmail.com. You can also contact my supervisor, Professor Roets Lizeth on +27 12-4292226 or roetsl@unisa.ac.za .

The contact details of the research Ethics committee is HSREC@unisa.ac.za.

Thank you.



Adeosun, Foluke Odunayo.

CONSENT

Your signature indicates that you have read and understood the information provided above, that you willingly agree to allow your child to participate, and that you and/or your child may withdraw your consent at any time and discontinue participation without penalty.

Name:..... Signature & Date.....

ANNEXURE 7: REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY

Date

The Registrar,
(Name of Institution).

Dear Sir/Ma,

I am a registered doctoral student enrolled in the Department of Health Studies, University of South Africa (UNISA). My thesis title is: A strategic action plan to improve life style and decrease Non-communicable diseases among youths In South - West Nigeria. The aim of this research is to develop a strategic action plan that can be implemented to inform youths about non-risky lifestyles in an attempt to decrease the levels of exposure to risks and ultimately decrease Non-communicable diseases among youths in South-West Nigeria.

I hereby request permission from you to recruit students of both sexes aged 15-24years from the school to anonymously complete a questionnaire (copy enclosed) that will assist in reaching the aim of the study. Due to the nature of the study, interested students below 18 years, who volunteer to participate, will be given assent forms to be signed by them, but consent form will first be sent to their parents or guardians to be signed (copy enclosed) and returned to me before data gathering can commence. A consent form will also be provided to be filled by participants who are above 18 years. After agreeing to participate, the respondents will be gathered together in a classroom within the school premises to complete the questionnaires through the assistance of the College/Faculty officers and Departmental coordinators. The questionnaires will be completed in privacy similar to the process followed during examination sessions.

The questionnaire will take more or less 20 minutes to complete and the combined aggregated data will be shared to ensure absolute confidentiality and anonymousness. The names of schools involved will not be mentioned in any kind of publication to also protect the privacy of the schools. No costs will be incurred by either your school or the individual participants.

I have been granted permission to carry out this study by the research ethics committee of the Department of Health Studies, UNISA (HSHDC/631/2017). The research Ethics committee can be contacted at: HSREC@unisa.ac.za.

Your approval to conduct this study will be greatly appreciated. I would be happy to answer any questions or concerns that you may have at any time. You may contact me on +2348034301934 or folukeadeosun1981@gmail.com. You can also contact my supervisor, Professor Roets Lizeth on +27 12- 4292226 or roetsl@unisa.ac.za

For your convenience the full research proposal is attached.

A signed letter of permission on your institution's letterhead acknowledging your consent and permission for me to conduct this survey/study at your institution would be much appreciated

Thank you.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Foluke O. Sangokoya', with a stylized flourish extending to the right.

Sangokoya, Foluke O.

ANNEXURE 8: ELECTRONIC INVITATION TO PARTICIPATE IN THE VALIDATION OF A DRAFT STRATEGIC ACTION PLAN (ROUND 1)

Dear Panelist,

I am Adeosun Foluke Odunayo, a registered doctoral student enrolled in the Department of Health Studies, University of South Africa (UNISA). The title of my study is 'A strategic action plan to improve life style and decrease non-communicable diseases among youths in South- West Nigeria'. The aim is to develop a strategic action plan that can be implemented to inform youths about non-risky lifestyles in an attempt to decrease the levels of exposure to risks and ultimately decrease NCDs among youths in south-west Nigeria.

A draft strategic action plan was developed after obtaining information on non-communicable diseases from youths (15-24 years) in Nigeria by means of questionnaires. The data was analyzed and a thorough literature review was conducted where after, the draft strategic action plan was developed.

You are selected to act as an expert due to your experience with health system development, policy formulation, strategic action plan development, guidelines development, as well as your special interest in providing solutions to health problems in the past. Your expertise and participation is therefore vital to the validation of this strategic action plan. Your participation in this study will entail at least two rounds as all comments and suggestions for improvement will be incorporated and then send out for another round until a 75% consensus between all panelists are reached. The estimated time for completion of the instrument is 30 minutes.

Confidentiality will be maintained throughout the rounds, as your identity will not be made available to any other panelist. There are no known risks to your participation in this study. You will not be paid for agreeing to participate in the Delphi exercise. You are also free to exercise the right to pull out and discontinue at any time. The researcher hopes to

publish the results of this study in the peer reviewed journals, though your identity will not be revealed.

Please note that estimated time to complete all rounds is not more than 6 weeks. After completing the first round of the Delphi exercise, you will receive the questionnaire for the second round immediately after the data for the first round is analysed and a new draft is ready for distribution. I kindly request you, if you volunteered to participate, to continue to do so until consensus is reached and the action plan finalised.

Please feel free to contact me on 08034301934 or folukeadeosun1981@gmail.com. You can also contact my supervisor, Professor Roets Lizeth on +27 12-4292226 or roetsl@unisa.ac.za. The research Ethics committee can also be contacted at: HSREC@unisa.ac.za.

If you agree to participate, please open the link <https://form.jotform.com/FLUKE4ALL/validation-of-the-draft-strategic-a> with the ctrl command and left click of the mouse.

Thank you for your valuable contribution to this research study.
Yours sincerely,



Adeosun, Foluke Odunayo.

ANNEXURE 9: ELECTRONIC INVITATION TO PARTICIPATE IN THE VALIDATION OF A DRAFT STRATEGIC ACTION PLAN (ROUND 2)

Dear Panelist,

I am Adeosun Foluke Odunayo, a registered doctoral student enrolled in the Department of Health Studies, University of South Africa (UNISA) and you are hereby invited to participate in the **second round** of the e-Delphi in order to reach consensus on the draft strategic action plan that can be implemented to inform youths about non-risky lifestyles in an attempt to decrease the levels of exposure to risks and ultimately decrease NCDs among youths in South-West Nigeria.

You were identified as an expert due to your experience with health system development, policy formulation, strategic action plan development, guidelines development, as well as your special interest in providing solutions to health problems to also validate the second draft of the strategic action plan by using the Delphi technique.

If you participated in the first round of the validation process, I want to sincerely thank you for your contributions and inputs thus far.

In round 2 of the e-Delphi, you are presented with a second draft of the strategic action plan, after I have incorporated the inputs from all panelists. Where consensus was reached in the first round, it will be indicated as such. Where consensus was not reached your opinion in the second round is very important to enhance the acceptability and feasibility of the strategic action plan.

I want to emphasize that the study was approved by the Health Studies Research Ethics Committee and all ethical principles applied. Confidentiality will be maintained because your identity will not be made available to any other panellist. There are no known risks to your participation in this study and you will not be paid for agreeing to participate. You are also free to exercise the right to withdraw and discontinue at any time, however your contribution in the second round will be highly appreciated.

If you agree to participate, please open the link <https://form.jotform.com/FLUKE4ALL/round-2validation-of-the-draft-stra> with the ctrl command and left click of the mouse to give to access to the validation tool for completion.

I hope to publish the results of this study in the peer reviewed journals, though your identity will not be revealed in any of the publications.

Please feel free to contact me on 08034301934 or folukeadeosun1981@gmail.com. You can also contact my supervisor, Professor Roets Lizeth on +27 12-4292226 or roetsl@unisa.ac.za. The research Ethics committee can also be contacted at: HSREC@unisa.ac.za.

Thank you for your valuable contribution to this research study.

Yours sincerely,



Adeosun, Foluke Odunayo.

ANNEXURE 10: PERMISSION TO CARRY OUT THE STUDY



UNIVERSITY OF IBADAN,
Ibadan, Nigeria.

Olunmi O. Faluyi

B.Ed.(Ibadan), M.Ed., MCIPM, AUA (UK)

OFFICE OF THE REGISTRAR

GSM: +234 (0) 814 066 1585

+234 (0) 802 328 8990

E-mail: registrar@mail.ui.edu.ng

bunmiadm@yahoo.com

REF.: R/12/M. 1

2 August, 2019.

Ms Foluke O. Sangokoya,
Department of Health Studies,
College of Human Sciences,
University of South Africa (UNISA),
South Africa.

Dear Ms Sangokoya,

Re: Request for Permission to Carry Out A Research

I write with reference to your letter dated 21 February, 2019 on the above issue and the subsequent clarifications thereof as provided by your supervisor, Professor Lizeth Roets of the same department at UNISA. I wish to convey an approval for you to carry out the required aspects of your research in our University, as appropriate.

It is noted that, your interest is to conduct sample survey on a range of students in our University (using a questionnaire) and at their consent, to determine certain results towards your doctoral research. Your research is titled "Lifestyle and Non-Communicable Diseases among Youths in South-Western Nigeria".

Once again the requested approval is hereby granted and conveyed.

Thank you.

A handwritten signature in blue ink, appearing to read 'O.O. Afolabi'.

O.O. Afolabi
Principal Assistant Registrar
FOR: Registrar

ANNEXURE 11: PERMISSION TO CARRY OUT THE STUDY



JOSEPHAYO BABALOLA UNIVERSITY
(Established by Christ Apostolic Church Worldwide)
Ikeji Arakeji, P.M.B. 5006, Ilesa, Osun State, Nigeria.

OFFICE OF THE REGISTRAR
Pastor Wale Aderibigbe B.A, PGDE, M.Ed., LL.B. BL
E-mail: registrar@jabu.edu.ng Website: www.jabu.edu.ng
Phone: 08057897005, 08084891331

11th January, 2019.
Ms. Sangokoya Foluke Odunayo.
Department of Health Studies,
University of South Africa (UNISA),
Pretoria, South Africa.

Dear Ms. Sangokoya,

APPROVAL TO CARRY OUT A RESEARCH STUDY

Sequel to your request to conduct a research study in our institution, I write to confirm that your request had been granted. You are hereby allowed to carry out your research bearing in mind that you must seek consent/assent from our students before you furnish them with your research instrument.

I wish you success in your research.
Thank you.


Afolabi, M.O
For the Registrar.

The First Entrepreneurial University in Nigeria
Km 36, Ilesa - Akure Road

ANNEXURE 12: PERMISSION TO CARRY OUT THE STUDY

Office of
The Registrar
Christie Oluborode
B.A. (Hons) University of Ibadan
08033509150
christieoluborode217@yahoo.com
reg_christieoluborode@abuaad.edu.ng



**AFE
BABALOLA
UNIVERSITY
ADO-EKITI (ABUAD)**
KM 8.5, AFE BABALOLA WAY,
ADO-EKITI, EKITI STATE, NIGERIA
P.M.B. 5454 ADO-EKITI
www.abuaad.edu.ng

Ref:AD/ GC/VOL.4/278

7th December 2018

Dear Sangokoya,

RE: REQUEST FOR PERMISSION TO CONDUCT A RESEARCH

Your letter dated September 15th, 2018 on the above subject matter refers.

I write to convey to you the approval of your request for permission to recruit 21 students of both sexes, aged 15 to 24 years from this university to anonymously complete Research Questionnaires on "Lifestyle and Non-communicable diseases among Youths".

You are to kindly ensure smooth and peaceful atmosphere during this period.

Please accept the assurances of my warmest regards.

Thank you.

Lady Christie Oluborode
Registrar

ANNEXURE 13: PERMISSION TO CARRY OUT THE STUDY



COVENANT UNIVERSITY

From: Dean, students' Affairs.

To: Ms. Foluke Sangokoya,
Department of Health Studies,
College of Human Sciences,
University of South Africa.


Date: October 4, 2018.

Dear Ms. Sangokoya,

RE: REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY

With reference to your letter dated September 15th, 2018, I am pleased to inform you that your request to carry out a research in this institution is hereby granted. Feel free to contact this office for any other assistance you may require during your research. Please do not hesitate to share the findings and recommendations of the study with us as soon as the study is concluded.

Thank you.


O.P. Williams

For dean of students' affairs.

ANNEXURE 14: PERMISSION TO CARRY OUT THE STUDY

FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE, NIGERIA

(OFFICE OF THE DEAN, STUDENTS' AFFAIRS)

www.futa.edu.ng

Vice-Chancellor

Professor Joseph Adeola FUWAPE, fnas, ffps
B.Sc., M. Sc., Ph.D (Ibadan)
P. M. B 704, Akure, Ondo State, Nigeria.
E-mail: vc@futa.edu.ng
joefuwape@yahoo.com



Dean of Students

Professor Gbenga Emmanuel ONIBI, RAS
B.Tech. (Akure), M.Sc, Ph.D (Aberdeen), Cert.
Curr. Dev., Cert. Guid. & Counsel. (NUC, Abuja)
Tel: 0803-350-3320
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6th February, 2019

Ms. Sangokoya Foluke Odunayo
Department of Health Studies,
University of South Africa [UNISA],
South Africa.

Dear Madam,

Letter of Permission

This is to inform you that the Federal University of Technology, Akure, [FUTA] Nigeria has approved your request to conduct PhD research.

In addition, you are requested to share your result with FUTA at the completion of the research.

Wishing you a successful study.

Please accept the assurance of our Vice-Chancellor.

Gbenga E. ONIBI, PhD
Dean, Student Affairs

ANNEXURE 15: PERMISSION TO CARRY OUT THE STUDY



OFFICE OF THE DEAN OF STUDENTS' AFFAIRS

15th January, 2019.

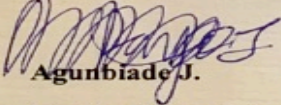
Ms. Sangokoya Foluke Odunayo.
Department of Health Studies,
University of South Africa (UNISA),
Pretoria, South Africa.

Dear Ms. Sangokoya,

PERMISSION TO CARRY OUT A RESEARCH

I received your letter dated 13th September, 2018; requesting for permission to conduct a research in the University of Lagos. Having looked through your supporting documents and the main purpose of the research, you are hereby granted the permission to go ahead with your research. You have stated that your thesis title is: **A strategic action plan to improve life style and decrease Non-communicable diseases among youths In South - West Nigeria**. I am hopeful that this study will be of great benefits to the youth. Have a pleasant stay.

Thank you.


Agunbiade J.

For the Dean of students' affairs.

**ANNEXURE 16: PERMISSION TO CARRY OUT THE PRE-TEST OF THE STUDY
INSTRUMENT**

THE FEDERAL POLYTECHNIC, ADO – EKITI

(OFFICE OF THE DEAN, STUDENTS' AFFAIR)

P.M.B. 5351, ADO-EKITI, EKITI STATE, NIGERIA 08033897314

Rector
Dr. D.H. Oladebeye

Dean of Students
Mr. D.O. Dada.

19th February, 2019

Ms. Sangokoya Foluke Odunayo
Department of Health Studies,
University of South Africa (UNISA),
South Africa.

Dear Madam,

**LETTER OF PERMISSION TO CARRY OUT A PRE-TEST ON YOUR RESEARCH
QUESTIONNAIRE**

This is to inform you that the Federal Polytechnic, Ado-Ekiti, Nigeria has approved your request to conduct a pre-test on your research questionnaire.

In addition, you are requested to share your result with The Federal Polytechnic, Ado Ekiti at the completion of the research.

Wishing you a successful Study.

Please accept the assurance of our Rector.



ANNEXURE 17: PRE-TEST RESEARCH QUESTIONNAIRE

LIFE STYLE AND NON-COMMUNICABLE DISEASES AMONG

Please answer all the questions as honest as possible

Consent has been read and obtained: Yes No

BIODATA: Please answer the following by g with an (x) next the correct option.

1. Age:
 - 15-17
 - 18-24
2. Gender:
 - Male
 - Female
3. Level of Education:
 - University
 - Graduate School
4. Marital Status:
 - Married
 - Single
 - Separated
 - Divorced

LIFESTYLE PRACTICES

Please read through the statements below and with a tick (x) in the appropriate box, indicate your answer.

Tobacco.

S/N	Question	Yes 1	No 2
5.	Do you currently smoke any tobacco products, such as cigarettes, cigars or pipes?	<input type="checkbox"/>	<input type="checkbox"/>
6.	Do you currently smoke anything other than tobacco?	<input type="checkbox"/>	<input type="checkbox"/>
7.	During the past 30 days, have you smoked before breakfast? Please do not count snacks.	<input type="checkbox"/>	<input type="checkbox"/>
8.	During the past 30 days, have you smoked before lunch? Please do not count snacks	<input type="checkbox"/>	<input type="checkbox"/>
9.	During the past 30 days, have you smoked before dinner? Please do not count snacks	<input type="checkbox"/>	<input type="checkbox"/>

If you answered **No** to all the above questions please ignore questions **10-20** and go to question **21**.

10. If you answered 'Yes' to any of questions 5-9 please provide reasons for this behaviour:

11. If you answered 'No' to any of questions 5-9 please provide reasons for this behaviour:

12. Please write down why you think it is good to smoke.

13. Who introduced you to smoking?

14. How old were you when you first started smoking?

Age	Please tick ()
Less than 10years	<input type="checkbox"/>
11-15 years	<input type="checkbox"/>
16-20years	<input type="checkbox"/>
Above 20years	<input type="checkbox"/>

15. How many sticks / wraps do you smoke daily?.....
16. How many sticks / wraps do you smoke weekly?.....
17. How many sticks / wraps do you smoke monthly?.....
18. How many sticks / wraps do you smoke socially?.....
19. Please write down what motivates you to smoke.
.....
.....
.....

If you answered questions **10-19**, please ignore question **20** and go to question **21**.

20. Please give reasons for not smoking.
.....
.....
.....

Please read through the statements below and with a tick (x) in the appropriate box, indicate your answer.

Alcohol Consumption:

	Question	Yes 1	No 2
21	Have you ever consumed an alcoholic drink such as beer, wine, spirits or fermented cider?		
22	Have you consumed an alcoholic drink within the past 30 days?		
23	During the past 30 days, did you consume any alcoholic drink before breakfast? Please do not count snacks.		
24	During the past 30 days, did you consume any alcoholic drink before lunch? Please do not count snacks.		
25	During the past 30 days, did you consume any alcoholic drink before dinner? Please do not count snacks.		

If you answered **No** to all the above questions please ignore questions **26-35** and go to question **36**.

26. If you answered **'Yes'** to any of questions **21-25** please provide reasons for this behaviour:
.....
.....
.....

27. If you answered **'No'** to any of questions **21-25** please provide reasons for this behaviour:
.....
.....
.....

28. Please write down why you think it is good to consume alcohol.
.....
.....
.....

29. Who introduced you to drinking?
.....
.....
.....

30. How old were you when you first started drinking?

Age	Please tick ()
Less than 10years	
11-15 years	
16-20years	
Above 20years	

31. How many bottles do you drink daily?.....
32. How many bottles do you drink weekly?.....
33. How many bottles do you drink monthly?.....
34. How many bottles do you drink socially?.....
35. Please write down what motivates you to drink alcohol.
.....
.....
.....

If you answered questions **26-35**, please ignore question **36** and go to question **37**.

36. Please give reasons for not drinking alcohol.

.....

Please read through the statements regarding diet below and with a tick (x) in the appropriate box, indicate your answer.

DIET:

	Question	Daily 1	Weekly 2	Monthly 3	Never 4
37.	How often do you eat take away food for breakfast				
38.	How often do you eat take away food for lunch?				
39.	How often do you eat take away food for dinner				
40.	How often do you eat pastries?				
41.	How often do you take sweetened cold drinks?				
42.	How often do you eat fruits?				
43.	How often do you eat vegetables?				

44. What type of take away food do you eat? Name all please.

.....

45. Do you prefer to drink other drinks rather than water?

Yes
 No
 Sometimes

46. If you answered 'Yes' questions 45 please provide reasons for this behaviour:

.....

47. If you answered 'No' to questions 45 please provide reasons for this behaviour:

.....

48. If you answered 'Sometimes' to questions 45 please provide reasons for this behaviour:

.....

Please read through the statements regarding activity below and with a tick (x) in the appropriate box, indicate your answer.

PHYSICAL ACTIVITY:

Please answer the following questions on physical activity even if you do not consider yourself to be physically active.

	Question	Yes 1	No 2
49	Do you walk for at least 10 minutes continuously to get to and from places?		
50	Do you use a bicycle (<i>pedal cycle</i>) for at least 10 minutes continuously to get to and from places?		
51	Do you engage in any vigorous-intensity sport activities daily?		
52	Do you engage in any vigorous- fitness activities daily?		
53	Do you engage in any vigorous-intensity recreational activities daily?		

If you answered 'No' to all of questions 49-53, please ignore questions 54-55 and go to question 56.

54. If you answered 'Yes' to any of questions 49-53 Please motivate why you think physical activity is important.

.....

55. If you answered 'No' to any of questions 49-53 please provide reasons for not engaging in any sports or physical activity.

.....

Please read through the statements regarding activity below and with a tick (x) in the appropriate box, indicate your answer

	Question	Daily 1	Weekly 2	Monthly 3	Never 4
56	How often do you walk for at least 10 minutes continuously to get to and from places?				
57	How often do you use a bicycle (<i>pedal cycle</i>) for at least 10 minutes continuously to get to and from places?				
58	How often do you engage in any vigorous-intensity sport activities?				
59	How often do you engage in any vigorous- fitness activities?				
60	How often do you engage in any vigorous-intensity recreational activities?				

Please read through the statements regarding activity below and with a tick (x) in the appropriate box, indicate your answer

During the past week, did you spend at least 10mins on any of the following?

	Exercise	Yes 1	No 2
61	Stretching or strengthening exercises		
62	Walk for exercise		
63	Swimming or aquatic exercise		
64	Bicycling (including stationary exercise bikes)		
65	Other aerobic exercise (please <i>Specify</i>)		

66. How much time do you spend doing vigorous-intensity sport activities in a day?
 Hours Minutes.....
67. How much time do you spend doing vigorous-intensity fitness activities daily?
 Hours Minutes.....
68. How much time do you spend doing vigorous-intensity recreational activities daily?
 Hours Minutes.....
69. How much time do you usually spend sitting or resting on a typical day?
 Hours Minutes.....

Please read through the listed chronic conditions below and with a tick (x) in the appropriate box, indicate your answer. Please tick all the relevant conditions.

HEALTH STATUS (s):

	Disease	Yes 1	No 2
70	Lung disease		
71	Heart disease		
72	Cancer		
73	Uncontrollable weight gain		
74	Other chronic condition (please Specify)		
75	Diabetes		

76. Other chronic conditions (please specify).....
 Are you currently receiving any of the following from a doctor or other health worker?

	Advice	Yes 1	No 2
77	Advice to reduce salt intake		
78	Advice or treatment to lose weight		
79	Advice or treatment to stop smoking		

80	Advice to start or do more exercise		
81	Special prescribed diet		

If you answered 'No' to all of questions 77-81 please ignore question 82 and go to question 83.

82. If you answered 'Yes' to any of the questions 77-81 please give reasons:

.....

PERCEPTION ON THE IMPACT OF LIFESTYLE PATTERNS ON NON- COMMUNICABLE DISEASES.

Please read through the statements below and with a tick (x) in the appropriate box, indicate your answer.

Please tick all the relevant conditions

	Question	Agree 1	Strongly agree 2	Disagree 3	Strongly disagree 4	I don't know 5
83	Your way of life can determine your health status positively or negatively.					
84	Consumption of alcohol is risky to your health.					
85	Physical inactivity is risky to your health.					
86	Smoking is risky to your health.					
87	Poor diets are risky to your health.					
88	Tobacco smoking is risky and can cause Lungs diseases					
89	poor diets are risky and can cause non communicable diseases like obesity, diabetes and heart diseases					
90	Consumption of alcohol is risky.					
91	Physical inactivity (not participating in any sports, walking or cycling) is risky and can lead to obesity.					
92	Physical inactivity (not participating in any sports, walking or cycling) is risky and can lead to other heart diseases.					
93	Living an unsafe way of life can lead to tiredness and shortness of breath.					
94	Unsafe way of life can cause non-communicable diseases in the future.					

BARRIERS TO HEALTHY LIFESTYLE PATTERN AMONG YOUTH:

Please read through the statements below and with a tick (x) in the appropriate box, indicate your answer.

S/N	Question	Yes 1	No 2	Uncertain 3
95	Do you think you can quit smoking?			
96	Do you think you can stop consuming alcohol?			
97	Do you think you can consume healthy diets regularly?			
98	Do you think you can improve on the hours you spend on exercising?			
99	Do you think you can quit unsafe way of life?			

If you answered 'No' to all of questions 95-99, please ignore questions 100-102 and go to question 103.

100. If you answered 'Yes' to any of questions 95-99 please write down your reasons:

.....

101. If you answered 'No' to any of questions 95-99 please write down your reasons:

.....

102. If you answered 'Uncertain' to any of questions 95-99 please write down your reasons:

.....

 Read through the following statements regarding LIFESTYLE CHANGES tick with an (x) next to your choice of an answer.

S/N	Question	Agree 1	Strongly agree 2	Disagree 3	Strongly disagree 4	I don't know 5
103	Quitting drinking of alcohol can prevent diabetes disease.					
104	Quitting smoking can prevent cancers and lungs diseases					
105	Eating healthy diets can prevent obesity , cancers and heart diseases					
106	Improved Physical activity can prevent obesity and heart diseases					
107	Living a safe way of life can prevent so many diseases					

108. In your opinion, what do you think is responsible for unsafe way of life among youths?

109. Do you think it is possible for youths not to live an unsafe way of life?

110. What in your opinion can contribute to the decrease in unsafe way of life among youths?

111. What is your general view of how youths live their lives today?

Thank you for your time

ANNEXURE 18: VALIDATION TOOL 1

VALIDATION OF THE DRAFT STRATEGIC ACTION PLAN USING DELPHI TECHNIQUE.

INSTRUCTIONS TO PANELISTS.

Please indicate your answer/choice to every of the following with a click next to the options provided:

1. Inclusion of each strategy in the strategic action plan
2. Inclusion of the mentioned action statements provided
3. The methods suggested to assist in achieving the goal
4. The responsible persons for each suggested method and
5. The suggested time frames within which each method should be finalized.

In all the comment boxes, please provide detailed suggestions on how the specific action statement, methods and more can be improved.

STRATEGY 1: Initiate Interventions to reduce tobacco smoking among youths (15 – 24 years) by 25%.

AGREE

DISAGREE

Action statement 1.1 : Control tobacco accessibility to youths (15–24 years).

AGREE

DISAGREE

Method 1.1.1 :Develop a policy to control tobacco sales to youths

(15 – 24 years)

AGREE

DISAGREE

If you ticked DISAGREE please proceed to METHOD 1.1.2

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- A committee of two doctors working in public health department and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
The commissioner for health assisted by a committee of two doctors and two public health nurses
- working in public health department appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of two doctors working in public health department and two public health nurses appointed by the director of health, local government service.
Two health practitioners (one public health nurse and one doctor), seconded by the directors of Non-
- communicable disease division (NCDD), each from the state ministry of health and from the local government service.
- Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from Mould Africa; who work with youth on a daily basis.
- Director of the department of community development, local government service assisted by community liaison officers from the local government.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be developed and finalised within after approval of the strategic action plan by the ministry of Health.

6 MONTHS

9 MONTHS

Method 1.1.2: Present the policy to control tobacco sales to youths (15 – 24 years) to the state house of assembly through the house of assembly commission.

AGREE

DISAGREE

If you ticked DISAGREE please proceed to METHOD 1.1.3

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

The commissioner for health

Supervisor for health

Local government legislators

Director of the department of community development

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be presented to the state house of assembly after developing the policy to control tobacco sales to youths (15 – 24 years).

3 MONTHS

6 MONTHS

9 MONTHS

12 MONTHS

Method 1.1.3: Include the policy in the constitution of the state.

AGREE

DISAGREE

If you ticked DISAGREE please proceed to METHOD 1.1.4

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s

- Members of the state house of assembly
- Supervisor for health
- State house of assembly commission

- The commissioner for health
- Local government legislators

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be passed into law withinmonths after approval of the policy by the state house of assembly.

6 MONTHS

9MONTHS

Method 1.1.4: Ensure enforcement of the law that controls tobacco sales to youths (15-24 years).

AGREE

DISAGREE

If you ticked DISAGREE please proceed to STRATEGY 2

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s

- Officials of the National Drug Law Enforcement Agency (NDLEA)
- Officials of the Nigerian Customs service (NCS)
- Officials of the Nigerian Police force (NPF).
- Task force constituted by the state ministry of health.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The enforcement of the law that control tobacco sale to youth must commence months after passing the policy into law.



Suggestions/comments

Strategy 2: Introduce interventions to reduce alcohol consumption among youths (15-24years) by 25%.



AGREE



DISAGREE

Action statement 2.1: Control alcohol accessibility to youths (15-24 years).



AGREE



DISAGREE

Method 2.1.1: Develop a policy to control alcohol sale to youths (15-24 years).



AGREE



DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

If you ticked DISAGREE please proceed to METHOD 2.1.2

- A committee of two doctors working in public health department and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- The commissioner of health assisted by a committee of two doctors working in public health department and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of two doctors working in public health department and two public health nurses appointed by the director of health, Local government service, Nigeria.
- Two health practitioners (one public health nurse and one doctor), seconded by the directors of Non-communicable disease division (NCDD), from the ministry of health and from the local government service, Nigeria.
- Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from Mould Africa; who work with youth on a daily basis.
- Director of the department of community development, local government service assisted by community liaison officers from the local government.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be developed and finalised within after approval of the strategic action plan by the ministry of Health.

6 MONTHS

12 MONTHS

9 MONTHS

18 MONTHS

Method 2.1.2: Present the policy to control alcohol sales to youths (15 – 24 years) to the state house of assembly through the house of assembly commission.

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

If you ticked DISAGREE please proceed to METHOD 2.1.3

The commissioner for health

Supervisor for health

Local government legislators

Director of the department of community development

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be presented to the state house of assembly after developing the policy to control alcohol sales to youths (15 – 24 years).

3 MONTHS

9 MONTHS

6 MONTHS

12 MONTHS

Method 2.1.3: Include the policy in the constitution of the state.

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

If you ticked DISAGREE please proceed to METHOD 2.1.4

Members of the state house of assembly

Supervisor for health

State house of assembly commission

The commissioner for health

Local government legislators

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be passed into law withinmonths after the approval of the policy by the state house of assembly.

6 MONTHS

9 MONTHS

Method 2.1.4: Ensure enforcement of the law that controls alcohol sales to youths (15-24 years).

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

If you ticked DISAGREE please proceed to STRATEGY 3

- Officials of the National Drug Law Enforcement Agency (NDLEA)
- Officials of the Nigerian Police force (NPF).
- Officials of the Nigerian Customs service (NCS).
- Task force constituted by the state ministry of health.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The enforcement of the law that control alcohol sales to youth must commence months after passing the policy into law.

3 MONTHS

9 MONTHS

6 MONTHS

12 MONTHS

Suggestions/comments

Strategy 3: Introduce interventions to improve the consumption of healthy diets among youths (15-24years).

AGREE

DISAGREE

Action statement 3.1: Mandate nutrition labelling of food products by food processing industries.

AGREE

DISAGREE

Method 3.1.1: Develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries.

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- A committee of two doctors working in public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- The commissioner of health assisted by a committee two doctors working in public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of two doctors working in public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of health, Local government service Nigeria.
- Two health practitioners (one public health nurse and one doctor), seconded by the directors of Non-communicable disease division (NCDD), from the state ministry of health and from the local government service.
- Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from Mould Africa; who work with youth on a daily basis.
- Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from mould Africa; who work with youth on a daily basis.
- Director of the department of community development, local government service assisted by community liaison officers from the local government.

If you ticked DISAGREE please proceed to METHOD 3.1.2

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be developed and finalised within after approval of the strategic action plan by the ministry of Health.



3 MONTHS

6 MONTHS

Method 3.1.2: Present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly through the house of assembly commission.

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

The commissioner for health

Supervisor for health

Local government legislators

Director of the department of community development

If you ticked DISAGREE please proceed to METHOD 3.1.3

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be presented to the state house of assembly after developing the policy that mandates nutrient lists to appear on all packaged foods by food processing industries.

- 3 MONTHS
- 9 MONTHS

- 6 MONTHS
- 12 MONTHS

Method 3.1.3: Facilitate inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state.

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- Members of the state house of assembly
- Supervisor for health
- State house of assembly commission
- The commissioner for health
- Local government legislators

If you ticked DISAGREE please proceed to METHOD 3.1.4

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The policy should be passed into law withinmonths after the approval of the policy by the state house of assembly.

6 MONTHS

9 MONTHS

12 MONTHS

18 MONTHS

Method 3.1.4: Ensure enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries.

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- Officials of the National Agency for Food and Drug Administration and Control (NAFDAC).
- Officials of the Nigerian Customs service (NCS).
- Task force constituted by the state ministry of health.

If you ticked DISAGREE please proceed to STRATEGY 4

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries must commence months after passing the policy into law.

- 6 MONTHS
- 12 MONTHS

- 9 MONTHS
- 18 MONTHS

Suggestions/comments

Strategy 4: Introduce interventions to enhance physical activity among youths (15-24 years).

AGREE

DISAGREE

Action statement 4.1: Improve physical activity among youths (15-24 years).

AGREE

DISAGREE

Method 4.1.1: Develop sports competition/recreation programs quarterly, with attached incentives to encourage young people to

participate more in physical activity in order to ensure health promotion.

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- A committee of two doctors working in public health department, two sports scientists and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health and state ministry of youth and sports development, Nigeria.
- The commissioner of health assisted by a committee of two doctors working in public health department, two sports scientists and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.
- Two health practitioners (one public health nurse and one doctor), seconded by the directors of Non-communicable disease division (NCDD), from state ministry of health and the local government service, Nigeria.
- The commissioner for education assisted by a committee of school principals and proprietors appointed by the director of basic and secondary education, state ministry of education, Nigeria.
- The commissioner for youth and sports development assisted by a committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.
- A group of 10 volunteer youths (aged 15-24 years) facilitated by the director of sport, state ministry of youth and sports development, Nigeria.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: Quarterly sports competition/recreation programs with attached incentives to encourage young people participate more in

physical activity should be developed and finalised within after the approval of the strategic action plan by the ministry of youth and sports development.

If you ticked DISAGREE please proceed to METHOD 4.1.2

- | | | | |
|-----------------------|-----------|-----------------------|-----------|
| <input type="radio"/> | 6 MONTHS | <input type="radio"/> | 9 MONTHS |
| <input type="radio"/> | 12 MONTHS | <input type="radio"/> | 18 MONTHS |

Method 4.1.2: Present a budget on building recreation centres, organising sports/events on physical activity and incentives to encourage young people participate more in physical activity to the state governor through the ministry of youth and sports development.

- | | | | |
|-----------------------|-------|-----------------------|----------|
| <input type="radio"/> | AGREE | <input type="radio"/> | DISAGREE |
|-----------------------|-------|-----------------------|----------|

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- | | | | |
|--------------------------|---|--------------------------|----------------------------|
| <input type="checkbox"/> | The commissioner for health | <input type="checkbox"/> | Supervisor for health |
| <input type="checkbox"/> | Local government legislators | <input type="checkbox"/> | Commissioner for education |
| <input type="checkbox"/> | Commissioner for youth and sports development | | |

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The budget should be presented to the state governor after presenting a budget on building recreation centres, organising sports and events on physical activity and incentives for participants.

If you ticked DISAGREE please proceed to STRATEGY 5

- | | | | |
|-----------------------|----------|-----------------------|-----------|
| <input type="radio"/> | 3 MONTHS | <input type="radio"/> | 6 MONTHS |
| <input type="radio"/> | 9 MONTHS | <input type="radio"/> | 12 MONTHS |

Suggestions/comments

Strategy 5: Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritize education on healthy lifestyles.

- | | | | |
|-----------------------|-------|-----------------------|----------|
| <input type="radio"/> | AGREE | <input type="radio"/> | DISAGREE |
|-----------------------|-------|-----------------------|----------|

Action statement 5.1: Prioritize a health promotion curriculum on healthy lifestyle at all levels of education that is focussed on:

SMOKING

AGREE

DISAGREE

ALCOHOL USAGE

AGREE

DISAGREE

PHYSICAL ACTIVITY

AGREE

DISAGREE

HEALTHY DIETS

AGREE

DISAGREE

Method 5.1.1: Develop a curriculum that mandate the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention.



Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- A committee of health educators coordinated by the director of education planning, research and development, state ministry of education Nigeria.
- A committee of school principals and proprietors constituted by the director of basic and secondary education, state ministry of education Nigeria.
- Ad-hoc committee of curriculum development experts constituted by the deputy director of National universities commission (NUC) Nigeria.
The director, National universities commission Nigeria, assisted by an ad-hoc committee of curriculum development experts, the director of education planning, research and development, state ministry of education, the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- Ad-hoc committee of curriculum development experts constituted by the deputy director of National universities commission (NUC) Nigeria, seconded by the commissioner for health, and the commissioner for education, Nigeria.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: The health promotion curriculum for all levels of education must be developed and finalised withinmonths after its approval by the ministry of education.

- 6 MONTHS
- 12 MONTHS

- 9 MONTHS
- 18 MONTHS

If you ticked DISAGREE please proceed to METHOD 5.1.2

Method 5.1.2: Develop electronic media based health promotion activities (Health clubs, talk shows, health debates) for youths on lifestyle's connection to non-communicable diseases in all schools using the following:

SOCIAL MEDIA

AGREE

DISAGREE

TELEVISION PROGRAMS/ ADVERTISEMENT

AGREE

DISAGREE

RADIO JINGLE

AGREE

DISAGREE

INTERNET POP-UP

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education Nigeria.
- A committee of educators (Qualified teachers and lecturers) organised by the director of education planning, research and development, state ministry of education and director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education and director of Non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.
- A team of online peer educators constituted by the director of education planning, research and development, state ministry of education and director of Non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria
- An ad-hoc committee on media communication strategy constituted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.
- A committee of adequate health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- The director, National Broadcasting Commission (NBC), state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by health a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: Social media based, health promotion activities for youths on lifestyle's connection to non-communicable diseases in all schools must be developed and finalised withinmonths after its approval by the ministry of education.



3 MONTHS



6 MONTHS



9 MONTHS



12 MONTHS

Type a question

Strategy 6: Implement a system to secure counselling services to youth (15-24 years) and provide health education to their significant others.



AGREE



DISAGREE

Action statement 6.1: Constitute a support group to provide support to youth (15-24 years) who wish to stop smoking, drinking, physical inactivity and an unhealthy diet.



AGREE



DISAGREE

Method 6.1.1: Provide an accessible peer counselling service to youths (15-24 years) who are willing to quit the following:

SMOKING

AGREE

DISAGREE

ALCOHOL USAGE

AGREE

DISAGREE

PHYSICAL INACTIVITY

AGREE

DISAGREE

UNHEALTHY DIET

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- A committee of six certified health counselors (one person each who major in psychology, nutrition, health care, counselling, nursing and sociology) constituted by the director of Health Promotion Division (HPD), ministry of health Nigeria.
- A committee of rehabilitation experts (two doctors, two psychologists, two social workers and two nurses) constituted by the director of rehabilitation unit, ministry of health Nigeria.
- A team of trained peer counselors constituted by the director of rehabilitation unit, ministry of health Nigeria.
- Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from Mould Africa; who work with youth on a daily basis.
- Director of the department of community development, local government service assisted by community liaison officers from the local government.
- A group of youths, trained as peer counselors, who volunteer to provide counselling to other youths who wish to stop smoking, drinking, physical inactivity and an unhealthy diet, facilitated by the director of sport, state ministry of youth and sports development, Nigeria.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: Accessible peer counselling service to youths (15-24 years) must be made available within months after the action plan is approved by the ministry of health and ministry of education.

3 MONTHS

6 MONTHS

9 MONTHS

12 MONTHS

Action statement 6.2: Offer education programs for parents on the importance of a healthy lifestyle of youths using diverse medium:

AGREE

DISAGREE

Method 6.2.1: Include special information sessions on the

importance of a healthy lifestyle of youths for all parents by means of:

(please tick all appropriate options)

Teachers association (PTA) meetings

AGREE

DISAGREE

Social media

AGREE

DISAGREE

Pamphlets

AGREE

DISAGREE

Information sheets attached to students' results

AGREE

DISAGREE

TV advertisement

AGREE

DISAGREE

Radio jingle

AGREE

DISAGREE

Internet pop-ups

AGREE

DISAGREE

Uploaded curriculum on schools' website

AGREE

DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- An ad-hoc committee on media communication strategy constituted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.
- A committee of adequate health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.

- The director, National Broadcasting Commission(NBC), state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by health a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.
- A committee of school principals and proprietors constituted by the director of basic and secondary education, state ministry of education Nigeria.
- Four members of the parents/teachers association executives invited by the chairman, parents/teachers association.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: Special information sessions on the importance of a healthy lifestyle of youths for all parents using diverse medium must begin within months after the action plan is approved by the ministry of health and ministry of education.

3 MONTHS

6 MONTHS

9 MONTHS

12 MONTHS

Action statement 6.3: Educate families and communities on the need to maintain healthy lifestyle among youths using diverse medium.

AGREE

DISAGREE

Method 6.3.1: Educate families and communities on the need to maintain healthy lifestyle among youths (15-24 years) via attractive advertisements on TV, radio jingle and special announcements at social functions.



AGREE



DISAGREE

Please tick the MOST APPROPRIATE responsible person/s. PLEASE ONLY TICK ONE OPTION.

Responsible person/s:

- An ad-hoc committee on media communication strategy constituted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.
- A committee of community health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
The director, National Broadcasting Commission(NBC), state ministry of information and culture, assisted
- a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.
Director of the department of community development, local government service assisted by community
- liaison officers from the local government and a committee of community health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of community front line officers including one royal father and two Chiefs constituted by the state commissioner for local government and chieftaincy affairs, assisted by five representatives from the community landlord association constituted by the state chairman, landlord association.

Please choose the most appropriate time frame within which each method should be finalized.

Time frame: Education of families and communities should commence within months after the approval of the strategic action plan by the ministry of health.



3 MONTHS

6 MONTHS

Suggestions/comments

If you ticked DISAGREE please press the submit botton

Submit

ANNEXURE 19: VALIDATION TOOL 2

ROUND 2: VALIDATION OF THE DRAFT STRATEGIC ACTION PLAN USING DELPHI TECHNIQUE.

ROUND 2

Dear Panellist,

Where consensus was reached on the items in the first round it will be indicated as such. Please therefore just answer all the questions where consensus was not reached with a click next to the options available. In the spaces provided for comments, please add any comment.

STRATEGY 1: Initiate interventions to reduce tobacco smoking among youths (15 – 24 years) by 25%. (CONSENSUS was reached)

Action statement 1.1 : Control tobacco accessibility to youths (15–24 years). (CONSENSUS was reached)

Method 1.1.1 : Develop a policy to control tobacco sales to youths (15 – 24 years). (CONSENSUS was reached)

Please tick the MOST APPROPRIATE person/s responsible to develop a policy to control tobacco sales to youths. PLEASE ONLY TICK ONE OPTION.

- A committee of two doctors working in public health department and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.

The commissioner for health assisted by a committee of two doctors and two public health nurses working in public health department appointed by the director of Non-communicable disease division

(NCDD), state ministry of health, Nigeria.

A committee of two doctors working in public health department and two public health nurses appointed by the director of health, local government service.

Two health practitioners (one public health nurse and one doctor), seconded by the directors of Non-communicable disease division (NCDD), each from the state ministry of health and from the local government service

Please choose the MOST APPROPRIATE time frame within which the policy to control tobacco sales to youths should be finalized, after approval of the strategic action plan by the ministry of Health.

6 MONTHS

9 MONTHS

12 MONTHS

18 MONTHS

Method 1.1.2: Present the policy to control tobacco sales to youths (15 – 24 years) to the state house of assembly through the house of assembly commission. (CONSENSUS was reached).

Responsible person/s: Commissioner for health. (CONSENSUS was reached).

Please choose the MOST APPROPRIATE time frame within which the policy to control tobacco sales to youths should be presented to the state house of assembly through the house of assembly commission after developing the policy to control tobacco sales to youths.

- Officials of the National Drug Law Enforcement Agency (NDLEA)
- Officials of the Nigerian Customs service (NCS)
- Officials of the Nigerian Police force (NPF).
- Task force constituted by the state ministry of health.
- A combination of officials of the National Drug Enforcement Agency (NDLEA) and Task force constituted by the state ministry of health.

Time frame: 3months (CONSENSUS was reached).

Strategy 2: Introduce interventions to reduce alcohol consumption among youths (15-24years) by 25%. (CONSENSUS was reached).

Action statement 2.1: Control alcohol accessibility to youths (15-24 years). (CONSENSUS was reached).

Method 2.1.1: Develop a policy to control alcohol sales to youths (15-24 years). (CONSENSUS was reached).

Please tick the MOST APPROPRIATE person/s responsible to develop a policy to control alcohol sales to youths. PLEASE ONLY TICK ONE OPTION.

Please choose the MOST APPROPRIATE time frame within which the policy to control alcohol sales to youths should be finalized, after approval of the strategic action plan by the ministry of Health.

6 MONTHS

12 MONTHS

9 MONTHS

18 MONTHS

Method 2.1.2: Present the policy to control alcohol sales to youths (15 – 24 years) to the state house of assembly through the house of assembly commission. (CONSENSUS was reached).

Responsible person: the commissioner for health. (CONSENSUS was reached).

Please choose the MOST APPROPRIATE time frame within which the policy to control alcohol sales to youths should be presented to the state house of assembly through the house of assembly commission after developing the policy to control tobacco sales to youths.

Method 2.1.3: Include the policy in the constitution of the state. (CONSENSUS was reached).

Responsible persons: members of the state house of assembly. (CONSENSUS was reached).

Time frame : 6months. (CONSENSUS was reached).

Method 2.1.4: Ensure enforcement of the law that controls alcohol sales to youths (15-24 years). (CONSENSUS was reached).

Officials of the National Drug Law Enforcement Agency (NDLEA)

Officials of the Nigerian Customs service (NCS).

Officials of the Nigerian Police force (NPF).

Task force constituted by the state ministry of health.

A combination of officials of the National Drug Law enforcement Agency (NDLEA) and task force constituted by the state ministry of health.

3 MONTHS

6 MONTHS

9 MONTHS

12 MONTHS

3 MONTHS

6 MONTHS

9 MONTHS

12 MONTHS

Method 1.1.3: Include the policy in the constitution of the state. (CONSENSUS was reached).

Responsible person/s : Members of the state house of assembly. (CONSENSUS was reached).

Time frame: 6months. (CONSENSUS was reached).

Method 1.1.4: Ensure enforcement of the law that controls tobacco sales to youths (15-24 years). (CONSENSUS was reached).

Please tick the MOST APPROPRIATE person/s responsible to ensure enforcement of the law controlling tobacco sales to youths. PLEASE ONLY TICK ONE OPTION.

A committee of two doctors working in public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.

The commissioner of health assisted by a committee two doctors working in public health department,
 two certified dietitians/nutritionists and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.

A committee of two doctors working in public health department, two certified dietitians/nutritionists and two public health nurses appointed by the director of health, Local government service Nigeria.

Two health practitioners (one public health nurse and one doctor), seconded by the directors of Non-communicable disease division (NCDD), from the state ministry of health and from the local government service.

Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from Mould Africa; who work with youth on a daily basis.

Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from mould Africa; who work with youth on a daily basis.

Director of the department of community development, local government service assisted by community liaison officers from the local government.

Strategy 3: Introduce interventions to improve the consumption of healthy diets among youths (15-24years). (CONSENSUS was reached).

Action statement 3.1: Mandate nutrition labelling of food products by food processing industries. (CONSENSUS was reached).

Method 3.1.1: Develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries. (CONSENSUS was reached).

Please tick the MOST APPROPRIATE person/s responsible to develop a policy that mandates nutrient lists to appear on all packaged foods by food processing industries. PLEASE ONLY TICK ONE OPTION.

3 MONTHS

6 MONTHS

9 MONTHS

18 MONTHS

Please choose the MOST APPROPRIATE time frame within which the policy that mandates nutrient lists to appear on all packaged foods by food processing industries should be finalized, after approval of the strategic action plan by the ministry of Health.

Method 3.1.2: Present the policy that mandates nutrient lists to appear on all packaged foods by food processing industries to the state house of assembly through the house of assembly commission. (CONSENSUS was reached)

Responsible person: the commissioner for health. (CONSENSUS was reached)

Method 3.1.3: Facilitate inclusion of the policy that mandates nutrient lists to appear on all packaged foods by food processing industries in the constitution of the state. (CONSENSUS was reached)

Responsible persons: members of the state house of assembly. (CONSENSUS was reached)

Time frame: 6months. (CONSENSUS was reached)

- Officials of the National Agency for Food and Drug Administration and Control (NAFDAC).
- Officials of the Nigerian Customs service (NCS).
- Task force constituted by the state ministry of health.
- A combination of officials of the National Drug Enforcement Agency (NDLEA) and Task force constituted by the state ministry of health.

Time frame: 6 months. (CONSENSUS was reached)

- 3 MONTHS
- 6 MONTHS
- 9 MONTHS
- 12 MONTHS

- A committee of two doctors working in public health department, two sports scientists and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health and state ministry of youth and sports development, Nigeria.

- The commissioner of health assisted by a committee of two doctors working in public health department, two sports scientists and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.
- Two health practitioners (one public health nurse and one doctor), seconded by the directors of Non-communicable disease division (NCDD), from state ministry of health and the local government service, Nigeria.
- The commissioner for education assisted by a committee of school principals and proprietors appointed by the director of basic and secondary education, state ministry of education, Nigeria.
- The commissioner for youth and sports development assisted by a committee of two sport scientists, two physical and health education instructors appointed by the director of basic and secondary education, state ministry of education, Nigeria.
- A group of 10 volunteer youths (aged 15-24 years) facilitated by the director of sport, state ministry of youth and sports development, Nigeria.

Time frame: 6months. (CONSENSUS was reached)

Method 3.1.4: Ensure enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries. (CONSENSUS was reached)

Please tick the MOST APPROPRIATE person/s responsible to ensure enforcement of the law that mandates nutrient lists to appear on all packaged foods by food processing industries. PLEASE ONLY TICK ONE OPTION.

3 MONTHS
 9 MONTHS

6 MONTHS
 12 MONTHS

Strategy 4: Introduce interventions to enhance physical activity among youths (15-24 years). (CONSENSUS was reached)

Action statement 4.1: Improve physical activity among youths (15-

Method 4.1.1: Develop sports competition/recreation programs quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion. (CONSENSUS was reached)

Please tick the MOST APPROPRIATE person/s responsible to develop a sports competition/recreation programs quarterly, with attached incentives to encourage young people to participate more in physical activity in order to ensure health promotion. PLEASE ONLY TICK ONE OPTION.

Please choose the MOST APPROPRIATE time frame within which a curriculum that mandate the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention should be finalized, after approval of the strategic action plan by the ministry of education.

Method 5.1.2: Develop electronic media based health promotion activities (Health clubs, talk shows, health debates) for youths on lifestyle's connection to non-communicable diseases in all schools using the social media, television programs/advertisement, radio jingle and internet pop-up. (CONSENSUS was reached)

Please tick the MOST APPROPRIATE person/s responsible to develop electronic media based health promotion activities (Health clubs, talk shows, health debates) for youths on lifestyle's connection to non-communicable diseases in all schools. PLEASE ONLY TICK ONE OPTION.

Method 4.1.2: Present a budget to provide access to recreation centres, organising sports/events and incentives to encourage

young people to participate in physical activity, to the state governor through the ministry of youth and sports development. **(CONSENSUS was reached)**

Responsible person: The commissioner for youth and sports development. (CONSENSUS was reached)

Please tick the MOST APPROPRIATE time frame within which to Present a budget to provide access to recreation centres, organising sports/events and incentives to encourage young people to participate in physical activity, to the state governor through the ministry of youth and sports development. PLEASE ONLY TICK ONE OPTION.

Strategy 5: Implement a health promotion curriculum for all levels of education in South-West Nigeria that prioritize education on healthy lifestyles. (CONSENSUS was reached).

Action statement 5.1: Prioritize a health promotion curriculum on healthy lifestyle at all levels of education that is focussed on Smoking, alcohol consumption, physical activity and healthy diets. (CONSENSUS was reached).

Method 5.1.1: Develop a curriculum that mandate the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention. (CONSENSUS was reached).

Please tick the MOST APPROPRIATE person/s responsible to develop a curriculum that mandate the compulsory inclusion of all aspects pertaining to healthy lifestyles and disease prevention. PLEASE ONLY TICK ONE OPTION.

- A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education Nigeria.
- A committee of educators (Qualified teachers and lecturers) organised by the director of education planning, research and development, state ministry of education and director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of educators (Qualified teachers and lecturers) constituted by the director of education planning, research and development, state ministry of education and director of Non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.
- A team of online peer educators constituted by the director of education planning, research and development, state ministry of education and director of Non-communicable disease division (NCDD) state ministry of health Nigeria to be assisted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria
- An ad-hoc committee on media communication strategy constituted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.
- A committee of adequate health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- The director, National Broadcasting Commission (NBC), state ministry of information and culture, seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by health a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria

- A committee of six certified health counselors (one person each who major in psychology, nutrition, health care, counselling, nursing and sociology) constituted by the director of Health Promotion Division (HPD), ministry of health Nigeria.
- A committee of rehabilitation experts (two doctors, two psychologists, two social workers and two nurses) constituted by the director of rehabilitation unit, ministry of health Nigeria.
- A team of trained peer counselors constituted by the director of rehabilitation unit, ministry of health Nigeria.
- Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from Mould Africa; who work with youth on a daily basis.
- Director of the department of community development, local government service assisted by community liaison officers from the local government.
- A group of youths, trained as peer counselors, who volunteer to provide counselling to other youths who wish to stop smoking, drinking, physical inactivity and an unhealthy diet, facilitated by the director of sport, state ministry of youth and sports development, Nigeria.

Please choose the MOST APPROPRIATE time frame within which to provide an accessible peer counselling service to youths (15-24 years) who are willing to quit smoking, alcohol usage, physical inactivity and unhealthy diet.

- A committee of two doctors working in public health department and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
The commissioner of health assisted by a committee of two doctors working in public health department
- and two public health nurses appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- A committee of two doctors working in public health department and two public health nurses appointed by the director of health, Local government service, Nigeria.
Two health practitioners (one public health nurse and one doctor), seconded by the directors of Non-
- communicable disease division (NCDD), from the ministry of health and from the local government service, Nigeria.
- Educators from chartered institute of corporate mentoring and coaching, Nigeria (CICMCN) assisted by educators from Mould Africa; who work with youth on a daily basis.
- Director of the department of community development, local government service assisted by community liaison officers from the local government.

Action statement 6.2: Offer education programs for parents on the importance of a healthy lifestyle of youths using diverse medium. (CONSENSUS was reached)

Method 6.2.1: Include special information sessions on the importance of a healthy lifestyle of youths for all parents by means of teachers association (PTA meetings, social media, pamphlets, information sheets attached to students' results, TV advertisement, radio jingle, internet pop-ups and uploaded curriculum on schools' websites. (CONSENSUS was reached)

Please tick the MOST APPROPRIATE person/s responsible to include special information sessions on the importance of a healthy lifestyle of youths for all parents by means of teachers association (PTA meetings, social media, pamphlets, information sheets attached to students' results, TV advertisement, radio jingle, internet pop-ups and uploaded curriculum on schools' websites. PLEASE ONLY TICK ONE OPTION.

- An ad-hoc committee on media communication strategy constituted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.
- A committee of adequate health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
The director, National Broadcasting Commission(NBC), state ministry of information and culture,
- seconded by the director of basic and secondary education, state ministry of education, Nigeria; and assisted by a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.
- A committee of school principals and proprietors constituted by the director of basic and secondary education, state ministry of education Nigeria.
- Four members of the parents/teachers association executives invited by the chairman, parents/teachers association.

Please choose the most appropriate time frame within which inclusion of special information sessions on the importance of a healthy lifestyle of youths for all parents by means of teachers association (PTA meetings, social media, pamphlets, information sheets attached to students' results, TV advertisement, radio jingle, internet pop-ups and uploaded curriculum on schools' websites be finalized for the action plan is approved by the ministry of health and ministry of education.

3 MONTHS

6 MONTHS

9 MONTHS

12 MONTHS

Strategy 6: Implement a system to secure counselling services to youth (15-24 years) and provide health education to their significant others. (CONSENSUS was reached)

Action statement 6.1: Constitute a support group to provide support to youth (15-24 years) who wish to stop smoking, drinking, physical inactivity and an unhealthy diet. (CONSENSUS was reached)

Method 6.1.1: Provide an accessible peer counselling service to

physical inactivity and unhealthy diet. (CONSENSUS was reached)

- An ad-hoc committee on media communication strategy constituted by the director, National Broadcasting Commission (NBC), state ministry of information and culture Nigeria.
- A committee of community health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
The director, National Broadcasting Commission(NBC), state ministry of information and culture, assisted
- a committee of educators (Qualified teachers and lecturers) set up by the director of education planning, research and development, state ministry of education Nigeria.
Director of the department of community development, local government service assisted by community
- liaison officers from the local government and a committee of community health educators appointed by the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
A committee of community front line officers including one royal father and two Chiefs constituted by the
- state commissioner for local government and chieftaincy affairs, assisted by five representatives from the community landlord association constituted by the state chairman, landlord association.

Please tick the MOST APPROPRIATE person/s responsible to provide an accessible peer counselling service to youths (15-24 years) who are willing to quit smoking, alcohol usage, physical inactivity and unhealthy diet. PLEASE ONLY TICK ONE OPTION.

3 MONTHS

6 MONTHS

9 MONTHS

12 MONTHS

Action statement 6.3: Educate families and communities on the need to maintain healthy lifestyle among youths using diverse medium. (CONSENSUS was reached)

Method 6.3.1: Educate families and communities on the need to maintain healthy lifestyle among youths (15-24 years) via attractive advertisements on TV, radio jingle and special announcements at social functions. (CONSENSUS was reached)

Please tick the MOST APPROPRIATE person/s responsible to educate families and communities on the need to maintain healthy lifestyle among youths (15-24 years) via attractive advertisements on TV, radio jingle and special announcements at social functions. PLEASE ONLY TICK ONE OPTION.

Please choose the most appropriate time frame within which education of families and communities on the need to maintain healthy lifestyle among youths (15-24 years) via attractive advertisements on TV, radio jingle and special announcements at social functions be finalized, after the approval of the strategic action plan by the ministry of health.

Please choose the MOST APPROPRIATE time frame within which the enforcement of the law controlling alcohol sales to youth must commence after passing the policy into law.

Please choose the MOST APPROPRIATE time frame within which the policy that mandates nutrient lists to appear on all packaged foods by food processing industries be presented to the state house of assembly through the house of assembly commission.

- A committee of health educators coordinated by the director of education planning, research and development, state ministry of education Nigeria.
- A committee of school principals and proprietors constituted by the director of basic and secondary education, state ministry of education Nigeria.
- Ad-hoc committee of curriculum development experts constituted by the deputy director of National universities commission (NUC) Nigeria.
- The director, National universities commission Nigeria, assisted by an ad-hoc committee of curriculum development experts, the director of education planning, research and development, state ministry of education, the director of Non-communicable disease division (NCDD), state ministry of health, Nigeria.
- Ad-hoc committee of curriculum development experts constituted by the deputy director of National universities commission (NUC) Nigeria, seconded by the commissioner for health, and the commissioner for education, Nigeria.

6 MONTHS

9 MONTHS

12 MONTHS

18 MONTHS

Please choose the MOST APPROPRIATE time frame within which electronic media based health promotion activities (Health clubs, talk shows, health debates) for youths on lifestyle's connection to non-communicable diseases in all schools should be finalized, after approval of the strategic action plan by the ministry of education.

3 MONTHS

9 MONTHS

6 MONTHS

12 MONTHS

3 MONTHS

9 MONTHS

6 MONTHS

12 MONTHS

3 MONTHS

9 MONTHS

6 MONTHS

12 MONTHS

Submit

ANNEXURE 20: STATISTICIAN'S CURRICULUM VITAE

CURRICULUM VITAE (Statistician)

Full Name: AJAO, Isaac Oluwaseyi
Present Status and Department: Lecturer II, Mathematics and Statistics
Date of Birth: 6th June, 1970.
Place of Birth and State of Origin: Ile-Ife, Osun State
Nationality: Nigerian
Permanent Home Address: Behind Otitolere church, Osere Area,
P.O.Box 5945, Ilorin, Kwara State.
Current Postal Address: Department of Mathematics & Statistics,
The Federal Polytechnic, Ado-Ekiti,
P.M.B. 5351, Ado-Ekiti, Ekiti State.
Mobile Phone No.: 08035252017, 08059707081
E-Mail: isaacoluwaseyiajao@gmail.com
Marital Status: Married
Number and Ages of Children: Three, 8 years, 6 years and 3 year old
respectively.

Educational Institution Attended with Dates:

Saint John's Primary School, Ilorin	1981-1984
Government Secondary School, Ilorin	1985-1990
University Of Ilorin (B.Sc)	1992-1997
University Of Ilorin (M.Sc)	2003
University Of Ilorin (PGDE)	2004-2006

Academic Qualifications with Dates:

First School Leaving Certificate	1981
Senior School Certificate	1990
Bachelor Of Science (B.Sc) in Statistics	1998
Master Of Science (M.Sc) in Statistics	2006
Post Graduate Diploma in Education (PGDE)	2007

Present Employment, Status, Salary and Employer:

Employment: The Federal Polytechnic, Ado-Ekiti, Ekiti State.
Status: Lecturer II
Salary: CONPCASS 11 Step 2
Employer: Governing Council, The Federal Polytechnic, Ado- Ekiti.

Work Experience with Dates:

Mathematics Teacher, Government Secondary School,
Maru, Zamfara state. 1998-1999
Mathematics Teacher, Osun State Teaching Service
Commission (TESCOM), Osogbo. 2002-2006
Further Mathematics Teacher, Osun State Teaching
Service Commission (TESCOM), Osogbo. 2006-2008
Statistics and Mathematics Part-time Lecturer, Osun
State College Of Education, Ilesha. 2007-2008
Statistics Lecturer, The Federal Polytechnic,
Ado-Ekiti, Ekiti-State. 2008 till date

Courses taught:

STA 112 (<i>Elem. Probability Theory</i>)	STH 305 (<i>Biometrics</i>)
STA 123 (<i>Demography I</i>)	STA 324 (<i>Stat. Management & Operations</i>)
BFN 217 (<i>Business Statistics I</i>)	STA 414 (<i>Economic & Social Statistics</i>)
MTH 232 (<i>Business Statistics II</i>)	STA 416 (<i>Medical Statistics</i>)
STA 314 (<i>Operation Research I</i>)	STA 422 (<i>Demography II</i>)

Unpublished Research works:

- 1) Exploratory Statistical Analysis On The Use Of Family Planning Methods In Nigeria: A Generalized Linear Models (GLM) and Generalized Additive Models (GAM) approach (M.Sc thesis)

- 2) A Correlational Study On Students' Achievement In WASSCE and NECO Mathematics between 2000 and 2004 In Ifedayo L.G.A. Of Osun state (PGDE thesis)
- 3) Analysis on Some Quality Characteristics Of Detergent Produced By Global Soap and Detergent Limited, Ilorin (B.Sc thesis)

Published Journal papers:

- 1) **I.O. Ajao**, S.O.Obafemi and S.O.Ige (2009):
Analyzing the Use of Family Planning Methods in Nigeria: A Generalized Linear Models (GLM) Approach, Nigeria Journal of Arts, Science and Technology, Bida, Nigeria. 5(1): 101 – 110
- 2) Obafemi, O.S., **Ajao, I.O.** and Ademuyiwa, J.A. (2010):
Multivariate Approach to Comparing the level of Family Planning Acceptability in Ondo and Ekiti States. International Research Journal, Federal Polytechnic, Ado-Ekiti, Nigeria. 2(1)
- 3) **Ajao, I.O.** Obafemi, O.S. and Lawal, A.S.(2011):
Influence of some Risk factors on Maternal mode of delivery: Binary Logistic Regression Approach. International Journal of Physical Science, Duncan Science Journals, Nigeria. 6(1): 10 – 14
- 4) Awogbemi, C.A., and **Ajao, I.O.** (2011)
Modelling validity in Financial Time series: Evidence From Nigerian Inflation Rate. Ozean Journal of Applied Sciences, Yavuztürk Mahallesi, okulyolu caddesi, mavi kartal sitesi, D-4-A blok daire 27. Uskudar/Istanbul/ TURKEY. 4(3):337-350
- 5) **Ajao, I.O.**, Obafemi, O.S. and Ewumi, T.O. (2011):

Household sanitation and Mortality rate in Nigeria: An Exploratory Analysis. Journal of Applied Sciences in Environmental Sanitation, Department of Environmental Engineering, Subaraya, Indonesia. 6(3): 333-342

6) **Ajao, I.O.**, Awogbemi, C.A. and Ewumi, T.O. (2011)

Towards achieving a Robust Life Expectancy by the year 2020: A statistical Examination of major Global Determining factors. Ozean Journal of Applied Sciences, Yavuztürk Mahallesi, okulyolu caddesi, mavi kartal sitesi, D-4-A blok daire 27. Uskudar/Istanbul/ TURKEY. 4(3): 307- 316

7) Jemilohun, V.G., Adam, S.O. and **Ajao, I.O.** (2011)

A New Method of Estimation of Size-Biased Generalized Logarithmic Series Distribution. Journal of Crown Polytechnic, Ado-Ekiti. 1(1): 109 – 115

8) **Ajao, I.O.**, Awogbemi, C.A. (2012)

A correlational Analysis of Students' Achievement in WAEC and NECO Mathematics in Osun state. Ozean Journal of Applied Sciences, Yavuztürk Mahallesi, okulyolu caddesi, mavi kartal sitesi, D-4-A blok daire 27. Uskudar/Istanbul/ TURKEY. 4(1): 65 - 76

9) **Ajao, I.O.**, Abdullahi, A. A. and Raji, I.I (2012)

Polynomial Regression Model of Making Cost Prediction in Mixed Cost Analysis. Journal of Mathematical Theory and Modeling. 2(2): 14 – 23

10) **Ajao, I.O.**, Ibraheem, A.G. and Ayoola, F.J. (2012)

Cubic Spline Interpolation: A Robust Method of Disaggregating Annual Data to Quarterly Series. Journal of Physical Science and Environmental Safety. Abuja, Nigeria. 2(1): 1 – 8

11) O. O. Awe, **I. O. Ajao** and M. A.Olagunju (2013)

Regression Model Diagnostic, Test and Robustification in the presence of Multi-

collinear Covariates. International Journal of Computer and Electronics Research.

2(2): 122 – 131

12) **I. O. Ajao**, C. A. Awogbemi, and O. O. Awe (2013)

Analysing sub-saharan African Economic Freedoms Using Principal Component Analysis. www.transcampus.org/journals; www.ajol.info/journals/jorind JORIND 11(2): 167 - 181

13) Lawal, Ademola S and **Ajao, Isaac O** (2013)

Statistical Assessment of Gender Differences on Sexuality and Reproductive Health

Knowledge among Undergraduates: A Case of Federal Polytechnic, Bauchi, North

Eastern Nigeria. International Journal of Research Advancement in Physical Science. 3(1): 26 – 30

14) S.O. Ige, O.S. Obafemi and **I.O. Ajao** (2013)

Possible effect of Loss of Information in Reducing scales of measurement.

International Journal of Pure and Applied Sciences and Technology. 18(2): 30 -

38

Published conference papers:

1) Obafemi, O.S. ; Ige, S.O. and **Ajao, I.O.** (2009)

A study of Power Holding Corporation of Nigeria (PHCN) service delivery at Ilorin. International conference & Exhibition, Federal Polytechnic, Ado-Ekiti, Nigeria. 2(1): 175 – 180

Research in Progress;

1) Weibull Regression model for Analysing Child mortality in Nigeria

Conferences attended with dates;

➤ Nigerian Statistical Association 32nd Annual Conference, Ado-Ekiti 27th Oct. - 1st Nov. 2008

- 2nd International Conference and Exhibition. The Federal Polytechnic, Ado-Ekiti 30th Jun - 3rd Jul. 2009.
- Nigerian Statistical Association 33rd Annual Conference, Gusau, Zamfara state 12th- 14th August, 2009.
- 3rd International Conference and Exhibition. The Federal Polytechnic, Ado-Ekiti 30th Jun - 3rd Jul. 2010.
- 2nd International Conference on Culture, Science and Sustainable Development. Salle Audio Visuelle, Universite Nationale du Benin, Abomey-Calavi, Cotonou, Republic of Benin. 23rd – 26th August, 2011.
- 4th SSCS Annual International Conference. The Federal Polytechnic, Ado-Ekiti 2nd - 4th September. 2013.

Training & Workshop attended with dates;

- Workshop on Time Series Analysis. The Federal Polytechnic, Ado-Ekiti. 27th- 28th October, 2008.
- Workshop on Solving One-Way and Two-Way Multivariate Analysis of Variance Problems Using MINITAB and SPSS. Gusau, Zamfara state. 12th – 14th August, 2009.
- Entrepreneurship Education / Training-the-Trainer Workshop. The Federal Polytechnic, Ado-Ekiti, Ekiti state 10th – 18th January, 2011.
- International Workshop and Training in Mathematical Modelling, Neural Network, Data Mining and Scientific Computing with MAPLE and MATLAB, Covenant University, Ota, Ogun state. 23rd – 27th May, 2011.
- Improving the capacity of Mathematical Sciences Lecturers on Research Analysis. National Mathematical Centre, Abuja. 16th – 21st October, 2011.
- Workshop on Tilapia production – The All male Technology, organized by the Fisheries Society of Nigeria (FISON), Ikeja, Lagos state. 17th – 19th April, 2012.
- International Tertiary Institution Top Executive Workshop on Entrepreneurship Education – A priority for the higher education institutions at Mplaza Hotel, Accra, Ghana. 7th -11th October, 2013.

- E-learning Africa, 9th International Conference on ICT for Development, Education and Training, Kampala, Uganda. 28th – 30th May, 2014.

Extra-Curricula Activities

a. Activities within the Polytechnic:

- Departmental Staff Adviser, 21st May, 2009 – date
- Departmental Co-ordinator, Center for Entrepreneurship Development and Vocational Studies (CEDVS), 14th Nov; 2010 – date
- Departmental Assistant Examination Officer, 2011 - 2012
- Member, School of Science and Computer Studies (SSCS) conference committee, 2011/2012
- One of the Examinations officers in CEDVS, 2012 – till date

b. Activities outside the Polytechnic:

- Statistical Data Analysis
- Writing Of Articles
- Photographing and Video Editing
- Playing the Organ

Knowledge of Statistical and Mathematical packages:

R, STATA, SPSS, SAS, MINITAB, MAPLE, MATLAB, and MICROSOFT EXCEL

Professional url:

<http://computationalstatistics.wordpress.com>

Facebook Account:

<https://www.facebook.com/seyi.ajao.3>

Membership of Professional body

Member, Nigerian Statistical Association (NSA). Membership registration no: **2010075**

REFEREES:

Prof. R.A. Ipinyomi

Department of Statistics\

University of Ilorin,

P.M.B. 1515,
Ilorin, Kwara State.

Prof. J.O. Iyaniwura

Department of Statistics,
BOWEN University,
Iwo, Osun state.

Dr. S.B. Adebayo

National Agency for Food and Drug Administration and Control (NAFDAC),
Abuja.

**ANNEXURE 21: THE WHO STEPS INSTRUMENT FOR CHRONIC DISEASE RISK
FACTOR SURVEILLANCE**

WHO STEPS Instrument **(Core and Expanded)**



The WHO STEPwise approach to chronic disease risk factor surveillance (STEPS)

World Health Organization
20 Avenue Appia, 1211 Geneva 27, Switzerland

For further information: www.who.int/chp/steps



**World Health
Organization**

STEPS Instrument

Overview

Introduction This is the generic STEPS Instrument which sites/countries will use to develop their tailored instrument. It contains the:

- CORE items (unshaded boxes)
- EXPANDED items (shaded boxes).

Core Items The Core items for each section ask questions required to calculate basic variables. For example:

- current daily smokers
- mean BMI.

Note: All the core questions should be asked, removing core questions will impact the analysis.

Expanded items The Expanded items for each section ask more detailed information. Examples include:

- use of smokeless tobacco
- sedentary behaviour.

Guide to the columns The table below is a brief guide to each of the columns in the Instrument.

Column	Description	Site Tailoring
Number	This question reference number is designed to help interviewers find their place if interrupted.	Renumber the instrument sequentially once the content has been finalized.
Question	Each question is to be read to the participants	<ul style="list-style-type: none"> • Select sections to use. • Add expanded and optional questions as desired.
Response	This column lists the available response options which the interviewer will be circling or filling in the text boxes. The skip instructions are shown on the right hand side of the responses and should be carefully followed during interviews.	<ul style="list-style-type: none"> • Add site specific responses for demographic responses (e.g. C6). • Change skip question identifiers from code to question number.
Code	The column is designed to match data from the instrument into the data entry tool, data analysis syntax, data book, and fact sheet.	This should never be changed or removed. The code is used as a general identifier for the data entry and analysis.



Participant Identification Number

WHO STEPS Instrument for Chronic Disease Risk Factor Surveillance

<insert country/site name>

Survey Information

Location and Date		Response	Code
1	Cluster/Centre/Village ID	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	I1
2	Cluster/Centre/Village name		I2
3	Interviewer ID	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	I3
4	Date of completion of the instrument	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> dd mm year	I4

----- ✂

		Participant Id Number	
Consent, Interview Language and Name		Response	Code
5	Consent has been read and obtained	Yes 1 No 2 IF NO, END	I5
6	Interview Language <i>[Insert Language]</i>	English 1 <i>[Add others]</i> 2 <i>[Add others]</i> 3 <i>[Add others]</i> 4	I6
7	Time of interview (24 hour clock)	<input type="text"/> <input type="text"/> : <input type="text"/> <input type="text"/> hrs mins	I7
8	Family Surname		I8
9	First Name		I9
Additional Information that may be helpful			
10	Contact phone number where possible		I10

Record and file identification information (I5 to I10) separately from the completed questionnaire.

Step 1 Demographic Information

CORE: Demographic Information			
Question	Response		Code
11	Sex (Record Male / Female as observed)	Male 1 Female 2	C1
12	What is your date of birth? <i>Don't Know 77 77 7777</i>	_ _ _ _ _ _ _ _ _ _ _ _ <i>If known, Go to C-4</i> dd mm year	C2
13	How old are you?	Years _ _	C3
14	In total, how many years have you spent at school or in full-time study (excluding pre-school)?	Years _ _	C4
EXPANDED: Demographic Information			
15	What is the highest level of education you have completed? <i>[INSERT COUNTRY-SPECIFIC CATEGORIES]</i>	No formal schooling 1 Less than primary school 2 Primary school completed 3 Secondary school completed 4 High school completed 5 College/University completed 6 Post graduate degree 7 Refused 88	C5
16	What is your <i>[insert relevant ethnic group / racial group / cultural subgroup / others]</i> background ?	<i>[Locally defined]</i> 1 <i>[Locally defined]</i> 2 <i>[Locally defined]</i> 3 Refused 88	C6
17	What is your marital status ?	Never married 1 Currently married 2 Separated 3 Divorced 4 Widowed 5 Cohabiting 6 Refused 88	C7
18	Which of the following best describes your main work status over the past 12 months? <i>[INSERT COUNTRY-SPECIFIC CATEGORIES]</i> <i>(USE SHOWCARD)</i>	Government employee 1 Non-government employee 2 Self-employed 3 Non-paid 4 Student 5 Homemaker 6 Retired 7 Unemployed (able to work) 8 Unemployed (unable to work) 9 Refused 88	C8
19	How many people older than 18 years, including yourself, live in your household?	Number of people _ _	C9

EXPANDED: Tobacco Use		
Question	Response	Code
27	In the past, did you ever smoke daily? Yes 1 No 2 <i>If No, go to T9</i>	T6
28	How old were you when you stopped smoking daily? Age (years) Don't Know 77 <input type="text"/> <i>If Known, go to T9</i>	T7
29	How long ago did you stop smoking daily? <i>(RECORD ONLY 1, NOT ALL 3)</i> Don't Know 77	T8a
	OR Months ago <input type="text"/> <i>If Known, go to T9</i>	T8b
	OR Weeks ago <input type="text"/>	T8c
30	Do you currently use any smokeless tobacco such as <i>[snuff, chewing tobacco, betel]</i> ? <i>(USE SHOWCARD)</i> Yes 1 No 2 <i>If No, go to T12</i>	T9
31	Do you currently use smokeless tobacco products daily ? Yes 1 No 2 <i>If No, go to T12</i>	T10
32	On average, how many times a day do you use <i>(RECORD FOR EACH TYPE, USE SHOWCARD)</i> Don't Know 77	T11a
	Snuff, by mouth <input type="text"/>	T11b
	Snuff, by nose <input type="text"/>	T11c
	Chewing tobacco <input type="text"/>	T11d
	Betel, quid <input type="text"/>	T11e
	Other <input type="text"/> <i>If Other, go to T11other, else go to T13</i>	T11other
Other (specify) <input type="text"/> <i>Go to T13</i>		
33	In the past , did you ever use smokeless tobacco such as <i>[snuff, chewing tobacco, or betel]</i> daily ? Yes 1 No 2	T12
34	During the past 7 days, on how many days did someone in your home smoke when you were present? Number of days Don't know 77 <input type="text"/>	T13
35	During the past 7 days, on how many days did someone smoke in closed areas in your workplace (in the building, in a work area or a specific office) when you were present? Number of days Don't know or don't work in a closed area 77 <input type="text"/>	T14

CORE: Alcohol Consumption			
The next questions ask about the consumption of alcohol.			
Question	Response	Code	
36	Have you ever consumed an alcoholic drink such as beer, wine, spirits, fermented cider or <i>(add other local examples)?</i> <i>(USE SHOWCARD OR SHOW EXAMPLES)</i>	Yes 1 No 2 <i>If No, go to D1</i>	A1a
37	Have you consumed an alcoholic drink within the past 12 months?	Yes 1 No 2 <i>If No, go to D1</i>	A1b
38	During the past 12 months, how frequently have you had at least one alcoholic drink? <i>(READ RESPONSES, USE SHOWCARD)</i>	Daily 1 5-6 days per week 2 1-4 days per week 3 1-3 days per month 4 Less than once a month 5	A2
39	Have you consumed an alcoholic drink within the past 30 days?	Yes 1 No 2 <i>If No, go to D1</i>	A3
40	During the past 30 days, on how many occasions did you have at least one alcoholic drink?	Number Don't know 77	A4
41	During the past 30 days, when you drank alcohol, on average, how many standard alcoholic drinks did you have during one drinking occasion? <i>(USE SHOWCARD)</i>	Number Don't know 77	A5
42	During the past 30 days, what was the largest number of standard alcoholic drinks you had on a single occasion, counting all types of alcoholic drinks together?	Largest number Don't Know 77	A6
43	During the past 30 days, how many times did you have for men: five or more for women: four or more standard alcoholic drinks in a single drinking occasion?	Number of times Don't Know 77	A7

EXPANDED: Alcohol Consumption			
44	During the past 30 days, when you consumed an alcoholic drink, how often was it with meals? Please do not count snacks.	Usually with meals 1 Sometimes with meals 2 Rarely with meals 3 Never with meals 4	A8
45	During each of the past 7 days, how many standard alcoholic drinks did you have each day? <i>(USE SHOWCARD)</i> <i>Don't Know 77</i>	Monday	A9a
		Tuesday	A9b
		Wednesday	A9c
		Thursday	A9d
		Friday	A9e
		Saturday	A9f
		Sunday	A9g

CORE: Physical Activity			
<p>Next I am going to ask you about the time you spend doing different types of physical activity in a typical week. Please answer these questions even if you do not consider yourself to be a physically active person.</p> <p>Think first about the time you spend doing work. Think of work as the things that you have to do such as paid or unpaid work, study/training, household chores, harvesting food/crops, fishing or hunting for food, seeking employment. <i>[Insert other examples if needed]</i>. In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.</p>			
Question		Response	Code
Work			
52	Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like <i>[carrying or lifting heavy loads, digging or construction work]</i> for at least 10 minutes continuously? <i>[INSERT EXAMPLES] (USE SHOWCARD)</i>	<p>Yes 1</p> <p>No 2 <i>If No, go to P 4</i></p>	P1
53	In a typical week, on how many days do you do vigorous-intensity activities as part of your work?	Number of days _	P2
54	How much time do you spend doing vigorous-intensity activities at work on a typical day?	Hours : minutes _ _ : _ _ hrs mins	P3 (a-b)
55	Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking <i>[or carrying light loads]</i> for at least 10 minutes continuously? <i>[INSERT EXAMPLES] (USE SHOWCARD)</i>	<p>Yes 1</p> <p>No 2 <i>If No, go to P 7</i></p>	P4
56	In a typical week, on how many days do you do moderate-intensity activities as part of your work?	Number of days _	P5
57	How much time do you spend doing moderate-intensity activities at work on a typical day?	Hours : minutes _ _ : _ _ hrs mins	P6 (a-b)
Travel to and from places			
<p>The next questions exclude the physical activities at work that you have already mentioned.</p> <p>Now I would like to ask you about the usual way you travel to and from places. For example to work, for shopping, to market, to place of worship. <i>[Insert other examples if needed]</i></p>			
58	Do you walk or use a bicycle (<i>pedal cycle</i>) for at least 10 minutes continuously to get to and from places?	<p>Yes 1</p> <p>No 2 <i>If No, go to P 10</i></p>	P7
59	In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places?	Number of days _	P8
60	How much time do you spend walking or bicycling for travel on a typical day?	Hours : minutes _ _ : _ _ hrs mins	P9 (a-b)

Participant Identification Number

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CORE: Physical Activity, Continued		
Question	Response	Code
Recreational activities		
The next questions exclude the work and transport activities that you have already mentioned. Now I would like to ask you about sports, fitness and recreational activities (leisure), <i>[Insert relevant terms]</i> .		
61	Do you do any vigorous-intensity sports, fitness or recreational (<i>leisure</i>) activities that cause large increases in breathing or heart rate like <i>[running or football]</i> for at least 10 minutes continuously? <i>[INSERT EXAMPLES] (USE SHOWCARD)</i>	Yes 1 No 2 <i>If No, go to P13</i>
62	In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (<i>leisure</i>) activities?	Number of days <input type="text"/>
63	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?	Hours : minutes <input type="text"/> : <input type="text"/> hrs mins
64	Do you do any moderate-intensity sports, fitness or recreational (<i>leisure</i>) activities that cause a small increase in breathing or heart rate such as brisk walking, <i>[cycling, swimming, volleyball]</i> for at least 10 minutes continuously? <i>[INSERT EXAMPLES] (USE SHOWCARD)</i>	Yes 1 No 2 <i>If No, go to P16</i>
65	In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (<i>leisure</i>) activities?	Number of days <input type="text"/>
66	How much time do you spend doing moderate-intensity sports, fitness or recreational (<i>leisure</i>) activities on a typical day?	Hours : minutes <input type="text"/> : <input type="text"/> hrs mins

EXPANDED: Physical Activity		
Sedentary behaviour		
The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping. <i>[INSERT EXAMPLES] (USE SHOWCARD)</i>		
67	How much time do you usually spend sitting or reclining on a typical day?	Hours : minutes <input type="text"/> : <input type="text"/> hrs mins

Participant Identification Number

|_|_|_| |_|_|_| |_|_|_|

CORE: History of Raised Blood Pressure			
Question		Response	Code
68	Have you ever had your blood pressure measured by a doctor or other health worker?	Yes 1	H1
		No 2 <i>If No, go to H6</i>	
69	Have you ever been told by a doctor or other health worker that you have raised blood pressure or hypertension?	Yes 1	H2a
		No 2 <i>If No, go to H6</i>	
70	Have you been told in the past 12 months?	Yes 1	H2b
		No 2	

EXPANDED: History of Raised Blood Pressure			
	Are you currently receiving any of the following treatments/advice for high blood pressure prescribed by a doctor or other health worker?		
	Drugs (medication) that you have taken in the past two weeks	Yes 1	H3a
		No 2	
	Advice to reduce salt intake	Yes 1	H3b
		No 2	
71	Advice or treatment to lose weight	Yes 1	H3c
		No 2	
	Advice or treatment to stop smoking	Yes 1	H3d
		No 2	
	Advice to start or do more exercise	Yes 1	H3e
		No 2	
72	Have you ever seen a traditional healer for raised blood pressure or hypertension?	Yes 1	H4
		No 2	
73	Are you currently taking any herbal or traditional remedy for your raised blood pressure?	Yes 1	H5
		No 2	

Participant Identification Number

|_|_|_|_| |_|_|_|_| |_|_|_|_|

CORE: History of Diabetes			
Question		Response	Code
74	Have you ever had your blood sugar measured by a doctor or other health worker?	Yes 1	H6
		No 2 <i>If No, go to M1</i>	
75	Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes?	Yes 1	H7a
		No 2 <i>If No, go to M1</i>	
76	Have you been told in the past 12 months?	Yes 1	H7b
		No 2	

EXPANDED: History of Diabetes			
77	Are you currently receiving any of the following treatments/advice for diabetes prescribed by a doctor or other health worker?		
	Insulin	Yes 1	H8a
		No 2	
	Drugs (medication) that you have taken in the past two weeks	Yes 1	H8b
		No 2	
	Special prescribed diet	Yes 1	H8c
		No 2	
	Advice or treatment to lose weight	Yes 1	H8d
		No 2	
	Advice or treatment to stop smoking	Yes 1	H8e
		No 2	
	Advice to start or do more exercise	Yes 1	H8f
		No 2	
	78	Have you ever seen a traditional healer for diabetes or raised blood sugar?	Yes 1
No 2			
79	Are you currently taking any herbal or traditional remedy for your diabetes?	Yes 1	H10
		No 2	

Step 2 Physical Measurements

CORE: Height and Weight			
Question	Response		Code
80	Interviewer ID	_ _ _ _	M1
81	Device IDs for height and weight	Height _ _ _	M2a
		Weight _ _ _	M2b
82	Height	in Centimetres (cm) _ _ _ _ . _	M3
83	Weight <i>If too large for scale 666.6</i>	in Kilograms (kg) _ _ _ _ . _	M4
84	For women: Are you pregnant?	Yes 1 <i>If Yes, go to M 8</i>	M5
		No 2	
CORE: Waist			
85	Device ID for waist	_ _ _	M6
86	Waist circumference	in Centimetres (cm) _ _ _ _ . _	M7
CORE: Blood Pressure			
87	Interviewer ID	_ _ _ _	M8
88	Device ID for blood pressure	_ _ _	M9
89	Cuff size used	Small 1	M10
		Medium 2	
		Large 3	
90	Reading 1	Systolic (mmHg) _ _ _ _	M11a
		Diastolic (mmHg) _ _ _ _	M11b
91	Reading 2	Systolic (mmHg) _ _ _ _	M12a
		Diastolic (mmHg) _ _ _ _	M12b
92	Reading 3	Systolic (mmHg) _ _ _ _	M13a
		Diastolic (mmHg) _ _ _ _	M13b
93	During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?	Yes 1	M14
		No 2	
EXPANDED: Hip Circumference and Heart Rate			
94	Hip circumference	in Centimeters (cm) _ _ _ _ . _	M15
95	Heart Rate		
	Reading 1	Beats per minute _ _ _ _	M16a
	Reading 2	Beats per minute _ _ _ _	M16b
	Reading 3	Beats per minute _ _ _ _	M16c

Step 3 Biochemical Measurements

CORE: Blood Glucose			
Question		Response	Code
96	During the past 12 hours have you had anything to eat or drink, other than water?	Yes 1 No 2	B1
97	Technician ID	_ _ _ _ _	B2
98	Device ID	_ _ _	B3
99	Time of day blood specimen taken (24 hour clock)	Hours : minutes hrs mins _ _ _ : _ _ _	B4
100	Fasting blood glucose <i>Choose accordingly: mmol/l or mg/dl</i>	mmol/l _ _ _ . _ _ _	B5
		mg/dl _ _ _ _ . _	
101	Today, have you taken insulin or other drugs (medication) that have been prescribed by a doctor or other health worker for raised blood glucose?	Yes 1 No 2	B6
CORE: Blood Lipids			
102	Device ID	_ _ _	B7
103	Total cholesterol <i>Choose accordingly: mmol/l or mg/dl</i>	mmol/l _ _ _ . _ _ _	B8
		mg/dl _ _ _ _ . _	
104	During the past two weeks, have you been treated for raised cholesterol with drugs (medication) prescribed by a doctor or other health worker?	Yes 1 No 2	B9
EXPANDED: Triglycerides and HDL Cholesterol			
105	Triglycerides <i>Choose accordingly: mmol/l or mg/dl</i>	mmol/l _ _ _ . _ _ _	B10
		mg/dl _ _ _ _ . _	
106	HDL Cholesterol <i>Choose accordingly: mmol/l or mg/dl</i>	mmol/l _ . _ _ _	B11
		mg/dl _ _ _ _ . _	

ANNEXURE 22: KREJCIE & MORGAN TABLE FOR DETERMINING SAMPLE SIZE FOR RESEARCH ACTIVITIES

TABLE 1
Table for Determining Sample Size from a Given Population

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.
S is sample size.

Source: Krejcie, R.V., & Morgan, D.W. (1970). Determining Sample Size for Research Activities.

ANNEXURE 23: LETTER OF APPRECIATION

Dear Panelist,

I want to sincerely appreciate you for your time and valuable contributions to the successful validation of the draft strategic action plan. I have incorporated your inputs as your opinion in the Delphi rounds helped to enhance the acceptability and feasibility of the strategic action plan. Thank you so much.

Yours sincerely,



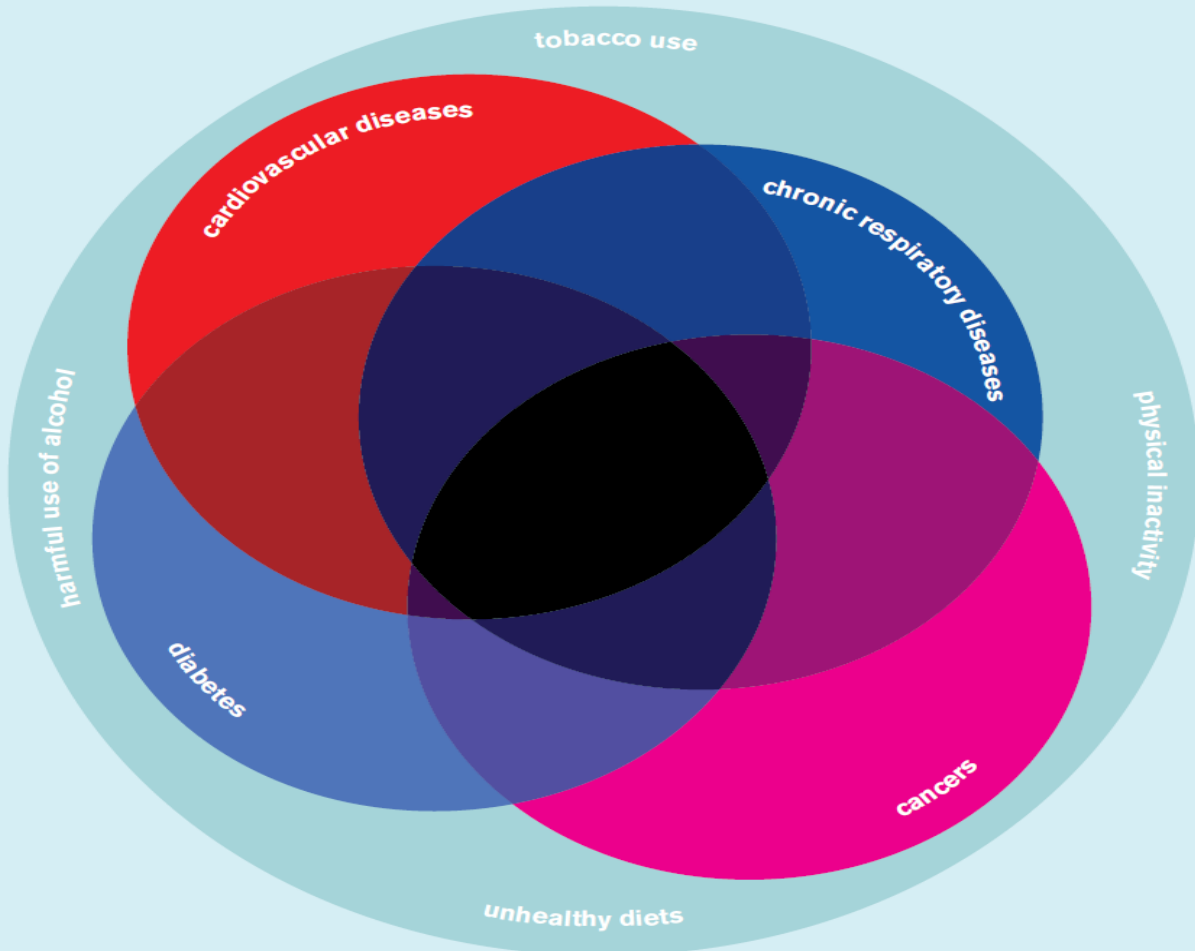
Adeosun, Foluke Odunayo.

ANNEXURE 24: WHO 2018 – 2013 ACTION PLAN FOR THE GLOBAL STRATEGY FOR THE PREVENTION AND CONTROL OF NON-COMMUNICABLE DISEASES

Working in partnership to prevent and control the 4 noncommunicable diseases – cardiovascular diseases, diabetes, cancers and chronic respiratory diseases and the 4 shared risk factors – tobacco use, physical inactivity, unhealthy diets and the harmful use of alcohol.



2008-2013 Action Plan
for the Global Strategy
for the Prevention and Control
of Noncommunicable Diseases



The six objectives of the 2008-2013 Action Plan are:

1.

To raise the priority accorded to noncommunicable disease in development work at global and national levels, and to integrate prevention and control of such diseases into policies across all government departments

4.

To promote research for the prevention and control of noncommunicable diseases

2.

To establish and strengthen national policies and plans for the prevention and control of noncommunicable diseases

3.

To promote interventions to reduce the main shared modifiable risk factors for noncommunicable diseases : tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol

5.

To promote partnerships for the prevention and control of noncommunicable diseases

6.

To monitor noncommunicable diseases and their determinants and evaluate progress at the national, regional and global levels

WHO Library Cataloguing-in-Publication Data

2008-2013 action plan for the global strategy for the prevention and control of noncommunicable diseases : prevent and control cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.

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Purpose

- 2 In leading and catalysing an intersectoral, multilevel response, with a particular focus on low- and middle-income countries and vulnerable populations, the plan has the overall purpose of:
- mapping the emerging epidemics of noncommunicable diseases and analysing their social, economic, behavioural and political determinants as the basis for providing guidance on the policy, programmatic, legislative and financial measures that are needed to support and monitor the prevention and control of noncommunicable diseases;
 - reducing the level of exposure of individuals and populations to the common modifiable risk factors for noncommunicable diseases – namely, tobacco use, unhealthy diet and physical inactivity, and the harmful use of alcohol – and their determinants, while at the same time strengthening the capacity of individuals and populations to make healthier choices and follow lifestyle patterns that foster good health; and
 - strengthening health care for people with noncommunicable diseases by developing evidence-based norms, standards and guidelines for cost-effective interventions and by reorienting health systems to respond to the need for effective management of diseases of a chronic nature.
- 3 The plan is based on current scientific knowledge, available evidence and a review of international experience. It comprises a set of actions which, when performed collectively by Member States and other stakeholders, will tackle the growing public health burden imposed by noncommunicable diseases. In order for the plan to be implemented successfully, high-level political commitment and the concerted involvement of governments, communities and health-care providers are required; in addition, public health policies will need to be reoriented and allocation of resources improved.

Scope

- 4 Current evidence indicates that four types of noncommunicable diseases – cardiovascular diseases, cancers, chronic respiratory diseases and diabetes – make the largest contribution to mortality in the majority of low- and middle-income countries and require concerted, coordinated action. These diseases are largely preventable by means of effective interventions that tackle shared risk factors, namely: tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. In addition, improved disease management can reduce morbidity, disability, and death and contribute to better health outcomes.
- 5 The four types of diseases and their risk factors are considered together in this action plan in order to emphasize common causes and highlight potential synergies in prevention and control. This is not to imply, however, that all the risk factors are associated in equal measure with each of the diseases. Details of disease-related causal links and interventions are provided in the relevant strategies and instruments, namely: the WHO Framework Convention on Tobacco Control, and WHO's Global Strategy on Diet, Physical Activity and Health. A similar approach to diseases and health conditions is being followed as part of WHO's work to reduce the harmful use of alcohol.¹

¹ Actions proposed in this plan are in accordance with existing WHO instruments and strategies to reduce alcohol-related harm including, at regional level, resolution SEA/RC59/R8, resolution EUR/RC55/R1, resolution EM/RC53/R5, resolution WPR/RC57/R5. Further work will be guided by the outcome of current global processes for tackling harmful use of alcohol.

- 6** Within any country, there will be a range of diseases, disabilities and conditions for which the risk factors and the needs for screening, treatment and care overlap with those for noncommunicable diseases considered in this action plan. Among these are blindness, deafness, oral diseases, certain genetic diseases, and other diseases of a chronic nature, including some communicable diseases like HIV/AIDS and tuberculosis. The demands that noncommunicable diseases place on patients, families and health-care systems are also similar to those imposed by some communicable diseases, and comparable strategies are effective for their management.¹
- 7** The priorities for action cut across all WHO regions, reflecting similar challenges in many areas: intersectoral collaboration, partnerships and networking, capacity strengthening in countries and in WHO country offices, resource mobilization, and strategic support for collaborative research.

Relationship to existing strategies and plans

- 8** The foundation for this action plan is the global strategy for the prevention and control of noncommunicable diseases, whose aim to reduce premature mortality and improve quality of life was reaffirmed by the Health Assembly in 2000 (resolution WHA53.17). The plan also builds on the implementation of the WHO Framework Convention on Tobacco Control, adopted by the Health Assembly in 2003 (resolution WHA56.1), and the Global Strategy on Diet, Physical Activity and Health, endorsed by the Health Assembly in 2004 (resolution WHA57.17). The plan also focuses on the harmful use of alcohol as a risk factor for noncommunicable diseases on the basis of continuing work in WHO and the resolutions of its governing bodies, including the regional committees. The plan is also guided by the Medium-term strategic plan 2008–2013 and the Eleventh General Programme of Work. The actions for the Secretariat set out in the plan are aligned with strategic objective 3 and strategic objective 6 in the Medium-term strategic plan 2008–2013, which provide details of expected results, targets and indicators for the Organization's work on prevention and control of noncommunicable diseases.
- 9** This plan is intended to support coordinated, comprehensive and integrated implementation of strategies and evidence-based interventions across individual diseases and risk factors, especially at the national level. The aim is to provide an overall direction to support the implementation of national and regional strategies and action plans, where these have been elaborated and the development of sound and feasible action plans where none exist. The action plan will, therefore, support the continued and strengthened implementation of regional resolutions and plans.²

¹ There are many other noncommunicable conditions of public-health importance. They include osteoporosis, renal diseases, oral diseases, genetic diseases, neurological diseases, and diseases causing blindness and deafness. Many of these conditions are the subjects of other WHO strategies, action plans and technical guidance and are therefore not considered directly by this plan. Similarly, mental health disorders are not included here despite the heavy burden of disease that they impose, as they do not share the same risk factors (other than the harmful use of alcohol), and because they require different intervention strategies. Public-health considerations in the area of mental health are covered in the WHO mental health gap action programme, the implementation of whose strategies, programmes and policies was recognized as a need in resolution WHA 55.10.

² The following are included: resolution AFR/RC50/R4, "Noncommunicable diseases: strategy for the African Region"; resolution CD47/R9 "Regional strategy and plan of action on an integrated approach to the prevention and control of chronic diseases, including diet, physical activity"; resolution SEA/RC60/R4, "Scaling up prevention and control of chronic noncommunicable diseases in the South - East Asia Region"; resolution EUR/RC56/R2, "Prevention and Control of Noncommunicable Diseases in the WHO European Region"; resolution EM/RC52/R7, "Noncommunicable diseases: challenges and strategic directions"; and resolution WPR/RC57/R4, "Noncommunicable disease prevention and control".

ANNEXURE 25: LANGUAGE EDITING CERTIFICATE

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13 December 2020

To whom it may concern:

I hereby confirm that I have edited the thesis entitled: "A STRATEGIC ACTION PLAN TO IMPROVE YOUTHS' LIFESTYLES AND DECREASE NON-COMMUNICABLE DISEASES IN SOUTH-WEST NIGERIA". Any amendments introduced by the author hereafter are not covered by this confirmation. The author ultimately decided whether to accept or decline any recommendations made by the editor, and it remains the author's responsibility at all times to confirm the accuracy and originality of the completed work.



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ANNEXURE 26: TURNITIN REPORT

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