Chapter 3

Research methodology

3.1 INTRODUCTION

This chapter outlines the research methodology of this study. The research was conducted in two phases and the research methodology will thus be discussed under the two phases. Data in Phase 1 were collected by using a qualitative approach. Written narratives were obtained from South African nurses working and living in other countries. In Phase 2 a quantitative approach was followed. Data in this phase were obtained through a structured questionnaire completed by nurses who completed their basic training in 2002.

3.2 RESEARCH OBJECTIVES

The objectives of this study were to

- identify and describe the internal and external factors that contribute to the emigration of South African nurses
- explore and describe the experiences of South African nurses working in other countries
- make recommendations for enabling larger numbers of South African nurses to continue working in the RSA (by addressing internal and external factors contributing to their emigration potential)
- recommend strategies to recruit ex-South African nurses working in other countries to return to the RSA as practising professional nurses

3.3 RESEARCH DESIGN

According to Burns and Grove (1997:225), the design of a study is the end result of a series of decisions made by the researcher concerning how the study will be conducted. The design is closely associated with the framework of the study and guides planning for implementing

the study. It is a blueprint for conducting the study that maximises control over factors that could interfere with the validity of the findings. According to Polit and Hungler (1995:160), research designs vary with regard to how much structure the researcher imposes on the research situation and how much flexibility is allowed once the study is under way. The research designs of most quantitative studies are highly structured, while the research designs in qualitative studies are more fluid. This study allowed for a structured approach in Phase 2 and a less structured approach in Phase 1. Data in Phase 2 were collected by means of a structured questionnaire. In Phase 1, South African nurses working in other countries contributed by writing narratives guided by four open-ended questions.

A method that is often used to obtain information on social and behavioural variables and the relationships between these variables is survey research, in which the researcher selects a sample or subgroup of people and asks them questions about issues related to the research. The answers to these questions are then regarded as a description identifying the opinions and attitudes of the whole population from which the sample was taken (Unisa 2000:133). Surveys are conducted for the general purpose of obtaining information about practices, opinions, attitudes and other characteristics of people. According to Knapp (1998:67), the most basic function of a survey is description, although an explanation of why people believe or behave as they do, comparison, and prediction of responses with regard to the variables of interest may be additional objectives. In this study a survey was conducted in Phase 2 to identify and describe factors contributing to newly qualified South African registered nurses' decisions to emigrate or to stay in South Africa.

It is also possible to do research using more open techniques, known as qualitative research. Qualitative research focuses on meaning, experience and understanding and therefore these designs give the researcher the opportunity to interact with the individuals or groups whose experiences the researcher wants to understand. In this study, data in Phase 1 were collected using a qualitative approach.

3.3.1 Descriptive exploratory design

Survey studies are classified as descriptive or exploratory research designs. Lo Biondo-Wood and Haber (1994:233) point out that the terms "exploratory", "descriptive" and "survey"

are used either alone, interchangeably or together to describe the design of a study. According to Polit and Hungler (1999:16), *description* can be a major purpose of both qualitative and quantitative research studies. With the descriptive design, the researcher plans to gain more information about a phenomenon within a particular field of study. *Exploratory* studies provide an in-depth exploration of a single process (in this study the emigration of South African nurses), while descriptive studies examine the characteristics of a specific single population (Brink & Wood 1994:106). Like descriptive research, exploratory research begins with some phenomenon of interest, but rather than simply observing and describing it, exploratory research aims at investigating the full nature of the phenomenon, the manner in which it is manifested, and the other factors with which it is related. An exploratory study is undertaken when a new area or topic is being investigated (Polit & Hungler 1999:17-18). Since no evidence was found in the literature review of similar studies on the emigration of South African nurses, this study attempted to investigate, describe and explore this new area of interest for nursing. This research was conducted in two phases and two populations were identified for this study. An exploratory, descriptive design was used in this study to describe the phenomenon of emigration of South African nurses in two phases.

3.4 TRIANGULATION

According to De Vos, Strydom, Fouche and Delport (2002:365), the concept of triangulation is sometimes used to designate a conscious combination of qualitative and quantitative methodology. However, they cite Mouton and Marais (1990), who argue that the term triangulation refers mainly to the use of multiple methods of data collection with a view to increasing the reliability of observation, and not specifically to the combination of quantitative and qualitative approaches. In their discussion on triangulation Babbie and Mouton (2001:275) cite Denzin (1989), who explains the advantage of triangulation as follows: “By combining methods and investigators in the same study, observers can partially overcome the deficiencies that flow from one investigator or method”. Another advantage of designing multi-method research lies in the potential for enhancement of the validity of the study findings. According to Polit and Hungler (1999:259), a researcher can be much more confident about the validity of the findings when they are supported by multiple and complementary types of data.

Triangulation of method referring both to mixing qualitative and quantitative approaches of research and data triangulation, and to the use of multiple data sources in a study, was used in this study. A qualitative approach was used in Phase 1 of the study and a quantitative approach was used in Phase 2 of the study. Multiple sources of data were used in the study. In Phase 1 data were obtained through narrative sketches from South African nurses working in other countries, while in Phase 2 data were collected from newly qualified nurses on the register of the SANC by means of postal questionnaires. It is believed that the use of triangulation of both method and data gave a more comprehensive picture of the factors contributing to South African nurses' emigration. According to Polit and Hungler (1999:429), the purpose of triangulation is to provide a basis for convergence on the truth. They state that "by using multiple methods and perspectives, researchers strive to sort out 'true' information from 'error' information".

3.5 ORGANISATION OF THE STUDY

The study was conducted in two phases and the methodology used in each phase will be discussed separately.

Data in **Phase 1** (see Section 3.6) were collected using a qualitative approach. South African nurses working in other countries were requested to write their stories guided by four questions that related to the reasons why they left the RSA, their experiences in the other countries and intentions to return to South Africa. They were also requested to comment on the services of recruitment agencies.

In **Phase 2** (see Section 3.7) a quantitative approach was used. Questionnaires were mailed to a sample of professional nurses registered with the South African Nursing Council (SANC) who had completed basic courses during 2002.

Because of the different approaches and the uniqueness of the steps in the different approaches, the methodology is, for the sake of clarity, discussed under the two separate phases.

3.6 PHASE 1: QUALITATIVE APPROACH

According to De Vos et al (2002:79), the qualitative research paradigm, in its broadest sense, refers to research that elicits participant accounts of meaning, experience or perceptions. It produces descriptive data in the participant's own written or spoken words. A qualitative study is concerned with non-statistical methods and small purposively selected samples. Polit and Hungler (1999:18) maintain that a qualitative method is especially useful for exploring the full nature of a little-understood phenomenon. Little was known about the phenomenon of South African nurses who leave South Africa to practise in other countries. A qualitative research design was therefore chosen to obtain narrative sketches from South African nurses working in other countries with regard to their reasons for leaving South Africa and their experiences of nursing practice in other countries. These written narratives were obtained by e-mail, or where participants did not have access to e-mail, they posted the narratives to the researcher. Bogdan and Biklen (1992:132) use the phrase "personal documents" to refer to any first-person narrative that describes an individual's actions, experiences and beliefs; they state that the criterion for calling written material "personal documents" is that they should be self-revealing of a person's view of experiences. According to Streubert and Carpenter (1999:25), written narratives permit participants to think about what they wish to share. Burns and Grove (2003:377) maintain that text is considered a rich source of data in qualitative studies and that text provided by participants may be a component of a larger study using a variety of sources of data. An added advantage in this study was that the written narratives reduced costs by eliminating transcription, as would be required for audiotaped interviews.

The rationale for using a qualitative approach for this phase of the study was to explore and describe the experiences of South African nurses who left the country to practise in other countries with regard to: the factors that contributed to their decisions to leave; their experiences of working in other countries; and their conditions for returning to South Africa. A qualitative approach was the most appropriate way to capture their experiences.

3.6.1 Target population

A population is the total group of subjects that meet a designated set of criteria. Polit and Hungler (1999:278) distinguish between the target population and the accessible population. The target population includes all the cases about which the researcher would like to make generalisations. The accessible population comprises all the cases that conform to the designated criteria and are accessible to the researcher as a pool of subjects for a study. The target population comprised South African registered nurses who worked in other countries. These nurses had obtained their basic qualifications in South Africa and were registered with the SANC. Since no formal registers of South African nurses practising in other countries are kept by either the SANC or Denosa, it was impossible to determine the number of South African nurses in the target population. The accessible population (70) comprised all the South African registered nurses working in other countries whose names and e-mail addresses were available and known to the researcher.

3.6.2 Sample

Sampling is the process of selecting a portion of the population to represent the entire population (Polit & Hungler 1999:714). Exploratory design, according to Brink and Wood (1998:320), calls for small samples that are chosen through a deliberative process to represent the desired population. In qualitative research individuals are selected to participate in the research based on their first-hand experience of the phenomenon of interest. Unlike quantitative research, there is no need to randomly select individuals, because manipulation, control and generalisation of findings are not the intentions of the study (Streubert & Carpenter 1999:22). Purposive sampling, a procedure that involves the selection of persons who represent the desired population, was used. This is a non-probability sampling method which involves the conscious selection of certain subjects to be included in the study. For the purpose of this phase of the study participants were selected because they were South African registered nurses who had left South Africa to practise in other countries. Although this approach increases the possibility of samples that are not representative (Burns & Grove 1999:238), it provided the only way of reaching the subjects working in other countries. Since there were no formal registers or lists containing the names of South African nurses working in other countries, the researcher decided to use snowball sampling to identify participants. Henning (2004:71) maintains that purposive sampling and snowball sampling are related and have one common denominator: “the people most suitable to ‘wander with’

on the research journey are selected at the time they are needed". According to De Vos et al (2002:336), snowball sampling is valuable in qualitative research since it is directed at individuals that are difficult to identify. In snowball research the researcher collects data on the few members of the target population he can locate and then seeks information from those individuals that enable him to locate other members of that population. In addition, Burns and Grove (2003:255) emphasise that these sampling methods enable the researcher to select specific subjects who will provide the most extensive information about the phenomenon being studied.

At the start of the research, the researcher had access to the names and e-mail addresses of 17 members of the target population. They were asked to provide the names of other members of the target population known to them. These individuals were then approached by the researcher and requested to participate in the research. Tjale and De Villiers (2004:242) argue that large samples in qualitative research may lead to the generation of an amount of data that is difficult, if not impossible, to manage and to analyse in meaningful ways. Qualitative research therefore calls for small samples. Streubert and Carpenter (1999:302) support the view that qualitative methods require a small, purposive sample for completeness. The sample size is not predetermined. The required sample size in qualitative research depends on when saturation of data is reached, that is, until no new data emerge, but previously collected data are repeatedly reintroduced into the study (Burns & Grove 2003:374; Streubert & Carpenter 1999:22; Tjale & De Villiers 2004:242).

In qualitative research the focus is on the quality of information obtained from the participants, rather than on the size of the sample (Burns & Grove 2003:257). There is no need (Streubert & Carpenter 1999:23) to determine the number of participants at the beginning of the research because the goal is not to generalise the findings. When repetition of themes is achieved and new participants do not add new information, it is believed that saturation of data has been reached. A total number of 70 members of the target population were approached to participate in the study. Of these, 23 e-mail requests were returned to the researcher because the e-mail addresses were no longer valid or because of automatically generated anti-virus protection program messages. Another 20 members of the population did not respond to the researcher's e-mail requests to participate in the study. Since the e-mail addresses were the only information available to the researcher, it was impossible to reach these 43 members of the population in another way. Saturation in this phase of the

study on the emigration of South African nurses was reached, and the findings were confirmed by participants who did not respond immediately and sent their narratives after the initial data had been analysed. A total of 27 narratives were received and analysed.

3.6.3 Data collection

Data were collected by requesting South African registered nurses working in other countries via e-mail to write their stories in response to the questions that were set. Burns and Grove (2003:377) assert that in qualitative research, text is considered a rich source of data. In order to ensure full and accurate descriptions of the phenomenon of emigration of South African nurses, data were collected until saturation occurred. Once it was evident that saturation had been reached, no more reminders or requests to participate in the study were sent. A few narratives that were received after the data had been analysed were used to confirm the findings.

The following questions relevant to the objectives of the study were asked:

- Why did you leave South Africa to work in a foreign country?
- Did you make use of the services of a recruitment agency and how did you experience the service of the agency you signed up with?
- Under what conditions would you return to South Africa?
- How would you describe your experiences of working in a foreign country?

Participants were also asked to provide biographical data on sex, age, marital status, number of dependants, highest qualification in nursing, the country they were working in and the position they held in their current jobs.

According to Polit and Hungler (1999:331), loosely structured self-report methods offer the researcher flexibility in gathering information from participants; usually the researcher starts with some general questions or topics and allows the participants to tell their stories in a narrative fashion. Because the researcher was not present during the actual writing of the narratives, it was essential to ensure that topics related to the objectives of this study were covered in their stories. To get the desired information it was necessary to guide participants

by asking the above questions. Streubert and Carpenter (1999:25) emphasise that when a researcher is using written narratives it is extremely important to be clear about what the participants have to write on.

3.6.4 Data analysis

Data analysis in this phase of the research started as soon as the researcher received the first narratives from ex-South African nurses practising in other countries. Streubert and Carpenter (1999:28) emphasise that data analysis in qualitative research begins when data collection begins; in addition to the analysis that occurs throughout this period, a protracted period of immersion occurs at the conclusion of the data collection. The authors add that analysis of data in qualitative research is a hands-on process which requires the researcher to commit fully to understanding what the data say. Qualitative analysis is a complex process done in constant interaction with the data. The data in this study consisted of computer printouts of e-mail narratives and handwritten responses received over a period of one month from participants working in other countries. The narratives received via e-mail were printed from the computer and read as soon as they were received by the researcher. This ensured that the researcher became familiar with the data. Some participants confirmed their participation on e-mail but informed the researcher that they would be sending handwritten responses by mail. Both the handwritten responses and e-mail responses were received within a period of one month after individuals were invited to participate. Once all data had been collected, the analysis began. In order to analyse the data, they had to be organised to prepare them for interpretation.

"Data analysis refers to a process which entails an effort to formally identify themes and to construct hypotheses (ideas) as they are suggested by data and an attempt to demonstrate support for those themes and hypotheses" (Bogdan & Taylor 1975, cited in Tesch 1990:113).

Another definition of analysis by Miles and Huberman (1994:10) refers to analysis as consisting of three concurrent flows of activity, namely *data reduction, data display and conclusion drawing*. *Data reduction* refers to the process of selecting, simplifying and transforming data that appear in the original documents. It is part of analysis. The second

major analysis activity is data display. As with *data reduction*, the creation and use of displays is not separate from analysis but part of it. The third activity in analysis is *conclusion drawing* and verification. According to this view qualitative data analysis is a continuous process.

In order for the researcher to exclude all preconceptions of the phenomenon of South African nurses' emigration it was necessary to use bracketing before the data were analysed. Bracketing (Polit & Hungler 1999:247) refers to the process of identifying and setting aside any preconceived beliefs and opinions one might have about the phenomenon under investigation. The researcher brackets out the world and any presuppositions in an effort to confront the data in pure form. Bracketing is the cognitive process of putting aside one's own beliefs, not making judgements while collecting the data and remaining open to the data revealed (Streubert & Carpenter 1999:21). The researcher had to use bracketing of any preconceived ideas in order to reduce bias. The researcher had done a thorough literature search on the phenomenon of emigration and therefore had preconceived ideas about this phenomenon. It was essential that bracketing be used in order for the researcher to set aside these preconceived ideas in order to be able to analyse the data on the emigration of South African nurses in an honest and objective way.

3.6.4.1 Method of data analysis

According to Brockopp and Hastings-Tolsma (1995:255), there are several common steps suggested by researchers in the process of data analysis in qualitative research. These include identification of themes, verifying the selected themes through reflection on the data and discussion with other researchers or experts in the area, categorising the themes and recording of support data for the categories. Tesch's (1990) methodology was used to analyse the written descriptions by South African nurses working in other countries of their reasons for leaving, experiences of working in other countries and the conditions that would determine whether they would consider returning to South Africa or not.

Tesch describes the process of segmenting and categorising as decontextualising and re-contextualising. First, each of the 27 documents was read and reread to enable the

researcher to become familiar with the data. Thereafter, segments or meaning units were identified. Tesch (1990:116) defines a meaning unit as a segment of text that is comprehensible by itself and contains one idea, episode or piece of information. Text segments must be carved out of their context in such a way that they retain meaning even when they are encountered outside their context. In analysis of this data the first step was to "de-contextualise", or to separate relevant portions of data from their context.

The steps for developing an organising system as explained by Tesch (1990:142) were utilised. Data documents were read as they were received and ideas about the data were written down on the documents. This process was repeated until all the documents were received. The second step was to identify specific topics in the narratives. All the documents were numbered. Five data documents were selected to start the process. The identified topics were written in the margin of each document. After this step had been completed, a list was compiled of all topics, in columns according to the data documents. The topics were compared and similar topics were underlined in different colour pens. Similar topics were then clustered together and names that captured the underlying ideas were given to the clusters. Major topics, unique topics and leftover or miscellaneous topics were then grouped into columns.

The major topics and the unique topics were thereafter used to create a preliminary organising system. The five documents selected to create a preliminary organising system were then given to an independent coder experienced in qualitative data analysis. After consultation with the independent coder an organising system was created. Notes were kept throughout this process.

It was decided to construct an organising system from the data and not from the theoretical framework that guided the study. Different authors have different views on the construction of an organising system. According to Tesch (1990:119), interpretive qualitative researchers rarely use the theoretical framework to construct an organising system, while Miles and Huberman (1994:55) assert that conceptual frameworks and research questions are good for preventing overload. In order to work with the data, they were coded and organised in the categories where they belonged. This assembling is referred to as "re-contextualisation". The organising system was then refined. Some topics were organised together and given new

names, while others were identified as subcategories. The entire body of available data was coded in this way. After completion of the process of coding and organising into subcategories and categories, the researcher identified specific themes. The decision to conduct the analysis by hand was influenced by the researcher's knowledge of the process and by the number of participants in the study. The intimacy with the data gained by this process (Webb 1999:329) gave valuable insights into the factors that contributed to nurses' decisions to emigrate. The discussion of the findings (in Chapter 4) will be presented according to the themes identified from the data provided in response to each question. Thereafter the findings will be related to the theoretical framework for this study, namely Maslow's Hierarchy of Needs Theory.

3.6.5 Trustworthiness

The criteria for measuring reliability and validity of quantitative research instruments are not appropriate in qualitative approaches. Qualitative research is trustworthy when it accurately represents the experiences of the participants (Streubert & Carpenter 1999:333). The rigour of qualitative methodology (LoBiondo-Wood & Haber 1994:276) is judged according to credibility, auditability, fittingness and confirmability criteria. Streubert and Carpenter (1999:28) cite the following terms of Lincoln and Guba (1985) regarding rigour in qualitative research:

Credibility: This includes activities that increase the probability that credible findings will be produced. These authors suggest that credibility will be established through prolonged engagement with the subject matter or allowing participants to validate that the reported findings represent their experiences.

Dependability: Once credibility has been determined, the question may be asked: How dependable are these results?

Confirmability: By leaving an audit trail, the researcher illustrates as clearly as possible the evidence and thought processes that have led to the conclusions.

Transferability: Also labelled 'fittingness'. This refers to the probability that the findings will have meaning to others in similar situations. The researcher has to provide the information that potential appliers need to make a decision on transferability (Streubert & Carpenter 1999:28).

3.6.5.1 Measures for ensuring trustworthiness

The process of data verification was carried out according to Guba's model of trustworthiness as described in Krefting (1991:215-216). The strategies carried out in this study to ensure trustworthiness are indicated in Table 3.1 and conform to the strategies in Guba's model of trustworthiness.

TABLE 3.1 Strategies for ensuring trustworthiness in the qualitative phase of the study

Criterion	Strategies for assessing the criteria	Particular actions taken by researcher
Truth value	Credibility	! Triangulation of data sources (expatriate nurses, newly qualified nurses) ! Triangulation of methods (qualitative approach - narratives, quantitative approach - structured questionnaires) ! Member checking (testing of analytic categories and interpretations with participants) ! Peer examination (discussion of the research findings with impartial colleagues experienced in qualitative methods) ! Reflexivity (the researcher assessed own biases and bracketed them) ! Findings were presented at two international conferences for peer evaluation
Consistency	Dependability	! Triangulation of data sources (expatriate nurses, newly qualified nurses) ! Independent coder assisted with categorisation and coding ! Peer examination (promoters provided supervision.)
Applicability	Transferability	! Dense descriptions of the research methodology, literature control and verbatim quotations taken from the narratives ! Purposive selection of the sample (The sample consisted of South African nurses working in various other countries, belonging to different cultural and age groups.)

Neutrality	Confirmability (Occurs with credibility, dependability and transferability)	! Triangulation of data sources (expatriate nurses, newly qualified nurses) ! Reflexivity (the researcher identified own biases to ensure that data were free from bias.)

3.7 PHASE 2: QUANTITATIVE APPROACH

Mouton and Marais (1992:159) define quantitative research as the approach used by researchers in the social sciences that is more formalised in nature than qualitative research, as well as explicitly controlled, with a more carefully defined scope. Burns and Grove (1999:23) describe quantitative research as a formal, objective, rigorous and systematic process for generating information about the phenomenon. Evidence for a quantitative study is gathered according to a specific plan in which formal instruments are used to collect the needed information. This information is translated into numeric information and analysed using statistical procedures (Polit & Hungler 1995:13).

A quantitative approach was used in Phase 2 of the study to obtain information regarding the factors that contribute to South African nurses' decision to leave the country to work in other countries, from nurses who had completed basic courses during 2002 to qualify as professional registered nurses with SANC.

3.7.1 Target population

The target population for Phase 2 comprised all the nurses on the registers of the SANC who completed their basic training during 2002. These included nurses completing basic degrees and diplomas at universities and basic diplomas at nursing colleges and nurses completing bridging courses enabling them to register at the SANC. The SANC provided the following information on the number of students completing basic courses: (Annexure A: Data provided by the SANC).

TABLE 3.2 The number of students completing basic courses

Institution/Course	2002
Basic course	379
Universities - Degree and Diploma	1 273
Nursing colleges - Diploma	
Bridging course	1 679
Nursing colleges	
TOTAL	**3 331**

3.7.2 Sample

Probability sampling in which some form of random selection is used enables the researcher to predict the probability that each element of the population will be included in the sample (LoBiondo-Wood & Haber 1994:291). Probability sampling has a better chance of resulting in a representative sample, and according to Brink and Wood (1994:106), randomness is also associated with generalisability, which implies that the degree to which the sample represents the population affects the degree to which the study's results can be generalised to the entire population. Probability sampling was used in this phase of the research study.

Cost considerations influenced the decision to use a sample of the newly qualified nurses (nurses completing basic courses during 2002) on the register of SANC and not the entire population of newly qualified nurses. A computerised random sample of 15% of the total population of nurses who completed basic courses during 2002 was drawn by the SANC's statistician. Names and addresses were supplied by the SANC. A total of 501 names and addresses were supplied. Questionnaires were sent to 501 registered nurses who completed their basic training during 2002. Out of these 501, 105 (20,9%) completed questionnaires were returned to the researcher.

3.7.3 Data collection

Data collection, according to Burns and Grove (1999:43), is the accurate and systematic

gathering of information relevant to the specific objectives and questions of a study. The study variables are measured using a variety of techniques such as observation, interviews or questionnaires. Research data in quantitative studies are often collected according to a structured plan, using self-administered questionnaires with questions that have predesignated response options, with little opportunity for respondents to qualify or explain their answers. Burns and Grove (1999:272) point out that questionnaires tend to be used in descriptive studies designed to gather a broad spectrum of information from subjects. Data in this phase of the study were collected by using a structured questionnaire with both open-ended questions that required written responses and closed-ended questions providing pre-determined options. The structured approach allowed the researcher to compute exact percentages. Data that is to be subjected to statistical analysis (Polit & Hungler 1999:311) must be gathered in such a way that it can be quantified. Structured data collection generally produces data that are easily quantified. The services of an expert statistician, Prof F Steffens, former Head of the Department of Statistics, Unisa, were obtained to facilitate the coding and quantification of data from the completed questionnaires. SPSS numbering was added to the questionnaire as recommended (Annexure H: Structured questionnaire).

3.7.3.1 Development of the research instrument

A structured questionnaire was developed by the researcher. A covering letter with a description of the purpose and the importance of the study was attached to the questionnaire. Respondents were assured of their anonymity and freedom to decide whether to participate in the study or not (Annexure I: Cover letter accompanying structured questionnaire).

Clear instructions were given to the respondents regarding completion of specific items throughout the questionnaire.

The questionnaire was designed in such a format that the data could be easily entered into the computer. Item numbers that could be used in a data set were incorporated into the questionnaire. The questionnaire was divided into different sections (see Section 3.7.3.2) in order to facilitate the processing of the data.

The objectives of the study, the theoretical framework, the literature review and the findings

of Phase 1 of this study (narratives received from South African nurses working in other countries) guided the researcher in the formulation of questions. Questions requiring both open-ended and closed-ended responses were included. After consultation with the statistician and a computer expert, the questionnaire was submitted to the promoters of this study. After incorporation of recommendations made by the statistician, the promoters of the study and the computer expert, the questionnaire was ready to be pretested.

3.7.3.2 Content of the structured questionnaire

The questionnaire consisted of six sections containing mostly closed-ended questions.

Section 1 Biographic information

Questions regarding the respondents' age, sex, home language, marital status, qualifications and employment status were included in this section. The aim of including this information was to identify whether there was a relationship between the biographic data of nurses and their intentions to leave the RSA.

Section 2 Intention to emigrate

Questions in this section dealt with respondents' intentions to leave South Africa to work in other countries either permanently or temporarily.

Section 3 Reasons for considering leaving South Africa

This section consisted of items dealing with reasons why respondents were considering leaving the country. Respondents had to indicate their agreement or disagreement with the reasons why they were considering leaving South Africa.

Section 4 Factors that would encourage nurses to remain in South Africa

This section consisted of statements related to factors that might encourage South African

nurses to stay in South Africa. Respondents had to indicate their agreement or disagreement with the statements.

Section 5 Aspects of living in South Africa

This section consisted of items dealing with factors related to living in South Africa. Respondents had to indicate their satisfaction or dissatisfaction with these factors.

Section 6 General Comments

Respondents were given an opportunity to comment on nursing in South Africa and the emigration of nurses from South Africa.

3.7.3.3 Pretesting of the questionnaire

Before implementing the study the researcher had to ensure that the measurement procedures and the measurement instrument had acceptable levels of reliability and validity. The researcher developed the instrument after an in-depth literature review. The theoretical framework for the research, Maslow's Hierarchy of Needs, was incorporated into the construction and formulation of items in the questionnaire. This is illustrated in Table 3.3.

TABLE 3.3 Incorporation of Maslow's Hierarchy of Needs Theory in the questionnaire

Physiological needs	Safety needs	Belonging needs	Esteem needs	Self-actualisation needs

Section 3 Item 3.2 Item 3.6 Item 3.8 Item 3.11 Item 3.15 Item 3.16 Item 3.18 Item 3.20 Item 3.22 Item 3.26 Item 3.28 Item 3.29 Item 3.37 Item 3.39	Item 3.14 Item 3.19 Item 3.25 Item 3.27 Item 3.35 Item 3.41	Item 3.12 Item 3.17 Item 3.21	Item 3.10 Item 3.13 Item 3.16 Item 3.30 Item 3.31 Item 3.32 Item 3.38 Item 3.40	Item 3.1 Item 3.3 Item 3.5 Item 3.9 Item 3.24 Item 3.34 Item 3.36 Item 3.39
Section 4 Item 4.1 Item 4.2 Item 4.3 Item 4.4 Item 4.5 Item 4.10 Item 4.13 Item 4.15 Item 4.16 Item 4.17 Item 4.18 Item 4.31 Item 4.34 Item 4.36 Item 4.38	Item 4.7 Item 4.15 Item 4.22 Item 4.32 Item 4.33 Item 4.35 Item 4.37	Item 4.6 Item 4.17 Item 4.23	Item 4.9 Item 4.11 Item 4.14 Item 4.19 Item 4.20 Item 4.24 Item 4.25 Item 4.30 Item 4.39	Item 4.8 Item 4.12 Item 4.21 Item 4.26 Item 4.27 Item 4.33

After finalisation of the questionnaire a pretest was undertaken. Five registered nurses were asked to complete the questionnaire and comment on the questions and instructions given on the questionnaire. These five nurses did not form part of the research sample. The purpose of pretesting the questionnaire was to ensure that respondents would understand the questions, and identify possible problems with the completion of the questionnaire. Minor problems were identified and revisions to the questionnaire were made. The following suggestions were implemented:

- Item 1.10 - a variable *Research* was included
- Section 3 - the following sentence was added to the instruction: *If you do not consider leaving South Africa to work in a foreign country, please go to Section 4.*

- Section 6 - more open space was provided on the questionnaire for respondents' general comments.

3.7.3.4 Validity and reliability

Validity is the ability of an instrument to measure what it is supposed to measure. According to De Vos et al (2002:166), the definition of validity has two parts, namely whether the instrument actually measures the concept in question and whether the concept is measured accurately. Validity refers to the degree to which an instrument is doing what it is intended to do and evidence of validity is provided by several sources. Validity of the research instrument was evaluated for face, content and construct validity.

- **Content validity**

Content validation can be undertaken by the researcher alone or with the assistance of others (De Vos et al 2002:167). The content validity of the questionnaire used in Phase 2 of the research was determined by the literature review as well as by the judgement of the promoters of the study in consultation with a statistician.

- **Face validity**

Face validity, according to Polit and Hungler (1999:702), refers to the extent to which a measuring instrument looks as though it is measuring what it purports to measure. Polit and Hungler (1999:418) also point out that face validity should not be considered as primary evidence for the quality of an instrument, but it is nevertheless a desirable property of a measuring instrument. Face validity of the instrument was determined by an expert statistician and lecturers in nursing research in the Department of Health Studies, Unisa.

- **Construct validity**

Construct validity is more concerned with the underlying attribute than with the scores that the instrument produces. Its significance is in its linkage with theory and theoretical

conceptualisation (Polit & Hungler 1999:420). It involves validation of not only the instrument but also the theory underlying it (De Vos et al 2002:168). Maslow's Hierarchy of Needs Theory, underlying the research, was linked to the items in the questionnaire. This was confirmed by the researcher and the promoters of the study (see Table 3.3).

Polit and Hungler (1999:713) define reliability as the degree of consistency with which an instrument measures the attribute it is designed to measure. De Vos et al (2002:169) explain that reliability is primarily concerned not with what is being measured but with how well it is being measured. The reliability of a measuring tool can be assessed in several ways. The method chosen depends to a certain extent on the nature of the instrument but also on the aspect of the reliability concept that is of greatest interest. The aspects that have received major attention are stability, internal consistency and equivalence (Polit & Hungler 1999:412). The stability of a measure refers to the extent to which the same results are obtained on repeated administrations of the instrument. Polit and Hungler (1999:414) maintain that the internal consistency approach to estimating an instrument's reliability is probably the most widely used method among researchers today.

Research experts and a statistician assessed the instrument and the homogeneity of the variables before it was used. Reliability was further ensured through conducting a pretest. Data obtained from responses to different items of the questionnaire will be compared and contrasted where appropriate in Chapter 5.

3.7.4 Advantages and disadvantages of using questionnaires

The advantages (De Vos et al 2002:172) of using mailed questionnaires to collect data were the following:

- The cost of distributing mailed questionnaires was relatively low considering the geographical area that was covered.
- Questionnaires were distributed to a large sample of the population within a brief

period of time.

- Respondents enjoyed a high degree of freedom in completing the questionnaires.
- Subjects were more likely to feel that they could remain anonymous and therefore they were more likely to express controversial opinions. This is supported by Babbie and Mouton (2001:262), who point out that respondents are sometimes reluctant to report controversial attitudes in interviews but are willing to respond to an anonymous self-administered questionnaire.
- The fact that no interviewer was present ensured that there was no interviewer bias (Lo Biondo-Wood & Haber 1994:357).

Disadvantages of using mailed questionnaires to collect data were discussed in the literature and those applicable to this study were as follows:

- The researcher had no control over whether the correct person completed the questionnaire (De Vos et al 2002:172).
- A low response rate was achieved despite the inclusion of self-addressed stamped envelopes and sending out reminders. Burns and Grove (1999:272) point out that the response rate to questionnaires is generally lower than that of other forms of self-report, particularly if the questionnaires are mailed. The validity of the instrument can also be threatened if respondents fail to answer all questions. The researcher attempted to raise the response rate by including a covering letter in which the objectives of the study were explained, including self-addressed stamped envelopes with each questionnaire and sending reminders after eight weeks. The covering letter and the reminder contained a telephone number where the researcher could be reached. The researcher received four phone calls from respondents expressing their gratitude for being selected to participate in the study. Some mentioned problems that they were experiencing because of staff shortages while one respondent complained that she was denied permission to do a post basic nursing course.

3.7.5 Conducting the research in Phase 2

The names and addresses of the sample of the target population were supplied by the SANC. Questionnaires with attached covering letters and self-addressed stamped envelopes were

included in the envelopes that were mailed to 501 nurses who had completed their basic training during 2002. They were given six weeks to complete and return the questionnaires. Since the response rate was low, reminders to complete and return the questionnaires were sent out two weeks after the due date, or eight weeks after the initial despatch of the postal questionnaire . No follow-up questionnaires were posted because the costs of doing so would have been prohibitive.

3.7.6 Analysis of data in Phase 2

Data from the structured questionnaires were translated into numerical codes by the researcher, and data capture was done by statistical analysts at Unisa using the SPSS (version12) computer program. The analysis, presentation and discussion of the findings of Phase 2 will be presented in Chapter 5. The open-ended questions were analysed qualitatively and will also be presented in Chapter 5.

3.8 ETHICAL CONSIDERATIONS

According to Streubert and Carpenter (1999:33), a new set of ethical considerations is applicable when a *qualitative approach* is followed. However, the same ethical principles must be observed by researchers when conducting research in a responsible and ethical way. The first ethical principle to consider is the principle of autonomy, which implies the right to self-determination and the right to full disclosure (Polit & Hungler 1999:136). The principle of self-determination means that participants have the right to decide voluntarily if they want to participate in the study or to terminate their participation, therefore researchers have to obtain informed consent before conducting the research. Streubert and Carpenter (1999:36) point out that the design of qualitative research demands a different approach to informed consent. Because of an ever-changing field in which qualitative research is conducted, the authors believe that consent is an ongoing process that must be renegotiated as the research progresses. The participants in this study were informed about the nature of the study and what would become of the findings once the study had been completed. Participants were informed and reminded throughout the study that their participation was voluntary. The participants' rights to self-determination and full disclosure were endorsed by the researcher.

The accompanying letter provided participants with a telephone number and postal address of the researcher. The researcher received three phone calls from expatriate nurses in other countries enquiring about the study and sharing experiences with the researcher.

The second and third ethical principles to be considered are the principles of beneficence and justice, which refer to the duty of the researcher to do good and to be fair to participants. Streubert and Carpenter (1999:38) point out that the nature of data collection in qualitative research makes anonymity impossible. The researcher ensured, however, that appropriate confidentiality procedures were implemented. No names or institutions were linked to any responses. The research report would not mention any person nor any institution - thus maintaining anonymity in the report. The e-mail addresses of participants were never mentioned in the research report and were never divulged to any person or institution. The researcher kept the e-mails and letters locked up. Subsequent to data analysis and publication of the research report, all these documents will be destroyed by the researcher.

Streubert and Carpenter (1999:40) point out that the interpretation of data and reporting of findings also require the researcher to follow ethical guidelines. The researcher followed the recommended steps and ethical guidelines. Personal biases were kept separate (bracketed), data were reviewed and categories verified by a second coder and final descriptions were returned to participants to validate the interpretation of the researcher.

As in the qualitative phase of the study, the researcher was again guided by ethical principles in conducting the research in the *quantitative phase* in a responsible and ethical way. Questions in the questionnaire were phrased in non-threatening ways. The principle of autonomy implies that respondents have the right to decide voluntarily if they want to participate in the study or not, therefore researchers have to obtain informed consent before conducting the research. The research subject has the right to remain anonymous and to assume that data collected will be kept confidential (Burns & Grove 1999:163).

In conducting research in the quantitative phase the respondents' rights to self-determination and full disclosure were endorsed by the researcher. Respondents were fully informed about the nature and importance of the research and were in a position to decide whether or not to participate in the study. Informed consent means that participants have adequate information

and have the freedom of choice to consent or refuse to participate in the research. The respondents' right to informed consent was respected and endorsed by the researcher. Respondents were treated respectfully and courteously at all times and their selection was based upon the selection criteria for inclusion in the study and not on any other criteria. The researcher ensured that the respondents' anonymity was maintained. No signed consent forms were required from respondents and it was accepted that the return of a completed questionnaire indicated respondents' consent. No names nor institutions would be linked to any responses. No information obtained from the respondents would be reported in a manner that could possibly identify the respondents or the institutions where they worked or qualified as registered nurses. A telephone number and an address were included in the covering letter thus ensuring accessibility of the researcher (Annexure I: Cover letter accompanying structured questionnaire).

3.9 CONCLUSION

The research design, research populations and samples for phases 1 and 2 of the study, methodologies for collecting data in phases 1 and 2 of the study and the reasons for using both quantitative and qualitative approaches to conduct the research were described in this chapter. The qualitative data based on the narratives from expatriate South African nurses in other countries done in Phase 1 will be analysed and discussed in Chapter 4, and the findings of the quantitative research done in Phase 2 of the study will be presented and discussed in Chapter 5.