

**THE SOCIAL-ECONOMIC LIFE EXPERIENCES OF PATIENTS ON
KIDNEY HAEMODIALYSIS IN BOTSWANA**

by

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DECLARATION

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I declare that the study on **THE SOCIAL-ECONOMIC LIFE EXPERIENCES OF PATIENTS ON KIDNEY HAEMODIALYSIS IN BOTSWANA** 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.



SIGNATURE

April 2021

DATE

DEDICATION

I dedicate this work to my family; especially my wife Tozie, sons Karabo and Paballo, my mum Grannie Khame, sisters Siwulani Sebetso, Queen Maribe and Hwananani Modukanele, and their husbands.

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ABSTRACT

The purpose of this study was to explore and describe the social-economic life experiences of patients undergoing kidney haemodialysis at a public healthcare facility in a developing country, Botswana. The research setting was one of the public healthcare facilities with a haemodialysis clinic in Gaborone, Botswana. This study adopted a qualitative, explorative, descriptive and contextual research design based on phenomenological guidance. The population for the study was patients, over the age of 18, who had been undergoing haemodialysis treatment. A non-probability purposive sampling method was used to select potential participants. The sample ultimately comprised 10 participants. Data were collected through in-depth, face-to-face, semi-structured interviews, and field notes were taken during data collection. A digital audio recorder was also used throughout the interviews.

Data were analysed thematically using Creswell's six-step model. The findings revealed that the participants on haemodialysis treatment appreciated the treatment, but experienced challenges related to physical and psychosocial factors; fear of death; transport challenges and distance from the haemodialysis centre; dietary restrictions; impact of time-related challenges on socioeconomic activities; economic difficulties; and altered responsibility and relationship with family and at the community level. The participants recommended improvements for their quality of life by decentralising haemodialysis services, improving the availability and accessibility to haemodialysis machines and skilled professionals, and making alternative treatment options

available, such as kidney transplants. They also requested psychosocial services, and the establishment of a safety net for haemodialysis patients.

KEY CONCEPTS: Caregiver, Chronic Kidney Disease, End-Stage Renal Disease, Haemodialysis, Kidney Transplant, Non-Communicable Disease, Patient

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LIST OF ACRONYMS AND ABBREVIATIONS

AKI	Acute Kidney Injury
ARF	Acute Renal Failure
CKD	Chronic Kidney Disease
CVD	Cardiovascular Disease
ESRD	End-Stage Renal Disease
GFR	Glomerular Filtration Rate
KDIGO	Kidney Disease Improving Global Outcomes
NCDs	Non-Communicable Diseases
PMP	Per million populations
RRT	Renal Replacement Therapy
WHO	World Health Organization

CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This study, on the effects of kidney dialysis on patients' socioeconomic life, was conducted in Gaborone, Botswana. Kidney dialysis is medical assistance or a procedure performed on a patient diagnosed with kidney failure due to a number of factors, primarily influenced by non-communicable diseases (NCDs). According to the World Health Organization (WHO) (2014:4), of the 56.4 million deaths worldwide in 2015, more than half (54%) were attributed to NCDs. Moreover, while developing countries are experiencing a positive trend in effectively addressing and minimising these diseases, this is not necessarily the case in underdeveloped countries.

One condition that has seen a rapid increase due to the prevalence of NCDs is chronic kidney disease (CKD). CKD is increasingly recognised as a public health problem and key determinant of poor health outcomes (Cruz, Andrade, Urrutia, Driabe, Nogueira, Luiz, Ricardo & Cintra 2011:991; Courser, Remuzzi, Mendis & Tonelli 2011:1; Rwengerera, Bayani, Taolo & Habte 2017:313). According to Gerogianni, Babatiskou, Gerogianni, Grapsa, Vasilopoulos and Koutis (2014:740-741), CKD lowers patients' quality of life since it is irreversible, progressive, and linked to adverse health outcomes, culminating in total kidney failure, often resulting in death. The main causes of this condition are diabetes, hypertension and polycystic kidney disease (Sullivan 2010:46).

CKD usually calls for two critical medical interventions, namely dialysis or a kidney transplant (Jha & Garcia-Garcia 2015:376). However, in Africa, the most common medical intervention for CKD has always been haemodialysis. Rwengerera et al. (2017:313) agree that patients with CKD in Africa should ideally have access to haemodialysis as kidney replacement is expensive. The preceding statement that kidney transplantation is costly is also emphasised in Chironda and Bhengu's (2015:2) study on the factors contributing to CKD patients' non-adherence to treatment in New York.

Since haemodialysis is typically attended in the long term, and is required at least three times a week for three hours per session, there is a high possibility of treatment schedules interfering with patients' socioeconomic lives. Therefore, this study explored and described the socioeconomic life experiences of patients undergoing kidney haemodialysis at a public healthcare facility in a developing country, Botswana.

1.2 BACKGROUND OF THE STUDY

CKD is mainly determined by measuring the glomerular filtration rate (GFR) (Jha & Garcia-Garcia 2015:378; Sullivan 2010:45). This number is typically used to determine how much blood passes through the kidney to determine the stage of the disease. According to Liang and Chin-Ken (2012:225), GFR is a mathematical formula that comprises the use of age, race, and serum creatinine. When kidneys are functioning well, they are able to remove creatinine adequately. However, as the kidneys' function weakens, creatinine levels surge, resulting in the gathering of waste products and eventually causing damage to the kidneys. According to Tzanakaki, Boudouri, Stavropoulou, Stylianou, Rovithis, Zacharias and Zidianakis (2014:343), permanent failure of the kidney to perform its function is called CKD, and failure to sustain life is referred to as end-stage renal disease (ESRD).

CKD is a progressive condition where the kidneys gradually experience some impairment over time, finally becoming irreversibly damaged; to the extent of being unable to adequately clean the blood as required. The disease manifests through five stages, with stages one and two being preliminary stages and stage five being extreme – also called ESRD. It is critical to note that CKD is progressive and irreversible at stage five, where the GFR is less than 15. At stage five, the kidney function has severely deteriorated, and most people at this stage have total renal failure. These individuals are put on haemodialysis or require a kidney transplantation (Rwengerera et al. 2017:313).

According to the WHO (2014:4), chronic kidney disease is a non-communicable disease responsible for early mortality and morbidity in many countries, and is a significant challenge for public health (Nicola 2016:40). The prevalence of CKD,

especially end-stage renal disease, is currently estimated to be 8%–16% worldwide and is influenced by several factors, including other NCDs like diabetes, hypertension, and polycystic kidney disease (Jha & Garcia-Garcia 2015:378). End-stage renal disease is also increasingly becoming a global public health concern, as stated by Rwengerera et al. (2017:313). The prevalence of ESRD is also becoming more pronounced in developing countries due to the high disease burden and poor access to resources to meet treatment requirements (WHO 2014:4).

According to Rwegerera et al. (2017:314), common interventions for this condition, irrespective of whether you live in a developing or developed country, have always been either kidney dialysis or transplantation. However, while early interventions to manage the condition are readily available and have created positive change in ESRD-patients' lives in most developed countries, this is not the case in developing countries. Based on this discussion, this research aimed to explore and describe the socioeconomic life experiences of patients undergoing kidney dialysis, specifically haemodialysis, at a public healthcare facility in a developing country, Botswana.

1.3 STATEMENT OF THE PROBLEM

As stated, the incidence of chronic kidney disease, especially End Stage Renal Disease, has been progressively increasing across the globe due to several factors. These factors include other non-communicable diseases, mainly diabetes and hypertension. However, there is limited information on CKD prevalence, especially in Botswana (Rwengerera et al. 2017:313). The WHO (2014:6) similarly agrees there is a lack of appropriate statistics on CKD in Africa, since screening programmes are mostly in their infancy stages. However, this does not mean Botswana cannot demonstrate the magnitude of the disease by using literature sources from the region and other parts of the world to determine the impact of the disease on its citizenry.

According to William, Remuzzi, Mendis De Nicola and Zoccani (2012:20), the global burden of this disease, together with other conditions including the urinary tract, contribute to 830 000 deaths annually. The fifth stage of end-stage renal disease has a serious impact on most populations, with an occurrence that ranges from 2447 pmp in Taiwan and 10 pmp in Nigeria. William et al. (2012:20) claim that in Latin America,

ESRD prevalence is approximately 1019 pmp in Uruguay and 34 pmp in Honduras, in Tunisia it is 713 pmp, and in Egypt 669 pmp. In relatively developed regions of China, particularly major cities, the prevalence of ESRD has been reported to be 102 pmp. Yet, in Japan, ESRD prevalence is more than 2200 pmp, considered one of the highest rates worldwide (William et al. 2012:20).

End-stage renal disease is an incurable health condition, and most patients, particularly in Africa, cannot afford the high cost of a kidney transplant. The unavailability of resources for kidney transplants results in most of these patients having no choice but to resort to haemodialysis for treatment. Haemodialysis is a lifelong therapy, and once started, it cannot be abandoned. It is extremely demanding in terms of time and other life commitments, since a patient is expected to leave home, work, or any other social activities to attend two to four hours' treatment sessions three times per week. The researcher thus assumed that patients' haemodialysis treatment regime might have some adverse impact on their social-economic life. This assumption was based on the researcher's understanding that haemodialysis is a lifelong treatment undertaking that may interfere with patients' activities of daily living.

Gerogianni and Babatsikou (2014:206) highlighted those individuals on haemodialysis experience stressful life situations. The procedure exposes them to psychological and social challenges, including financial difficulties, fear of death, restrictions in leisure time and marital relationships. The above proposition was also supported by a study conducted in Athens, Greece, on the social life of patients undergoing haemodialysis; the results indicated that dialysis negatively affected patients' social and economic lives (Gerogianni, Babatsikou, Georgianni, Panagiotou & Erasmia 2016:125).

Gerogianni et al.'s (2016) study in Athens, Greece, also reflected that unemployment is likely to be prevalent among patients on haemodialysis, mainly due to the long duration and frequency of the treatment. The findings of that study further revealed that 60% of respondents who were on dialysis and had been interviewed lost their professions, and 36.7% had retired immediately after starting dialysis. Unemployment had a severely negative impact on patients attending haemodialysis and their family, due to the frequency with which they required time off from work and the hours they

spent attending weekly treatments. Furthermore, the treatment affected their productivity (Sullivan 2010:46).

In Africa, dialysis is primarily performed in health facilities because the majority of patients cannot afford to have their own dialysing equipment at home. As mentioned, the procedure is performed three times a week for a period of not less than three hours. The researcher noted that, in Botswana, dialysis is primarily available in Gaborone, Palapye and Francistown, the three metropolitan satellites with the most specialised services. This arrangement creates a significant challenge because most patients face impediments in travelling to the centres due to the cost implications. As a result, some patients must relocate to towns or cities, incurring additional costs and experiencing alienation from their families, thereby exposing them to deep economic hardship. Furthermore, in Botswana, no prior study has been conducted regarding the socioeconomic effects of haemodialysis on patients. This led to the researcher's concern that the country might face serious mortality challenges due to the negative socioeconomic impact of haemodialysis. This challenge warranted urgent intervention, reflecting the necessity of this study.

1.4 PURPOSE OF THE STUDY

The purpose of this study was to explore and describe the socioeconomic life experiences of patients undergoing kidney haemodialysis at a public healthcare facility in a developing country, Botswana.

1.4.1 Research objectives

The research objectives were:

- to identify and describe the socioeconomic effect haemodialysis has on patients;
- to explore the impact of haemodialysis on the social-economic lives of patients attending haemodialysis; and
- to determine the best way to support patients attending haemodialysis socioeconomically.

1.4.2 Research questions

The grand tour question was: “What are the socioeconomic life experiences of patients undergoing haemodialysis at a public healthcare facility in a developing country, Botswana?” This grand tour question was supported by these sub-questions:

- What are the socioeconomic effects of attending kidney haemodialysis?
- What is the impact of kidney haemodialysis on your social-economic life?
- How can you be socioeconomically supported when attending haemodialysis?

1.5 DEFINITION OF KEY CONCEPTS

1.5.1 Caregiver

A caregiver is any person, including a family member, who provides care or assistance to one who is ill (Medical Dictionary 2012:282). In this study, a caregiver is someone caring for a patient on haemodialysis, often family members.

1.5.2 Chronic kidney disease (CKD)

Chronic kidney disease is a condition characterised by the gradual and progressive – generally not reversible – reduction of renal function or any illness where kidney function remains diminished for an extended period. Chronic kidney disease is defined as >30 mg of urinary albumin excretion per gram of urinary creatinine, or a glomerular filtration rate of <60mL/min/1.73m². It includes both ESRD and improper functioning of a transplanted kidney (Porter & Kaplan 2011:2450). In this study, chronic kidney disease refers to a renal condition where the functioning of the kidney is extremely affected. The kidneys are not functioning well and, as a result, need assistance.

1.5.3 End-stage renal disease (ESRD)

ESRD is the last stage of CKD; this is when the kidney can no longer support the body’s needs (WHO 2014:4).

1.5.4 Haemodialysis

Haemodialysis is the separation of soluble substances and water from the blood by diffusion through a semipermeable membrane (Porter & Kaplan 2011:2451).

1.5.5 Kidney transplant

A kidney transplant is the insertion of a donated kidney into the body, connecting its blood vessels to the host vessels, and its urethra to the host bladder (Porter & Kaplan 2011:2463).

1.5.6 non-communicable diseases (NCDs)

NCDs, also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors (WHO 2014:4).

1.5.7 Patient

A patient is referred to as one who is suffering from disease, injury, an abnormal state, or a mental disorder, and is engaged in related treatment (Porter & Kaplan 2011:654).

1.6 RESEARCH SETTING

The research setting is the physical location and conditions under which data collection takes place (Polit & Beck 2017:261). For this study, the research setting was one of the public healthcare facilities with a haemodialysis clinic in Gaborone, Botswana (refer to Annexure 12). This health facility has been operating a renal care centre for more than seven years and, as such, is one of the centres to assist in the provision of information on individuals' experiences of haemodialysis.

1.7 RESEARCH DESIGN

Research designs are plans and procedures for research that guide researchers' decisions from broad assumptions to detailed methods of data collection and analysis (Creswell 2014:196). This study employed a qualitative, explorative, descriptive and contextual research design based on phenomenological guidance. The qualitative research design was deemed most suitable for this study because it allows the researcher flexibility in going back and forth between research steps as new information emerges along the way. This design also does not necessarily require a linear data collection method, as is the case with quantitative studies. The discussion of the research design is elaborated on in Chapter 3.

1.8 RESEARCH METHODS

According to Creswell (2014:15), research methods involve data collection, analyses and interpretations that researchers propose for their study. It usually entails the procedure through which the researcher gathers information in terms of collecting data from the participants, such as using interviews.

1.8.1 Population

According to Polit and Beck (2017:306), a population is described as the entire aggregation of cases (persons or objects) in which the researcher is interested and who meets the research inclusion criteria. It is a group from which the participants experiencing a phenomenon being studied are extracted (Sergeant 2012:1). The population for this study was patients attending haemodialysis treatment in Botswana.

1.8.2 Sampling technique and sample

This study used a non-probability sampling technique that was purposive, since the researcher already knew the eligible population who could benefit from the findings. This point is reiterated by Neuman (2014:198), who claims purposive sampling employs an expert's judgment in selecting cases with a specific purpose in mind.

A sample of 10 participants was recruited from patients attending haemodialysis treatment in one of the public healthcare facilities with a haemodialysis clinic in Gaborone for the two years prior to data collection. The participants were older than 18 years at the time of data collection. This sample was sufficient to represent the views of many participants; according to Polit and Beck (2017:309), phenomenological studies rely on very small samples of participants, typically 10 or fewer. The essence of a small sample is not representation in the population, but the expectation that all the participants should have experienced the phenomenon being studied and are able to communicate well.

1.8.2.1 Inclusion criteria

The inclusion criteria were:

- Participants older than 18 years.
- Men and women receiving haemodialysis treatment at one of the public healthcare facilities with a haemodialysis clinic for at least two years prior to data collection.

The rationale for recruiting participants older than 18 years was to avoid issues of consent by minors, since 18 years is below majority age in Botswana. Men and women who are new patients on haemodialysis (less than two years) were excluded since they had not experienced much about the condition.

1.8.2.2 Exclusion criteria

The exclusion criteria were:

- Male and female patients who had enrolled for haemodialysis treatment for less than two years.
- All patients younger than 18 years.

1.8.3 Data collection

Data collection is the process of gathering information of interest or specified in the objectives in a systematic way that enables one to answer the stated research questions (Edwards & Holland 2013:3). Data were collected in the form of in-depth, face-to-face, semi-structured interviews with patients older than 18 years, who were attending a haemodialysis clinic at a public healthcare facility. In-depth interviewing is a face-to-face data collection technique that allows liberty for both the interviewer and the interviewee to go deeper into the area being explored; it gives the researcher an opportunity to extract rich information (Polit & Beck 2017:527).

According to Polit and Beck (2017:345), in-depth interviewing is a conversation facilitated by a trained individual who typically collects specific information from one person. Data were collected after the researcher received ethical clearance from the Department of Health Studies' Research and Ethics Committee at the University of South Africa (UNISA) (refer to Annexure 1). Permission was also granted by the Ministry of Health and Wellness (refer to Annexure 2) for the researcher to conduct the study. Furthermore, permission was granted by the public healthcare facility rendering haemodialysis treatment (refer to Annexure 4).

1.8.3.1 Data collection procedures

After gaining written permission from the hospital management (refer to Annexure 4) and the public healthcare facility's haemodialysis clinic, the health personnel (nurses) assisted the researcher in identifying participants who met the study's inclusion criteria. Before the commencement of the interviews, a list of those participants who met the inclusion criteria was identified by the researcher at the public healthcare facility's haemodialysis centre, and this list was subsequently submitted to the health personnel. The researcher further explained the objective of the study to the potential participants. This was done by the researcher briefly engaging with each participant to establish rapport, creating a friendly environment and relationship in preparation for the interview. After recruiting and building the necessary rapport with participants, data were collected from 15 October 2019 to 15 November 2019. The interviews were

conducted in a private room provided by the health personnel to ensure participants' privacy.

The researcher introduced himself to the identified participants and explained the purpose of the study. Their informed consent was also requested before interviews commenced. The participants were asked to append their signatures to the informed consent forms that were written in both Setswana and English (refer to Annexure 6A and 6B) to reflect their agreement to participate in the study. They also had the right to withdraw from the study at any time they wished, even if they had signed the consent form. Furthermore, verbal consent was also sought from the participants for the use of a digital audio recorder during interviews. The advantage of using a digital audio recorder is that it allows the researcher more time to concentrate on other aspects of the interview, like observing participants' reactions as they are responding.

In order to maintain privacy and confidentiality, participants were assured that the information collected during the interview would not be shared with anyone not directly involved with the study; however, the study will be published in accredited journals without participants' identifying information. Anonymity was also maintained by the researcher replacing participants' identities with codes throughout the report of the study's findings. Moreover, a confidentiality agreement was completed by the researcher (refer to Annexure 7).

Once written consent was provided by the 10 participants who were recruited and met the inclusion criteria, in-depth, face-to-face, semi-structured interviews were conducted. Six men and four women were interviewed within the hospital compound in a small room set aside by the personnel at the public healthcare facility. An interview guide was used (refer to Annexure 8), and a digital audio recorder assisted in the collection of data and served as a repository to store the data to be used during analysis. Furthermore, the researcher wrote field notes to adequately capture the data and observe the participants' reactions to the different questions. These notes were also used to reflect on any non-verbal clues that could improve the quality of data. Participants were probed during the interviews to elicit rich and in-depth information on the phenomenon under study.

Data were collected until data saturation was reached – when variation in participants' responses are no longer recognisable – which occurred between 15 to 20 minutes into each interview. The participants were thanked for participating in the study. The recorded data were stored electronically on CDs, the digital recorder and memory sticks in the researcher's office, together with the informed consent forms and field notes.

Participants were interviewed over four weeks, from 15 October to 15 November 2019. Interview schedules had to be changed frequently to suit the participants, and all the interviews took place between 16:30 and 20:00.

1.8.4 Data analysis

According to Flick (2013:5), qualitative data analysis is the classification and interpretation of linguistic (or visual) material to make statements about implicit and explicit dimensions and structures of meaning in the material and what is represented in it. The data analysis procedure occurred concurrently with data collection. Creswell's (2014:196-200) six steps of data analysis, which are interrelated but do not necessarily follow each other in any specific order, were used. These steps are elaborated on in Chapters 3 and 4.

1.9 RIGOUR

According to Noble and Smith (2017:33), rigour is defined as the means through which the integrity and competence of the study are shown. Burns and Grove (2010:391) associate rigour with openness, scrupulous adherence to philosophical perspectives, thoroughness in collecting data, and consideration throughout subjective theory development. Rigour is ultimately related to trustworthiness.

Trustworthiness is the degree of confidence qualitative researchers have in their data and analyses. It is assessed using the criteria of credibility, transferability, dependability, and confirmability (Polit & Beck 2017:747). These four components of trustworthiness were considered, and a data audit trail (refer to Annexure 9) was used to establish whether the collected data correlate with the findings, thus illustrating

confirmability. A member-check procedure was also conducted where participants were asked to read any transcript they participated in to authenticate or validate their earlier contributions. In addition, probing was used to create a thorough platform to elicit detailed information from participants (Noble & Smith 2017:34).

The four components of trustworthiness (credibility, transferability, confirmability and dependability) are discussed in greater depth in Chapter 3.

1.10 ETHICAL CONSIDERATIONS

Ethical consideration denotes those appropriate procedures are employed in conducting research without violating professional and legal ethos or jeopardising the rights of the participants. According to Polit and Hungler (2011:35), ethics is a system of moral values concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants.

1.10.1 Researcher-specific ethical considerations

Data were collected after ethical clearance was granted by the Department of Health Studies' Research and Ethics Committee at UNISA (refer to Annexure 1). A letter requesting permission for the researcher to conduct the study was submitted to the Ministry of Health and Wellness (refer to Annexure 3), and permission was granted (refer to Annexure 2). Furthermore, a letter requesting entry to collect data at the haemodialysis public healthcare facility was submitted (refer to Annexure 5), and permission was granted (refer to Annexure 4) before the study's commencement.

1.10.2 Participant-specific ethical considerations

1.10.2.1 Informed consent

In this study, prior to the commencement of data collection, an informed consent form was circulated to the participants asking them in English and Setswana to participate in the study voluntarily (refer to Annexure 6 A and 6B). This included an explanation of how and when the interviews would be conducted. The researcher further explained how potential risks experienced during the interviews would be mitigated. Finally,

participants were asked to sign a consent form if they wished to participate in the research. They were assured there would be no penalty should they wish to withdraw from the study, even if they had signed the consent form.

1.10.2.2 Confidentiality

According to Sanjari, Bahramnezhad, Fomani, Shoghi and Cheraghi (2014:123), confidentiality means that no personal information may be revealed except in certain situations. Groundwater-Smith, Dockett and Bottrell (2015:11) reiterate that confidentiality is the protection of study participants, so that the information they provide is never publicly divulged. The participants were assured that information gathered during the interview would be free of any identifying information and would not be shared with anyone not directly involved with the study. They were also told that the findings would be published in accredited journals with no participant identifiers. Furthermore, a binding confidentiality agreement was signed by the researcher (refer to Annexure 7).

1.10.2.3 Privacy

Maintaining privacy is about the participant; it is an ethical obligation and requirement that should be abided to at all times by all health professionals. In this study, privacy-related issues were considered through the use of codes instead of participant names. To further maintain the participants' privacy during the interview, a private room was selected where the interviews were conducted. This privacy afforded the participants the integrity and respect they deserved.

1.10.2.4 Anonymity

To ensure that anonymity was maintained, the participants' names and residential areas were concealed; instead, codes were used in reference to participants.

1.10.2.5 Beneficence

According to Polit and Beck (2017:522), beneficence is an ethical principle that addresses the idea that a researcher's (in this case a health worker) actions should promote good; that is, doing what is best for the patient. To safeguard that the rights of the participants were taken into consideration, if any conflict arose during interviews, a room was set aside so that remedial interventions like counselling could be offered.

1.11 SIGNIFICANCE OF THE STUDY

This study is intended to educate the public and service providers on kidney haemodialysis and how it impacts the lives of patients receiving the treatment. The study will also create a platform to promote an understanding of the challenges patients undergoing haemodialysis face, thereby promoting effective intervention strategies to minimise or mitigate these challenges. The study will inform health policy planning and programming in Botswana to facilitate appropriate services for patients undergoing haemodialysis on how best to respond to their social-economic challenges.

1.12 SCOPE AND LIMITATION OF THE STUDY

In this study, potential limitations are attributed to sampling challenges, which could lead to bias.

1.13 DISSERTATION STRUCTURE

Table 1.1: The structure of the dissertation

Chapter	Chapter title	Chapter description
1	Overview of the study	This chapter comprised the background of the study, the statement of the research problem, the purpose of the study, research questions, definitions, research

Chapter	Chapter title	Chapter description
		setting, research methods, data collection procedures, a guide to analysis, and the significance of the study.
2	Literature review	This chapter explores the types of renal failure, namely acute and chronic renal failure, the stages of pathophysiology and treatment of renal failure. Perspectives of haemodialysis internationally, in Africa, South Africa and Botswana are also discussed. The economic experiences and deteriorated quality of life of patients undergoing haemodialysis are also discussed in this chapter.
3	Research design and methods	This chapter presents the research methodology, research setting, sampling technique, data collection procedures and guide to analysis, and ethical considerations.
4	Data analysis, presentation and interpretation of the findings	This chapter presents the data analysis methods, the use of Creswell's six steps of qualitative data analysis, coding of the data, themes, and interpretations of the data.
5	Discussion conclusions, limitations and recommendations	The study's conclusion, limitations and recommendations are discussed in this chapter.

1.14 CONCLUSION

The chapter introduced the study's background, the researcher's statement of the study's problem, aim, and purpose. It also defined the key concepts used in the study, and reflected how data were collected. The chapter to follow is the literature review.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 addressed the background, problem statement, research design and methodology of the study. This chapter focuses on the literature review related to the phenomenon under study. According to Polit and Beck (2017:451), a literature review is a critical summary of research on a topic of interest, often prepared to put a research problem in context. It is an assessment of available information about what is being discussed from an informed point of view or a summary acknowledging other authors' contributions to the topic being researched.

The literature was searched from books, websites, and various journals on the topic of patients' social-economic experiences of kidney haemodialysis in Botswana. The following topics were addressed: stages and treatment of renal failure; the pre-renal stage; acute renal disease; CKD perspectives of haemodialysis internationally, from Africa and South Africa; and the socioeconomic factors associated with haemodialysis.

2.2 RENAL FAILURE

According to McCance, Huether and Brashers (2010:1386), renal failure occurs when the kidneys lose their ability to remove waste from the blood through urine. This condition can either happen over a short period, called acute kidney disease, or over a long period, called CKD. This study focused on CKD and progressive kidney failure that occur gradually over various stages. The condition manifests through a recognisable spectrum or continuum of five stages; stages one and two are the preliminary stages, and stage five is ESRD, which is extreme and irreversible (Tzanakaki et al. 2014:334).

The following table illustrates the stages of the CKD based on estimated GFR by Kidney Disease Improving Global Outcomes (KDIGO) (2013).

Table 2.1: The five stages of CKD

Stage	Stage classification	Estimated GFR (mL/min/1.73 m ²)	Description
1	Kidney damage with normal or high function	GFR more than 90	Normal GFR w/ proteinuria
2	Kidney damage with mild function	GFR 60–89	Age-related decline in GFR w/proteinuria
3	Moderate	GFR 30–59	Low risk of progression to kidney failure
4	Severe	GFR 15–29	High risk of progression to kidney failure
5	Kidney failure	GFR less than 15	Kidney failure

2.3 TYPES OF KIDNEY FAILURE

There are two major types of kidney failure, namely acute renal failure (ARF) and chronic renal failure. These are categorically discussed in the following sections, starting with pre-renal disease, intrinsic disease, post-renal disease and chronic disease.

2.3.1 Acute renal failure (ARF)

ARF entails sudden reduced kidney function due to injury; in the literature, it is also called acute kidney injury (AKI). This condition is characterised by the kidney's sudden loss of ability to remove waste, concentrate urine, conserve electrolytes, and maintain fluid balance over a very short period – typically hours or days. ARF or AKI is a reversible condition if discovered early and if prompt intervention is applied. This condition is usually experienced by patients with pre-existing chronic diseases, and is also prevalent among hospitalised patients. It is typically associated with a reduction in the volume of urine output, accumulation of urea, creatinine and other metabolic waste. ARF or injury can be divided into three primary aetiologies, namely pre-renal, intrinsic renal, and post-renal (McCance et al. 2010:1389). Each of these aetiologies is discussed below to demonstrate the available information on acute kidney failure.

2.3.1.1 Pre-renal failure

This condition occurs so rapidly that, within a short period, one will experience sudden kidney impairment. It is a disturbance of the cardiovascular side of the nephron. This usually starts from circular blood supply in the nephron resulting in urgent impairment of its functioning (McCance et al. 2010:1391). To explain further, Urden, Stacy and Lough (2014:709) define pre-renal failure as a condition that decreases blood flow, blood pressure or kidney perfusion before arterial blood reaches the renal artery supplying blood to the kidney.

a) Signs and symptoms

According to Basile, Anderson and Suttoncauses (2012:1302), AKI causes pre-renal azotaemia, and this includes:

- Hypovolemia resulting from haemorrhage
- Vomiting
- Diarrhoea
- Poor oral intake
- Burning
- Excessive sweating
- Renal loss (diuresis)
- Impaired cardiac output resulting from congestive heart failure or decreased cardiac output states (pericardial tamponade, severe pulmonary hypertension)
- Decreased vascular resistance (peripheral vasodilation) resulting from conditions such as sepsis
- Vasodilator medications
- Autonomic neuropathy or anaphylaxis, and renal vasoconstriction from vasoconstrictive medications or hyperkalaemia

b) Pathophysiology

McCance et al. (2010:1391) explain this condition is caused by hypo-perfusion that occurs rapidly – within a period of hours. It entails the elevation of blood urea and nitrogen alias and plasma creatinine levels resulting from impaired blood flow, culminating in weak kidney functioning.

2.3.1.2 Intrinsic renal disease

Acute intrinsic kidney failure can be caused by direct trauma or injury to the kidneys, specifically the renal tubules or glomerulus, including physical impact or an accident. Causes also include toxin overload and ischemia, which is a lack of oxygen to the kidneys (McCance et al. 2010:1391).

a) Signs and symptoms

The common symptoms of intrinsic renal disease are fever, rash, arthralgia (joint pains), headache, confusion, dizziness, and seizures associate with malignant headaches (McCance et al. 2010:1391).

2.3.1.3 Post-renal disease

According to Basile et al. (2012:1303), post-renal kidney failure is the obstruction of urinary flow; that is, the obstruction occurs outside the kidneys.

a) Signs and symptoms

Urinary tract obstruction increases intra-tubular pressure and thus decreases GFR. In addition, acute urinary tract obstruction can lead to impaired renal blood flow and inflammatory processes that also contribute to diminished GFR (Basile et al. 2012:1303). Signs and symptoms include difficulty urinating, a distended bladder, oedema, pain in the lower back and abdomen, fluid retention and swelling, including severe haematuria (McCance et al. 2010:1391).

2.3.2 Acute renal failure treatment

Acute renal failure and its complications could be successfully cured. According to the Porter and Kaplan (2011:2459), survival rates range from less than 50% for patients who experience failure of several organs to about 90% for those who have decreased blood flow to the kidneys because body fluids have been lost through bleeding, vomiting or diarrhoea. The most inexpensive and effective way to treat ARF is to ensure water intake is restricted to reduce complications that may worsen from fluid imbalances. In addition, highly concentrated carbohydrate meals, including glucose, should be taken, together with amino acids to restore and maintain adequate protein levels. It is also important that all other substances like salt and toxins that are eliminated through the kidneys be avoided.

The condition can thus be managed through diet. It is of paramount importance that the amount of liquid uptake is reduced, for the purposes of reducing the accumulation of toxins that the kidneys would normally eliminate. A diet high in carbohydrates and low in protein, salt, and potassium is usually recommended (Porter & Kaplan 2011:2459).

Treatment through medication is another option for acute kidney failure. In some cases, antibiotics are prescribed to treat or prevent any infections, and diuretics may help the kidneys eliminate fluids. Moreover, calcium and insulin can prevent dangerous increases in blood potassium levels (Porter & Kaplan 2011:2459). Dialysis can also temporarily be used in the treatment of acute kidney failure.

2.4 CHRONIC KIDNEY FAILURE

According to Evangelos, Foteini, Evmorfia, Papathanassiou, Alikari, Stathoulis, Panoutsopoulos and Zyga (2015:354), CKD is characterised by a gradual and progressive kidney infection that is generally not reversible, resulting in a reduction in renal function. It is also caused by any illness where kidney function remains diminished for a long period. Porter and Kaplan (2011:2450) also define CKD as >30 mg of urinary albumin excretion per gram of urinary creatinine, or a GFR rate of

<60mL/min/1.73m²; this includes both ESRD and improper functioning of a transplanted kidney.

As mentioned, CKD is mainly determined through the measurement of the GFR (Jha & Garcia-Garcia 2015:378; Sullivan 2010:45). GFR is a measure of kidney function, and is usually used to determine the stage of the disease. According to Liang and Chin-Ken (2015:225), GFR is a mathematical formula that comprises age, race and serum creatinine. When kidneys are functioning well, they can adequately remove creatinine; however, as kidney function slows, creatinine blood levels rise, therefore accumulating this waste product and subsequently causing damage to the kidneys. It is important to note that creatinine is a waste product produced by the body from the metabolic actions of a compound called creatine. Tzanakaki et al. (2014:343) emphasise that permanent failure of the kidney to accomplish its functions is called CKD, and failure to sustain life is called ESRD.

2.4.1 Signs and symptoms

According to Gerogianni et al. (2014:740-741), CKD lowers the patient's quality of life and is usually irreversible, progressive, and associated with adverse outcomes like total kidney failure, which leads to death. The main causes of this condition are diabetes, hypertension, and polycystic kidney disease (Jha & Garcia-Garcia 2015:377; Sullivan 2010:46).

CKD manifests through five stages. The first two stages are reversible, while stage five reflects ESRD (Tzanakaki et al. 2014:343). It is critical to note that CKD is progressive and irreversible when it has reached stage five, where the GFR is less than 15. The kidney's function has seriously deteriorated at this stage, and most people at this stage have total renal failure. These patients are put on dialysis or need a kidney transplant as urgent renal replacement therapy (Rwengerera et al. 2017:313).

2.4.2 Treatment

A low-protein and low-salt diet should manage the rise of creatine levels. Medications can also be taken to adjust blood chemical levels, including treatment for high blood pressure. A hormonal medication called erythropoietin (Epogen, Procrit) to correct anaemia (a low level of red blood cells) could also be prescribed. However, kidney dialysis is the primary treatment method, especially for patients who have been diagnosed with ESRD (Porter & Kaplan 2011:2459).

2.5 PREVALENCE OF CKD

According to Adeniyi, Laurence, Volmink and Davids (2017:363), CKD is an NCD and affects approximately 1 in 10 adults, or over 500 million people worldwide. These chronic NCDs account for around 60% of deaths globally, with 80% of these deaths occurring in low- and middle-income countries. One of the most critical and final outcomes of prolonged CKD is increased risk of cardiovascular disease (CVD) and stroke (Adeniyi et al. 2017:363). Stanifer, Jing, Tolan, Helmke, Mukerjee, Naicker and Patel (2014:171) reported that by 2030, more than 70% of patients with this disease are estimated to live in low-income countries, such as sub-Saharan Africa. This is a clear indication that the condition is increasing exponentially in the sub-Saharan Africa region.

The prevalence of CKD, especially the final stage of the condition, is currently estimated to be 8–16% worldwide and is primarily influenced by several factors, including other NCDs like diabetes, hypertension and polycystic kidney disease (Jha & Garcia-Garcia 2015:378). According to Rwengerera et al. (2017:313), there is substantial research that ESRD is increasingly being recognised as a global public health problem. To illustrate the high prevalence of CKD, the WHO (2014:4) also explains that CKD is an NCD that is a common contributor to early mortality and morbidity in many countries. It creates a significant public health challenge and is becoming more recognisable in developing countries due to the high disease burden and poor access to resources to meet treatment requirements (WHO 2014:4).

Early interventions to manage the condition are available in most developed countries, resulting in positive outcomes for these patients. However, as mentioned, this is not the case in developing countries. According to Rwengerera et al. (2017:314), the most frequent and common interventions have always been kidney dialysis or transplantation.

While the incidence of CKD has been increasing globally, there is limited information on the prevalence of this condition in developing countries, especially Botswana (Rwengerera et al. 2017:313). Jha and Garcia-Garcia (2015:379) were also of the view that there is no appropriate statistics for CKD in Africa, since screening programmes are in their infancy stages. However, countries like Botswana can still demonstrate the magnitude of the disease through literature sources from the region or other parts of the world.

According to William et al. (2012:20), the global challenges of this disease, together with urinary tract conditions, contribute to high annual mortality rates. End-stage renal disease has a serious impact on the population, with a prevalence of 2447 pmp in Taiwan and 10 pmp in Nigeria. William et al. (2012:20) also cite countries with reported increased numbers of end-stage renal disease, such as Latin America, where the prevalence is as high as 1019 pmp, 713 pmp in Tunisia and 669 pmp in Egypt. In China, particularly in major cities, the prevalence of end-stage renal disease has been reported to be 102 pmp, and in Japan, it is more than 2200 pmp, considered one of the highest rates worldwide.

Based on this discussion, this research aimed to explore and describe the socioeconomic life experiences of patients undergoing kidney haemodialysis at a public healthcare facility in a developing country, Botswana.

2.6 HAEMODIALYSIS

Chronic Kidney Disease usually calls for two-pronged and continuous medical interventions, either dialysis or renal transplant (Jha & Garcia-Garcia 2015:376). Dialyses entails peritoneal and haemodialysis. Haemodialysis is the most commonly

used renal replacement therapy worldwide (Ekrikpo, Udo, Ikpeme & Effa 2011:12), including in Africa, because it is less expensive.

Haemodialysis is defined as the separation of soluble substances and water from blood by diffusion through a semi-permeable membrane (Porter & Kaplan 2011:2459). It is a permanent treatment option, unless one resorts to kidney transplantation. The number of patients receiving long-term renal replacement therapy globally is approximately 19 million, of which over 75% are treated with maintenance haemodialysis. As stated, Bello (2014:273) emphasises that the number of patients requiring haemodialysis by 2030 will have doubled worldwide, with the largest increase expected in low- and middle-income countries.

Rwengerera et al. (2017:313), Chirona and Bhengu (2015:2), Oluyombo, Okunola, Olanrewaju, Soje and Obajolowo (2014:347) and Ekrikpo et al. (2011:12) state patients with CKD in Africa should ideally have access to haemodialysis since kidney replacement is expensive. Contemporary societies, especially developing countries like Botswana, firmly believe in haemodialysis as an intervention to assist patients with renal failure because kidney transplantation is associated with significant financial challenges. However, this procedure takes place at least two to three times per week, and there is a high probability of the treatment interfering with patients' social-economic life. Despite its direct positive medical effect, it also has negative effects, mainly attributed to the time constraints required for weekly appointments.

As stated, CKD is a chronic illness, and patients receive long-term treatment, ultimately depending on haemodialysis or peritoneal dialysis for the rest of their lives. And as mentioned, although haemodialysis is one of the most effective interventions currently assisting patients, it has its own disadvantages. The procedure itself is very painful, and it is expensive for most patients – especially those in low-income countries, where governments' budget for health tends to be low. The negative effects of haemodialysis sometimes result in patients defaulting. Calvey and Mee (2011:201) also reported that long-term dialysis therapy often results in a loss of freedom, dependence on caregivers, disruption of marital, family, and social life, and reduced or loss of financial income. The discussion below outlines the benefits and challenges of haemodialysis that have an impact on patients' lives.

2.6.1 Complications of haemodialysis

The claim that haemodialysis patients are commonly associated with depression has been highlighted by Khan, Khan, Adan, Sulalman and Mushtag's (2019:6) study on the prevalence and predictors of depression among haemodialysis patients in Turkey. In their study, the rate of depression increased among people receiving haemodialysis as time passed. A prominent increase in depression was observed in their study, from 71.4% at their first evaluation to 84% when the patients were evaluated for the second time.

The study conducted by Rojas (2017:1104), on patients undergoing haemodialysis in Middle East Turkey in 2017 to determine the effects of depression during their treatment, also reflected that depression is rife among patients undergoing haemodialysis. That study's findings were that, of the patients on maintenance haemodialysis recruited for the study, 80% reportedly suffered from depression.

Valan (2017:3) conducted a study to assess the psychosocial challenges and quality of life among chronic renal failure patients undergoing haemodialysis in a selected hospital in Cuttack, with a view of developing an information booklet. In that study, anxiety and depression were highlighted as commonly known causes of morbidity among patients with chronic illnesses. That study also revealed elevated anxiety and depression among most patients on haemodialysis who were sampled for the study.

2.7 BENEFITS AND CHALLENGES OF PATIENTS ON HAEMODIALYSIS

2.7.1 Benefits

According to Sowinski and Mariann (2011:513), the benefits of haemodialysis are well known; the first one being that it saves lives by replacing the non-functioning kidney's function. Some other advantages are that it is done three times per week, leaving most of the week dialysis free. While administering the treatment, trained staff at the dialysis centres continuously supervise and monitor patients' health and treatments.

Halle, Jimkap, Kaze, Fouda, Belley and Ashuntantang (2017:230) emphasise that the availability of renal replacement therapy (RRT) such as dialysis and transplantation,

for the treatment of ESRD, has been one of the great successes of medicine in past decades. Before dialysis, a patient diagnosed with CKD or ESRD faced imminent death (Theofilou, Synodinou & Ponagiotaki 2013:19). It is thus critical to comprehend that dialysis is now the most effective health intervention for chronically and terminally ill kidney patients. Also, according to Mukadder (2013:30), the survival rates of patients with ESRD receiving all forms of dialysis and kidney transplantation have been increasing worldwide, thus reflecting the positive impact it has on patients' life expectancy.

2.7.2 Challenges

General diseases, particularly those with prolonged duration, not only deprive patients of their day-to-day social relations, but also their productive potential. Haemodialysis has numerous outcomes for patients, sometimes leading to patients defaulting. As mentioned, Calvey and Mee (2011:201) emphasise long-term dialysis therapy itself frequently results in a loss of freedom, dependence on caregivers, disruption in marital, family, and social life, and reduced or loss of financial income. However, Tauwafeu, Ashuntantang, Mahamat and Balepna (2016:i279) reiterate that haemodialysis increases the life expectancy of patients with chronic renal failure as they continuously receive treatment.

Unfortunately, this prolonged life expectancy has contributed to a new group of complications, namely depression and poor quality of life. The reduced quality of life of patients on chronic haemodialysis includes functional limitations, alteration of social well-being, physical and emotional symptoms, as well as sexual dysfunction (Tauwafeu et al. 2016:i230).

To further elaborate on the impact haemodialysis has on the lives of patients, Georgianni and Babatsikou (2014:206) highlighted that individuals receiving this treatment experience stressful life situations, since the treatment increases their psychological and social problems. The authors (Georgianni & Babatsikou 2014:206) outlined several socioeconomic problems, financial difficulties, fear of death, restriction on leisure time and marital relationships.

According to Calvey and Mee (2011:201), numerous studies report on the drastic changes in the quality of life of patients undergoing haemodialysis. They pointed out that the changes affect the physical, psychological, psychosocial, emotional and routine lives of affected patients. In support, Gerogianni and Babatsikou (2014:740-741) also found the challenges patients experience with haemodialysis affect their psychosocial functioning. In some instances, the patient forfeits their status as head of the family, and there are cultural and traditional roles where the patient's status as a member is diminished. It has also been determined that patients on haemodialysis have been forced to retire, failed to optimise profits due to frequenting the hospital – which is expensive and compulsory – they have perpetual dietary demands, fear contacting other diseases, live in proximity to medical facilities, have an altered sexual life, and increased rates of divorce.

Nakayama, Mari, Masahiko, Hidetoshi, Yukio and Mark (2015:530) conducted research to determine whether there is any association between employment, work and haemodialysis. In their study, two groups of 113 (63%) participants working and 66 (37%) not working, were chosen to determine which group is more susceptible to loss of employment after haemodialysis inception. Their findings revealed a significant increase in the loss of employment among those working prior to dialysis. In yet another study by Theofilou et al. (2013:19), on employment and unemployment among patients undergoing haemodialysis, unemployment was singled out as a serious issue for patients undergoing haemodialysis; their difficulty was related to having to attend treatment at least three times a week.

Additional research was conducted on the social life of patients undergoing haemodialysis in Greece (Athens). Those results confirmed that dialysis negatively impacts patients' social and economic life (Gerogianni et al. 2016:125). Moreover, the conclusion that haemodialysis has a social-economic impact on patients' lives is further supported by Ikonomou, Balata, Eleftharoudi, Damigos and Siamopoulos (2015:234). Their study was also conducted in Greece, to assess the quality of life of patients on haemodialysis and the socio-demographic factors that affected these patients' lives. In that study, 172 patients were enrolled, of which 39 were undergoing peritoneal dialysis, and 90 were receiving haemodialysis. The results depicted that

among those with CKD on haemodialysis and peritoneal dialysis, 17.8% and 23.1% experienced some financial problems, respectively.

The study by Ikonomou et al. (2015:234) also reflected that unemployment is prevalent among patients on haemodialysis due to the duration and frequency of the treatment. Their findings revealed that 60% of their respondents who were on dialysis and had been interviewed reported they lost their profession, and 36.7% had retired immediately after starting with dialysis. Unemployment is thus rife among haemodialysis patients and adversely affects these patients (Huang, Lai, Xu, Wang, Cao, Yan & Chen 2017:610). In Huang et al.'s assessment of employment status, to determine the variables for unemployment among Chinese haemodialysis patients in four dialysis centres in Shanghai, China, 55% of respondents cited the prolonged time at the haemodialysis centre as the cause for them resigning from their jobs.

2.8 PERSPECTIVES OF HAEMODIALYSIS INTERNATIONALLY, IN AFRICA AND SOUTH AFRICA

2.8.1 International

2.8.1.1 Turkey

According to United Nations' Country Development Classification (2014:146), Turkey is on the verge of transitioning to a developed country. Despite the challenges it might be confronted with, it has one of the most effective health systems in the world. This health system is very supportive of its people. In 1945, health insurance was introduced in Turkey, which promoted access to most health services for the majority of citizens. This development influenced the intensification of renal replacement treatment in the country, and reduced mortality rates among patients undergoing haemodialysis (United Nations Country Development Classification 2014:146).

This assertion that Turkey has drastically lowered mortality among its patients on haemodialysis is supported by Asci, Marcelli, Celtik, Grassmann, Gunestepe, Yaprak, Tamer, Turan, Sever and Ercan's (2016:476) study, conducted in 2016 comparing the Turkish and United States haemodialysis mortality rate. They reported that the Turkish death rate was significantly lower compared to what was published by the US Renal Data System Annual Data Report. Turkish haemodialysis services are thus of high

quality and have almost all the necessary supportive systems in place, including personnel and dialysis centres, due to the country's economy rendering essential services for its people. However, it is paramount to understand that both the prevalence and incidence of CKD is also dramatically increasing, thereby imposing a threat to the country's health budget.

2.8.1.2 India

India is an Asian country of middle income, with a health system that is responsive to the needs of its population. Kaur, Prinja, Ramachandran, Gupta and Jha (2018:1) explored the cost of haemodialysis in a public sector tertiary hospital of India, where nearly 220 000 patients are diagnosed with ESRD every year. This calls for an increased need for another 34 million dialysis sessions in the country, illustrating that the burden of ESRD is increasing exponentially in India. In response to this drastic increase, the government has announced a national dialysis programme to provide free dialysis in public hospitals. Although India has its own internal health challenges, like any other country, it also has a national nephrology registry and, supplementary to that, centres catering for patients with ESRD in the different districts of the country.

2.8.2 Africa

According to Halle et al. (2017:230), globally, the number of patients receiving RRT in 2010 was estimated at 2.618 million, with only 7.2% living in lower-middle-income and low-income countries. This number will have increased to 5.439 million by 2030, mostly in developing countries. In revealing Africa's challenges in providing resources to patients with CKD, Halle, Ashuntantang, Kaze, Takongue and Kengne (2016:2) highlighted that African patients with ESRD have the lowest access to RRT, with only 9–16% being treated; in central and eastern Africa, the treatment rate is estimated to be as low as 1–3%.

In sub-Saharan Africa, haemodialysis is the most commonly used RRT, with its provision challenging. Treatment for all is beyond the reach of most countries due to the lack of funds or health insurance to cover the high costs for the ever-increasing number of people affected. Despite this disease burden, renal registries are almost

non-existent, and there is a lack of published data on the costs of dialysis in African countries (Halle et al. 2017:232).

In Africa, haemodialysis mostly takes place in health facilities because the majority of patients cannot afford to have their own dialysis equipment at home, let alone administer the procedure on their own. As stated, the dialysing procedure is carried out at least three times a week for a period of not less than three hours. According to Meremo, Ngilangwa, Mwashambwa, Masalu and Kapinga (2017:1) study at the University of Dodoma, Tanzania, it was found that the management of patients with ESRD in low- and middle-income countries is too expensive for most governments. Resources and budgets are therefore unable to meet the burden of treatment.

2.8.2.1 Cameroon

Cameroon is a central African state and, according to Halle et al. (2017:230), it is a low-income country with a population of 22.5 million. The human development indices are poor, with a low gross domestic product of \$34 billion in 2015, and only 5.1% of the country's budget is spent on health care. The country's health facilities are organised into seven categories, namely general hospitals, central hospitals, regional hospitals, district hospitals, district medical centres, integrated health centres, and ambulatory health centres. According to the WHO (2016:ix), in 2011, the ratio of health personnel (physicians, midwives, nurses, pharmacists) per population was 1.07 per 1000 population, which is a clear indication that there is an acute shortage of medical personnel in Cameroon.

Like elsewhere in the world, the prevalence of CKD has been rising in Cameroon; to the extent that the country is overwhelmed by cases, and there are few treatment centres for CKD patients. This point is emphasised by Halle et al. (2017:233), who claim that just like in most other sub-Saharan African countries, nephrology services in Cameroon are not widely available and are mostly understaffed. Halle et al. (2017:234) emphasise the history of nephrology services in Cameroon dates back to the 1980s, and interventions have been targeting ESRD treatment through the establishment of public haemodialysis centres nationwide. In 2012, for instance, the country had five nephrologists who were all practising in the two main cities of the

country. In the same year, the country had eight haemodialysis centres providing care to approximately 500 patients with ESRD.

Since the year 2002, dialysis services have been highly subsidised in public centres, which has promoted access to such services. About 1 200 patients were on treatment in nine public sector treatment centres by the end of 2016. One collateral effect of these measures has been the increasing number of people with various stages of CKD reporting to or referred to public institutions with dialysis facilities.

2.8.2.2 Botswana

At the national level, 84% of the population lives within a 5km radius of the nearest health facility, and a further 11% of the population lives within a 5km–8km radius, which translates to 95% of the population living within an 8km radius of a health facility. A significant 96% of urban residents live within a 5km radius of the nearest health facility, compared to 72% of rural residents (Statistics Botswana 2017:8, Seitio-Kgokgwe Gauld, Hill & Barnett 2017:182). Although Botswana is labelled as a middle-income country and has one of the best health systems in Africa, it still has an acute shortage of treatment centres and professionals for CKD. There are currently only four satellite centres administering haemodialysis in Botswana, namely in Francistown, Palapye, and two in Gaborone. One cannot dispute that some CKD cases still go unnoticed, and those diagnosed experience difficulties in reaching the four haemodialysis facilities, resulting in early death (Seitio-Kgokgwe et al. 2017:183).

The country's nephrology services are still in their infancy, as attested to by the former minister of health at the world kidney day in Gaborone. It was also determined there is inadequate data on kidney failure and treatment, despite the fact that studies done in southern Africa reflect its prevalence. When it comes to hypertension and diabetes, Botswana has a similar, if not higher, disease burden due to economic factors such as changes in lifestyle and dietary issues.

2.8.2.3 South Africa

According to Harriet and June (2017:243), the estimated prevalence of CKD in sub-Saharan Africa is 13.9%, which is similar to global estimates of 13.4%. However, the incidence of CKD is predicted to rise disproportionately in sub-Saharan Africa, where health transitions are characterised by rapid urbanisation, improved life expectancy, and an ageing population. In this setting, both infectious and NCDs contribute to the health risk.

Poor infrastructure and the absence of screening and prevention programmes for kidney disease are systemic factors that further accentuate this risk. As a result, CKD is often diagnosed at a later and advanced stage, when RRT is already in high demand to maintain life (Harriet & June 2017:1). Recently, the plight of those who require dialysis in sub-Saharan Africa has been highlighted. In this region, it is predicted that only 1.5% of those with diabetes and hypertension who need RRT will receive treatment. Also, almost three-quarters of adults who start dialysis subsequently die due to late presentation at healthcare facilities, poor quality dialysis, or cessation of dialysis based on its prohibitive cost. To add further perspective, the Global Burden of Disease Study reported a doubling of CKD-related deaths worldwide between 1990–2010. In sub-Saharan Africa, including South Africa, the lives lost from CKD in 2010 were among the highest in the world (Harriet & June 2017:5).

South Africa, which is one of the economic giants of sub-Saharan Africa, is not in a state to proportionally respond to the challenges of its population. This is emphasised by Pozo, Leow, Groen, Kamara, Hardy and Kushner (2012:652), who estimated over 50% of ESRD patients in South Africa have not been offered dialysis or transplantation, and elsewhere on the continent, even fewer receive necessary treatment.

2.9 CONCLUSION

The literature review covered different topics and types of renal failure, including acute kidney failure and chronic kidney failure. The kidney failure signs and symptoms, pathophysiology and treatment were reflected to enrich understanding of the topic.

The stages through which renal failure progresses, and different countries' interventions for the phenomenon, were also discussed.

The next chapter will present the research methodology employed for this study.

CHAPTER 3

RESEARCH DESIGN AND METHODS

3.1 INTRODUCTION

The previous chapter focused on reviewed literature on patients' socioeconomic life experiences while undergoing kidney haemodialysis. In this chapter, the research design and methodology used in the study are clearly outlined. The chapter also describes the research setting where the study was conducted and the population from which the sample was drawn. An in-depth discussion of the data collection procedures, data analysis and ethical considerations are also presented.

3.2 RESEARCH SETTING

The research setting is the physical location and conditions under which data collection occurs (Polit & Beck 2017:261). This research was conducted in one of the public healthcare facilities with a haemodialysis clinic in Gaborone, Botswana (refer to Annexure 12). This health facility has been operating a renal care centre for more than seven years and, as such, is one of the centres to assist in the provision of information on individuals' experiences of haemodialysis.

3.3 RESEARCH DESIGN

Research designs are plans and procedures for research that guide researchers' decisions from broad assumptions to detailed methods of data collection and analysis (Creswell 2014:196).

This study employed a qualitative, explorative, descriptive and contextual research design based on phenomenological guidance. The qualitative research design was most suitable for this study because it allows the researcher to go back and forth between steps as new findings emerged throughout the research process. Qualitative approaches are also not necessarily undertaken in a linear fashion, as is the case with quantitative studies.

3.3.1 Qualitative design

Qualitative research, by nature, often relies on interpretive or critical social science. Therefore, an enquiry is made logically in a practical situation. According to Polit and Beck (2017:261), qualitative research represents authentic interpretations that are sensitive to specific social history. Qualitative researchers are therefore well known for collecting data in a natural setting.

Phenomenology is a qualitative research method used to describe a 'lived experience' of a phenomenon. It is inspired by the branch of philosophy that concerns the phenomenon of human consciousness (Polit & Beck 2017:286). Phenomenological studies attempt to deeply comprehend human nature and individuals' viewpoints on a given situation; that is, describing really lived experiences. In a normal situation, this approach illustrates a methodology that promotes the gathering of information from those experiencing the phenomenon being investigated through inductive means. In support, Padilla (2015:103) explains phenomenology is the reflective analysis of life-world experiences.

This study explored and described the social-economic life experiences of patients undergoing kidney haemodialysis at a public healthcare facility in a developing country, Botswana. The researcher collected data from participants' real world or naturalistic settings, thus approaching the research from a phenomenological point of view.

3.3.2 Explorative design

As the name suggests, an explorative design entails an exploratory mission, intending to explore the phenomenon being researched. It does not intend to offer any solution to the existing problem (Creswell 2014:214). According to Neuman (2014:191), the exploratory research approach assists researchers in developing initial ideas and a more focused research question. It is usually conducted to determine the nature of the problem without providing conclusive evidence. It is mostly carried out to explore the depth of the phenomenon, and forms the basis for more conclusive research. In this

study, an in-depth exploration of the socioeconomic life experiences of patients undergoing haemodialysis was conducted and described.

3.3.3 Descriptive design

The descriptive design is premised on the basis that groundwork has been established through an exploratory design. This design attempts to provide more information about the phenomenon, and describes what is happening with the phenomenon in detail. According to Neuman (2014:193), descriptive research paints a picture with words or numbers, presents a profile, and outlines stages or classifies types. It tries to expand our understanding of the phenomenon by filling in the missing parts. This study explored and described the socioeconomic life experiences of patients undergoing kidney haemodialysis.

3.3.4 Contextual design

A contextual design denotes that a phenomenon should be studied for its intrinsic, immediate, and contextual significance. Contextual designs emphasise that a phenomenon should be studied in its most naturalistic settings (Neuman 2014:193), which are uncontrolled real-life situations. This approach of studying a phenomenon in a natural setting refers to an enquiry being conducted, free of manipulation, and entails collecting data in the field where people are living (Polit & Beck 2017:261). For this study, the researcher interviewed patients undergoing haemodialysis in one of the public healthcare facilities in Gaborone, Botswana.

3.4 RESEARCH METHODS

According to Creswell (2014:196), research methods involve data collection, analysis and the interpretation that researchers propose for their study. It typically reflects the procedure through which the researcher plans to collect information; therefore, it includes the methods researchers employ to collect data from participants, such as interviewing. The data collection method used in this study was qualitative in nature.

3.4.1 Population

Brink, Van Der Walt and Van Rensburg (2017:171) describe a population as the entire group of persons or objects of interest to the researcher; in other words, they meet the specified inclusion criteria. It is the group from which participants experiencing the phenomenon being studied are extracted (Sergeant 2012:1). The population for this study was patients undergoing haemodialysis at the clinic of a selected public healthcare facility in Gaborone, Botswana.

3.4.2 Sampling technique and sample

This study used non-probability sampling, which is purposive, as the researcher already knew the eligible population who can benefit from the study. This point is reiterated by Neuman (2014:198), who claims purposive sampling uses an expert's judgment in selecting cases with a specific purpose in mind. A maximum variation purposive sampling method was used to select the sample, which involves selecting people or settings with varying dimensions of interest to the researcher (Polit & Beck 2017:517).

The sample of 10 participants was recruited from patients attending a haemodialysis clinic at the chosen public healthcare facility in Gaborone, Botswana, over the two years prior to data collection. All participants were older than 18 years at the time of data collection. This sample of 10 was sufficient to represent the views of other patients undergoing haemodialysis at the public health facility in Gaborone. Phenomenological studies typically rely on small samples of participants – usually 10 or fewer (Polit & Beck 2017:309). With a small sample, the researcher is not primarily focused on representation in the population, but that all the participants should have experienced the phenomenon being explored and are able to communicate well.

3.4.2.1 Inclusion criteria

The inclusion criteria were: male and female patients older than 18 years, receiving treatment at one of the public healthcare facilities with a haemodialysis clinic in Gaborone, Botswana, for at least two years. This health facility has been operating a

renal care centre for more than seven years and, as such, is one of the centres to assist in the provision of information on individuals' experiences of haemodialysis.

3.4.2.2 Exclusion criteria

The exclusion criteria were all patients younger than 18 years (whether female or male) and enrolled in the haemodialysis programme for less than two years.

3.5 DEVELOPMENT AND PRE-TESTING OF AN INSTRUMENT

A data collection tool or instrument is a technique researchers use to collect data (Polit & Beck 2017:756). In this study, an interview guide was developed by the researcher and subsequently used as an instrument for data collection (refer to Annexure 8). It comprised a grand tour question, followed by open-ended questions that were all translated into two languages (Setswana and English) as a requirement of the Ministry of Health and Wellness ethics committee (refer to Annexure 2).

3.5.1 Pre-testing the data collection instrument

According to Hilton (2014:5), pre-testing is a method used in checking whether a developed questionnaire will gather the intended information, and whether participants clearly understand the questions. It is an imperative method to evaluate whether the interview guide performs as planned. In this study, the interview guide was the tool that needed to be pre-tested. This pre-testing was conducted at the same sampled haemodialysis public healthcare facility in Gaborone before the commencement of the main study. The primary reasons for pre-testing the instrument were to:

- determine the suitability of the language for the participants;
- determine the relevance of the interview guide in relation to its intended purpose;
- assess the appropriateness of the interview guide regarding its suitability to the participants' rights; and
- ensure sampling error was reduced to increase the response rate.

Three participants, who were all over 18 years, were recruited from the list of patients who had been receiving haemodialysis for more than two years to pre-test the interview guide. Only three participants were chosen for pre-testing because there was insufficient time for the researcher to conduct interviews with more participants. The participants were recruited from the haemodialysis centre list compiled by the health staff from 15 September 2019 to 17 September 2019. Prior to their participation in the study, permission was sought from the hospital management for the researcher to access the haemodialysis clinic (refer to Annexure 5). Moreover, before commencing the pre-testing, the researcher explained the purpose of the study to the participants and asked them to complete an informed consent form that was written in English and Setswana (refer to Annexure 6A and 6B) to indicate their agreement to participate in pre-testing the interview guide. The participants were also verbally informed about the use of the digital audio recorder as a data collection instrument.

The three participants were individually interviewed on 22 September 2019 between 15:00 and 16:00 in a private room in the public healthcare facility where haemodialysis is administered, thus maintaining their privacy. Furthermore, in order to maintain the participants' privacy, the researcher ensured the pre-testing information was only known by him and the participants. To maintain anonymity, the researcher ensured the participants' identities – including their names, place of residence and any other biographic information – were protected from the public or any other person who was not part of the study. Confidentiality was maintained by confirming all identifiers were removed from all documentation, and a confidentiality agreement (Annexure 7) was signed by the researcher.

The pre-testing was completed after all three participants were interviewed and data saturation was reached. The feedback reflected there was no need to modify the interview guide. The collected information, together with informed consent and confidentiality agreement, was stored electronically in the researcher's office.

3.6 DATA COLLECTION

According to Grove, Gray and Burns (2015:502), data collection is a detailed, systematic approach to gathering information from the target group, relevant to the

research purpose, questions and specific objectives of the study. It is the process of gathering information of interest or laid down in the research objectives in a systematic fashion that enables one to answer the stated research questions (Edwards & Holland 2013:3). Data were collected through in-depth, face-to-face, semi-structured interviews with 10 patients. These participants were all older than 18 years and attending a haemodialysis clinic at a public healthcare facility. In-depth interviewing is a face-to-face data collection method that gives both the interviewer and the interviewee freedom to go further into the phenomenon being explored; it presents an opportunity for the researcher to capture rich information (Polit & Beck 2017:527).

According to Polit and Beck (2017:345), an in-depth interview is a conversation with an individual conducted by a trained person who usually collects specific information about one person. Data were collected after the researcher received ethical clearance from the Department of Health Studies' Research and Ethics Committee at UNISA (refer to Annexure 1), and permission was granted by the Ministry of Health and Wellness (refer to Annexure 2). Furthermore, permission was also granted by the public healthcare facility rendering haemodialysis (refer to Annexure 4).

3.6.1 Data collection procedures

After gaining written permission from the hospital management (refer to Annexure 4) for the researcher to access the haemodialysis clinic, the health personnel (nurses) assisted the researcher in identifying participants who met the study's inclusion criteria. A compiled list of patients who met the inclusion criteria was thus availed to the researcher by the health personnel. The health personnel ultimately assisted the researcher in identifying the 10 participants, guided by the purposive sampling method. The researcher then introduced himself to each prospective participant to build the necessary rapport with them in preparation for the interview. To ensure that rapport was maintained, the researcher explained the purpose of the study to each of the selected participants and how it would benefit them.

A private room was made available at the health facility to conduct the interviews to maintain participants' privacy. Confidentiality was maintained by assuring participants that the information gathered during the interview would not be shared with anyone

not directly involved in the study. Participants were also informed that the study would be published in accredited journals, with no participant identifiers. A confidentiality agreement was completed by the researcher (refer to Annexure 7) in the presence of the participants, to demonstrate the information received from the participants would only be known by the two of them and no one else. Anonymity was also maintained by ensuring that the participants' identifying information was replaced by codes throughout the report of the study's findings.

As stated, the researcher introduced himself to the identified participants and explained the purpose of the study. Informed consent was then requested from the participants. They were asked to append their signatures on the informed consent forms, written in Setswana and English (refer to Annexure 6A and 6B), reflecting their wish to participate in the study. The researcher also explained that participants had the freedom and right to withdraw from the study at any time, even if they had signed the consent form. Furthermore, verbal consent was also sought from the participants to use a digital audio recorder. This allowed the researcher to focus on the interview without being distracted by having to concentrate on taking note of all the information presented by the participant.

After informed consent was obtained, an in-depth interview was conducted with each of the 10 participants (sample) who were recruited from the list of patients attending the haemodialysis clinic at the chosen public healthcare facility in Gaborone, Botswana, over the past two years. Six men and four women were interviewed within the hospital compound in a small room set aside for the interviews.

The interviews were conducted over four weeks, from 15 October 2019 to 15 November 2019. Interview schedules were adapted to suit the participants' needs, and all the interviews took place between 16:30 and 20:00.

An interview guide was used (refer to Annexure 8) to facilitate the interviews. The digital recorder was also used to collect participants' verbatim responses and served as a repository to store the data to be used during analysis. Furthermore, the researcher wrote field notes and observed the participants' reactions to the different

questions to detect any non-verbal clues that could assist in improving the quality of the collected data. Participants were probed during the interviews.

Data were collected until participants' responses did not generate any new information (reflecting data saturation), and this typically took between 15 and 20 minutes. The participants were thanked for their participation in the research, and they were informed that the study's results would be shared with them. The recorded data from the interviews were stored electronically in CDs, on the digital audio recorder and memory sticks in the researcher's office, together with any other confidential information, like the informed consent forms and field notes.

3.7 DATA ANALYSIS

Flick (2013:5) explains that qualitative data analysis is the classification and interpretation of linguistic (or visual) material. This material is used to make statements about the implicit and explicit dimensions and structures of meaning in the material, and what is represented by the information.

Creswell's (2014:196-200) six-step data analysis procedure was employed, and this analysis was performed concurrently with data collection. Creswell's data analysis steps are interrelated but do not necessarily follow each other in any specific order. The steps for the analysis entail organising and preparing the data for analysis, reading the transcripts, coding data (according to systematically arranged themes developed before data collection, including those identified during the process of data collection), describing the research setting, sample, and categories or themes, before ultimately presenting and interpreting the results.

To illustrate, the raw data were collected through the use of a digital audio recorder and field notes. The recorder, supplemented by field notes, allowed the researcher to maintain the quality of the data and avoid misrepresentation of participants' ideas. The information extracted from the digital recorder and field notes was systematically organised and arranged into meaningful units and systematic categories. The data were read several times to derive its general significance and determine the overall meaning of what participants were saying. The data were then coded; that is, the data

were categorised into meaningful segments based on what was emerging from the data. The codes were read comprehensively and holistically to develop themes, perspectives and categories for the study. The data were finally interpreted, and the researcher derived significance from the themes and explained the overall meaning of the data that were representative of the collective participants' perspectives, not those of individuals. The data analysis procedure is elaborated on in Chapter 4.

3.8 RIGOUR

According to Noble and Smith (2017:34), rigour is the means by which researchers show the integrity and competence of their study. Burns and Grove (2010:391) associate rigour with openness, scrupulous adherence to philosophical perspectives, thoroughness in collecting data, and consideration of all in subjective theory development. Rigour is associated with trustworthiness, which reflects the degree of confidence qualitative researchers have in their data and analyses, using the criteria of credibility, transferability, dependability, and confirmability (Polit & Beck 2017:747). These four components of trustworthiness are each described in the sections that follow.

3.8.1.1 Credibility

Credibility is the criterion used to evaluate the integrity and quality of qualitative studies. It refers to confidence in the truth of the data; analogous to internal validity in quantitative research (Polit & Beck 2017:559). To ensure the credibility of the participants in this study, they were encouraged to be honest and frank with the information they were sharing. Participants were informed how false information could distort the findings of the study, thereby encouraging their honest responses.

3.8.1.2 Transferability

Transferability is deemed essential to the generalisability of data. It entails the extent to which the findings can be transferred to or have applicability in other settings or groups (Polit & Beck 2017:561). Among the many strategies of ensuring transferability, as suggested by Mandal (2018:591), this study focused on a thick, detailed descriptive

strategy to get rich information from participants on their experiences of the effects of haemodialysis. This information is expected to assist other researchers who might be interested in this phenomenon in different situations.

To ensure that transferability was maintained, the researcher used a thick, detailed description strategy, and participants were continuously probed to elicit rich responses to the issues raised by the researcher. Depending on the responses obtained from the in-depth interviews, this study's findings could be transferred to other haemodialysis centres for comparison.

3.8.1.3 Confirmability

Confirmability is a criterion of integrity in qualitative research, referring to the objectivity or neutrality of the data and interpretations of the findings (Polit & Beck 2017:559). In this study, a data audit trail (refer to Annexure 9) was used to determine if the collected data correlate with the findings. A member-check procedure was also conducted during data collection, where participants were asked to read the transcript of their interview and authenticate or validate their earlier contributions. Probing was also used during interviews to create a platform to elicit detailed data (Noble & Smith 2017:34).

3.8.1.4 Dependability

Dependability, according to qualitative researchers, is a criterion used in evaluating the integrity of the findings, referring to the stability of data over time and conditions (Brink et al. 2018:159). The researcher also facilitated a member-check procedure where participants were asked to read the transcript of their interview to authenticate or validate their earlier contributions. Probing allowed the researcher to collect detailed data from the participants (Noble & Smith 2017:34). The researcher repeatedly evaluated the effectiveness of the inquiry that was undertaken by ensuring detailed data were obtained throughout the data collection process.

3.9 ETHICAL CONSIDERATIONS

Ethical consideration denotes that the appropriate procedures are employed in conducting research without violating professional and legal ethos or jeopardising the rights of the participants. According to Polit and Beck (2017:35), ethics is a system of moral values concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants.

3.9.1 Researcher-specific ethical considerations

Data were collected after ethical clearance was received from the Department of Health Studies Research and Ethics committee at UNISA (refer to Annexure 1). To gain permission to conduct the study at the public healthcare facility, a letter was sent to the Ministry of Health and Wellness requesting authorisation (refer to Annexure 3). Permission was ultimately granted by the Ministry of Health and Wellness (refer to Annexure 2) for the researcher to conduct the study. Furthermore, and in line with satisfying all ethical requirements, another letter was written to the hospital management requesting permission to interview patients at the haemodialysis clinic (refer to Annexure 5); this permission was also granted (refer to Annexure 4).

3.9.2 Participant-specific ethical considerations

3.9.2.1 Informed consent

In this study, prior to the commencement of data collection, a consent form was circulated to the participants asking them to voluntarily participate in the study (refer to Annexure 6A and 6B). This included an explanation of how and when the interviews would be conducted. The researcher further informed the participants how any risks experienced during the interviews would be mitigated and, in the absence of such risks, the interview would continue. Participants were then asked to sign a consent form if they wished to participate in the study. They were assured that no penalty would be imposed on them should they withdraw from the study at any time, even if they had signed the consent form.

3.9.2.2 Confidentiality

According to Sanjari et al. (2014:123), confidentiality means that no personal information may be revealed except in certain situations. The participants were assured that the information gathered during the interviews was free of their identity and would not be shared with anyone not directly involved with the study. Participants were informed that the research findings would be published in accredited journals without any participant identifiers. Furthermore, a confidentiality agreement was signed by the researcher (refer to Annexure 7).

3.9.2.3 Privacy

Maintaining clients' privacy is an ethical obligation and requirement that should be abided by at all times by all health professionals. In this study, privacy-related issues were considered through the use of codes instead of names. To further maintain privacy during the interviews, a separate private room was identified where the interviews were conducted. This privacy afforded the participants the integrity and respect they deserved.

3.9.2.4 Anonymity

To ensure anonymity was maintained, participants' names, their residential addresses, and all other biographic information were concealed. Instead, codes were used to identify participants throughout the report of the study.

3.10 CONCLUSION

This chapter discussed the research design, methodology and ethical considerations that were adhered to in this study. The next chapter will address the data analysis procedure employed in this study, and include the presentation and interpretation of the research findings.

CHAPTER 4

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF THE FINDINGS

4.1 INTRODUCTION

The previous chapter discussed the research design and methodology, which is the data collection procedure. In this chapter, the researcher presents the data analysis and interpretation of the research findings. The data were collected and analysed to ensure the objectives of the study were met and the research question – on patients' socioeconomic life experiences while attending kidney haemodialysis in Botswana – was sufficiently answered.

The objectives for the study were:

- to identify and describe the socioeconomic effect haemodialysis has on patients;
- to explore the impact of haemodialysis on the social-economic lives of patients attending haemodialysis; and
- to determine the best way to support patients attending haemodialysis socioeconomically.

4.2 DATA ANALYSIS AND PRESENTATION

Data analysis in qualitative enquiries aims to make sense of the vast amount of data that one would have collected (Creswell 2014:195). It is a process that involves dismantling compact data to extract an understanding and converge data in a summarised version to depict meaningful themes for discussion. According to Polit and Beck (2017:347), this is a process of focusing on the data and disregarding other parts of it.

In this study, in-depth face-to-face interviews were conducted with 10 participants. These participants were CKD patients who had been on haemodialysis at the selected

public healthcare facility in Gaborone, Botswana, over the past two years and were all older than 18 years.

The researcher adopted Creswell's method of data analysis, which consists of six steps (Creswell 2014:194). These steps were discussed and applied in this study as follows:

Step 1: Organise and prepare the data for analysis

In this study, the data were collected through audio-recorded interviews, observation and field notes. The data then needed to be organised. This meant the data were first transcribed, which entails extracting the participants' verbatim words, aligning these words to the field notes, and relating them to the researcher's observations during the interviews. The data were then arranged into categories in preparation for the analysis.

Step 2: Read or look at all data

In this step, the researcher repeatedly read the data to ensure only the data relating to the study's objectives were retained. The researcher also removed all data that were not necessary for the study.

Step 3: Coding the data

The repeatedly read data were subsequently coded; the process entails putting together sentences and ideas with the same meaning. These categories were later labelled into themes, which were ultimately adopted as a major guide to facilitate effective data analysis. Colours were apportioned to the different themes for easy understanding and alignment of identical opinions. Coding is about placing segments, pictures and text data in categories and then labelling them with a term (Creswell 2014:196).

Step 4: Descriptions of themes and categories emanating from the data

In the fourth step, the researcher described the themes and categories emanating from the data for meaningful and smooth analysis. This coding process was used to generate descriptions of the research setting and people. The researcher categorised the themes to be analysed, then explored how the descriptions and themes represent

the qualitative narrative of the study. The final step required the interpretation of qualitative research conclusions and results.

Step 5: Presentation of the themes and categories

In this step, the researcher finally packaged themes and categories together for further analysis in table format (refer to Table 4.2).

Step 6: Interpretation of data

In the sixth step, the researcher interpreted the data by going through each theme to determine what was really established from the information collected, attach meaning to the themes, and draw conclusions. The researcher's interpretation was supported by relevant literature.

It was also critical to note that the field notes and the researcher's observation of participants' reactions during the interview gave the researcher more information about the participants. The field notes and observations also enhanced the formation of themes for analysis. The participants' demographic information was also essential to determine that the study maintained the inclusion criteria, as proposed in Chapters 1 and 3.

4.3 PRESENTATION OF THE FINDINGS

The coding process resulted in 13 themes:

- Appreciation for haemodialysis treatment
- Physical factors
- Psychosocial factors (feeling towards the treatment)
- Fear of death
- Distance and transport challenges in reaching the haemodialysis centre
- Dietary restrictions
- Impact of time-related challenges on socioeconomic activities
- Economic impact
- Altered responsibility and relationship with family and at the community level

- Decentralised services, improved availability and accessibility to haemodialysis machines and skilled professionals
- Alternative treatments
- Psychosocial services
- Social safety nets

4.4 DEMOGRAPHIC DETAILS

Table 4.1: Participants' demographic details

Participant	Age	Gender	Marital status	Employment	Area of residence in relation to haemodialysis centre
A	50	M	Divorced	Employed	Gaborone
B	49	M	Married	Self-employed	Outside Gaborone
C	33	M	Single	Employed	Outside Gaborone
D	49	M	Married	Self-employed	Outside Gaborone
E	58	M	Single	Unemployed	Outside Gaborone
F	33	F	Single	Unemployed	Gaborone
G	42	F	Married	Unemployed	Outside Gaborone
H	38	F	Single	Unemployed	Outside Gaborone
I	52	M	Single	Unemployed	Outside Gaborone
J	27	F	Single	Unemployed	Outside Gaborone

Table 4.1 outlines the participants' demographic information. Participants' ages ranged from 27 to 58. Six participants were men, while four were women. The majority (8/10) of the participants resided outside Gaborone, and only two lived within Gaborone. Of the 10 participants, six were unemployed, two were self-employed, and two were formally employed. Their marital status also differed; most participants were not married, three were married, and one was divorced.

4.5 THEMES AND CATEGORIES

Table 4.2: Themes and categories

No	Themes	Categories
1.	Appreciation for haemodialysis treatment	Treatment very effective Reduced effects of the disease
2.	Physical factors	Fatigue, painful perforation
3.	Psychosocial factors	Challenges that ranged from frustration, anger, feelings of hopelessness, stress, loneliness, loss of a sense of belonging, and lack of support Patients were emotional Feelings of frustration
4	Fear of Death	Constant worry about their disease
5.	Distance and transport challenges in reaching the haemodialysis centre	Challenges with the cost and unreliability of transport to and from the dialysis centre Limited time to spend with family members Distance impacts negatively on their treatment schedule
6.	Dietary restrictions	No support for their special diet Patients' failure to adhere to a special diet Family's lack of support and failure to provide for patients' special diet
7.	Impact of time-related challenges on socioeconomic activities	Lack of time to engage in economic activities Limited time for leisure activities
8.	Economic impact	Difficulty engaging in economic life Resigning from their job
9.	Altered responsibility and relationship with family and at the community level	Lost community status Divorce Failure to fulfil conjugal activities
10.	Decentralised services, improved availability and accessibility to haemodialysis machines and skilled professionals	Increased equipment for dialysis Upgraded machines Reduced waiting times More trained professionals

No	Themes	Categories
11.	Alternative treatments	Other alternatives to haemodialysis Kidney transplant
12.	Psychosocial services	Counselling services Alternative accommodation
13.	Social safety nets	Special diets are expensive

4.5.1 Theme 1: Appreciation for haemodialysis treatment

All 10 participants said, regardless of the side effects they experienced, haemodialysis treatment is an essential prerequisite for patients with CKD, since it has impacted positively on their lives. Participants appreciated this treatment modality and believed the treatment was effective and had actually improved their health status, considering they were very sick before they enrolled in the treatment. The following are some of the reflections they shared in terms of their appreciation for the treatment:

Participant 10 *“It is important to inform you that dialysis has really changed my life both positively and negatively. First, dialysis has improved my condition, when I first came here, I was really sick feeling dizzy and experiencing short breath, could not breath well. However, within just a week, things were becoming okay, I could feel life was coming back to me though I had concluded that I was not going to make it”*

Participant 7 *“Dialysis yes has revived my life without it, I do not think I would be living, it is a very important procedure that I would recommend confidently to all patients who are out there who are still hesitant”*

Participant 2 *“Dialysis has actually assisted me positively, I should confirm, if a service is worth credit we should mention, if it was not for it I do not think I would be alive ... within two days after starting my treatment my condition tremendously improved I could feel much better the swelling disappeared and the suffocation subsided in an instant time I was back to life, how great it was when I discovered this. Dialysis is the best medical solution that ever come to my rescue from the complications I was experiencing”*

Participant 3 *“However it is important to acknowledge the fact that this type of dialysis I am undergoing has really saved my life it has added many years to my life”*

Participant 2 *“Dialysis although a very good initiative/treatment, it is really helpful without it, I would have lost my life”*

Participant 1 *“Dialysis has given me hope”*

This stance, that haemodialysis improves the quality of life of people undergoing treatment, is supported by Himmelfarb, Vanholder, Mehrotra and Tonelli (2020:558). In their study on the current and future landscape of dialysis, they similarly found that haemodialysis improves patients' quality of life.

4.5.2 Theme 2: Physical factors

Although haemodialysis had a positive impact on the lives of all 10 participants who were interviewed, they mentioned experiencing unpleasant circumstances, especially after their dialysis treatment. All the participants mentioned that besides the pain they experienced in terms of having the dialysis tubes inserted to administer the haemodialysis, the after-effects of the processes were also hard on them. They experienced constant fatigue that required them to rest, and they often felt unable to do anything.

Participant 4 *“The after-effects of treatment are severe, time and again I have continuous headache dizziness and I feel so tired that I feel like just resting and doing nothing”*

Participant 1 *“I now have no stamina I am worried that I am no more fit than I was before I experienced this condition”*

Participant 4 *“The process of dialyzing is really painful this is because the process comes up with very tiring side effects that one end up not able to carry out anything, but just to sleep. This tiredness extend to work and one is always dozing at work”*

The reflections alluded to by participants, that fatigue had a serious impact on their lives, are supported by Maniam, Subramanian, Singh, Lim, Chinna and Rosli (2014:476). Their study explored an exercise programme to reduce fatigue and improve sleep among long-term haemodialysis patients, and was conducted in Singapore. In that study, which was carried out over 12 weeks, it became evident that there was improved quality of life among those who participated in the exercises, while fatigue worsened among the control group who did not participate in the exercises.

4.5.3 Theme 3: Psychosocial factors

It is important to note that all the participants who were interviewed had experienced some psychosocial challenges. Although the issues differed from one participant to the next, the predominant and recurring denominator was that they all experienced a sudden transformation from a normal, happy life, to a life full of emotional complications. These psychological challenges ranged from frustration, anger, feelings of hopelessness, stress, loneliness, loss of a sense of belonging, and lack of support. The following comments were made by participants regarding their changed lives due to the treatment they were undergoing.

Participant 1 *“I had energy, dreams, I developed my plot saving money for projects and my life suddenly came to a stop. Dialysis is not a joke, majority of us here are emotionally depressed”*

Participant 5 *“Psychosocial services should be provided throughout as on daily bases emotions are down and one needs counselling. In my case it is cumbersome to appoint with social workers for counselling since I arrive late and leave early for my treatment so this service should rather be provided at the centre”*

People who are terminally ill typically experience some psychosocial challenges as these conditions cause a degree of inconvenience in their day-to-day lives. Gerogianni, Babatsikou, Gerogianni, Grapsa, Vasilopoulos and Koutis (2014:424) conducted a study on the concerns of patients on dialysis in Greece. In that study, similar findings were reported; it was determined that people undergoing

haemodialysis treatment experienced many psychological challenges like depression and low participation in economic activities, leading to isolation.

4.5.4 Theme 4: Fear of death

Among the participants who took part in this study, eight mentioned fearing losing their lives at any given time. This perception caused most of them to adhere to the haemodialysis treatment, irrespective of the other challenges they experienced. The fear of death preoccupied their minds, to the extent that there was very little they could do for themselves except to isolate themselves and seek solace from those who understand their predicament.

Participant 7 *“Dialysis yes has revived my life without it, I do not think I would be living”*

Participant 1 *“I was emotionally attached at the beginning but accepted as I could see that this was the only way to survive”*

Participant 2 *“Sometimes I feel so angry that it would be better if I am not living, I cannot explore the world opportunities to bring food to the table. Mortality is high amongst our colleagues here this really bring about all the fear one can think including death”*

The issues raised by the participants are consistent with findings from previous research, which determined that patients undergoing haemodialysis are prone to psychological difficulties, including depression and fear of mortality (Gerogianni et al. 2014:424).

4.5.5 Theme 5: Distance and transport challenges in reaching the haemodialysis centre

One of the issues of concern raised by all the participants, regardless of their proximity to the haemodialysis centre, was transport to and from the haemodialysis centre. The majority (6/10) of participants who took part in the study were not engaged in any form

of gainful employment and therefore found it difficult to pay for their transport. Of those who owned vehicles, most indicated challenges with fuel as their main concern. Since the dialysis centre is situated in Gaborone, participants found it cumbersome to go to the centre, especially three times a week.

Participant 8 *“One of my biggest challenge since inception of dialysis has been transport I have problems of transport the availability and affordability of transport is a serious challenge”*

Participant 7 *“This hospital visits have seriously affected my income I now cannot buy clothing for myself because I have to save for transport or prioritize to attend the sessions. The biggest challenge that I am faced with is the issue of transport, you know I dialyse three times a week and for about four hours per session”*

Participant 5 *“So coming to the RCU has been very difficult because sometimes I have to negotiate with family members for money to attend the sessions. This is really an issue as sometimes I arrived for the session very late because I am hitchhiking and this would automatically mean I am going to go into the machines at the centre late therefore living late at facing the challenges of being attacked as a woman”*

Participant 6 *“The issue of transport is so serious that I sometimes reach home at midnight walking sluggishly after treatment experiencing all the side effects of tiredness. Imagine how Dangerous Old Naledi is especially at night”*

It is critical to note that the issues raised by the participants have similarly been reported elsewhere, including in first-world countries. According to Yazawa, Omae, Shibagaki, Inaba, Tsuruya and Kurita (2020:641), transport to dialysis centres is critical so patients can have fluid removed to promote their quality of life. However, there are instances where patients are unable to pay for their transport, resulting in their failure to attend the sessions, worsening their condition.

Moreover, to improve and maintain a desirable quality of life, patients undergoing haemodialysis should commute to the dialysis centre and receive treatment at least three times a week. Six out of the 10 participants mentioned this as a serious

challenge, since they had to travel from faraway places to receive dialysis in Gaborone. This, to them, was worrisome, because they did not have time to rest since they were always on the road. Ultimately, they became more anxious about the distance than the treatment's side effects. Some participants mentioned they had to move away from their families to live closer to the treatment centre.

Participant 7 *"I am not working, my husband although working is not staying with me, I had to move closer to the treatment centre and leave him some distance away where he is working I"*

Participant 4 *"I rarely visit my three children who are currently staying inwith my grandmother because I am now a Gaborone resident due to dialysing and of course lack of enough money to visit them and at the same time sufficiently honouring dialysis appointments"*

Participant 8 *"I am really concerned about the distance between my village and the Renal Care Centre, this distance is very long I am ever on the road"*

The previous reflections present some of the issues raised by the participants in this study regarding the distance to haemodialysis. In their study investigating the potential reasons behind missed dialysis sessions in the United States of America over a period of five years, Chan, Thadhani and Maddux (2014:2643) reported similar findings. In that study, the distance to the dialysis centre was identified as a reason for poor adherence. It is, however, paramount to note that although distance was identified as a problematic issue for the participants, none of them related it to any treatment complications or adherence. The majority of participants only mentioned it as a contributory factor to their persistent fatigue and the cost of transport associated with it.

4.5.6 Theme 6: Dietary restrictions

According to Thorsteinsdottir, Swetz, Feely, Mueller and Williams (2020:516), patients undergoing treatment for ESRD have restrictions in their diet, and treatment success is highly dependent on patients' adherence to a special diet. This minimises patients'

risks to complications that might arise. There was no variance among the participants regarding the above statement in this study; they all had an obligation to ensure that their dietary restrictions were reasonably followed. However, two prominent issues were mentioned by these participants regarding dietary restrictions. The majority (6/10) indicated that since they were not working, they could not cope with special dietary restrictions because they lacked the resources to buy the appropriate food. These participants had to rely on meals being provided by those living with them. Participants also spoke about the issue of eating separate meals in a family. This was not only tiring for meal preparers but also soured the relationships within the family itself. A participant shared the following comment during the interview.

Participants 6 *“my sister cannot afford to pay the important special food that I am currently eating. So the issue of having to eat special diet is a serious challenge to me, so time and again I am at the hospital because I have eaten the wrong foodstuff that is dialyzing more than I should be doing”*

In this study, five participants indicated they did not experience any challenges in their relationships within their family as a result of eating different meals. Diet was also discussed by Gerogianni et al.'s (2014:424) study on dialysis patients' concerns in Greece. They identified food and fluid restrictions as one of the major concerns among people undergoing haemodialysis. It is also important to note that non-adherence to food and fluid restrictions may result in patients having to attend the dialysis centre due to the adverse effects thereof.

Participant 1 *“Sometimes I am here at the Centre, not specifically for dialysing, but for challenges of not eating well (too much potassium, bananas oranges potatoes) otherwise I am coping”*

This reflects that violations of fluid and food restrictions can result in the patient having to visit the hospital to attend to complications caused by non-dietary adherence. It is therefore important for patients to know that compliance with food and fluid restrictions is a prerequisite in their treatment for CKD.

4.5.7 Theme 7: Impact of time-related challenges on socioeconomic activities

All the participants were concerned about the time they spent in treatment. They indicated that the process is just too long and interrupts their daily schedules. This impacts negatively on both their social and economic life by restricting their free time. The foregoing assertion was supported by Finnegan-John and Thomas (2013:5) in their needs assessment study, conducted on haemodialysis registered patients in a leading hospital in London to determine their psychological, social and spiritual needs. The following reactions were shared by participants in this study when probed further on the issue of time spent in haemodialysis treatment:

Participant 3 *“To me this is really torturous, one is always on the road either from hospital or going home. My life dreams and ambitions have been shattered, every time I have a dream I have to also think about whether I will be able to fulfil it due to my treatment. I cannot engage in any meaningful projects because of time committed to treatment”*

Participant 4 *“However life has not been easy since I started this procedure, because of limited available time, I spend a lot of time in one project, so I cannot generate enough income. I had to quit my job of electricity installation because I was finding it cumbersome to cope with work demands so I opted to rather do the piece jobs”*

Participant 9 *“There is usually not enough time to engage in any meaningful economic activity, in fact this moving around has rendered me to a destitute”*

Participant 3 *“I cannot engage in any meaningful projects because of time committed to treatment”*

As stated, the challenges participants raised in this study regarding the unavailability of free time was also mentioned as concerns in Finnegan-John and Thomas' (2013:5) study on the psychosocial experiences of patients with ESRD and its impact on their quality of life. In their study, participants emphasised that the time spent on dialysis was among the five highest-rated stressors for them. Patients spend almost 12 hours

a week in dialysis, since they are dialysed three times a week, which is time-consuming and can affect other daily chores, including work.

4.5.8 Theme 8: Economic impact

In this study, most participants indicated that haemodialysis treatment hindered their effective economic participation in terms of continuous engagement at work or related activities. This was mainly because the patients frequently required haemodialysis treatment. In addition, where the participants were engaged in any economic activity, their performance was typically minimal due to continued fatigue. It is important to note that some of the participants in this study had to resign from their jobs because they could not cope with adequately allocating time between work and treatment.

Participant 1 *“I also lost my family house because I could not service the mortgage as before. I am however ready to quit my job should I have assistance to start some business, I am really worried I cannot do things the way I used to do them because I am always here”*

Participant 6 *“I am currently not engaged in any economic activity, I was a cleaner and has since voluntarily stopped working because of my sickness and the dialysis I am undergoing. Working has now become a challenge because I easily get tired”*

Participant 8 *“One other issue related to work is that sometimes in fact frequently I go on leave and I am really worried that when I go back I might find someone else engaged to replace me. I am also worried that I do not discharge my duties as expected”*

Participant 1 *“I am however ready to quit my job should I have assistance to start some business, I am really worried I cannot do things the way I used to do them because I am always here”*

Participant 4 *“The process of dialyzing is really painful this is because its completion comes up with very tiring side effects that one end up not able to carry out anything, but just to sleep. This tiredness extend to work and one is always dozing at work”*

These reflections by some participants in this study indicated that haemodialysis had a severely negative impact on their economic opportunities. The majority of the participants (6/10) were not engaged in any economically empowering activity, including anything work-related. This is consistent with Walker, Howard, Tong, Palmer, Marshall and Morton's (2016:638) findings from their study, conducted at three hospitals in New Zealand. They explored how patients' and caregivers' finances impacted and influenced their decisions regarding which type of modality to choose for treatment. In that study, it was determined that it was cumbersome for patients on haemodialysis to maintain employment.

4.5.9 Theme 9: Altered responsibility and relationship with family and at the community level

The majority of the participants (6/10), especially the male participants, indicated they had lost their responsibilities, roles and community status due to haemodialysis. They mentioned family and community as two areas in which they had rapidly lost their responsibility. At the family level, participants indicated their highly esteemed position as head of the family was being challenged due to their frequent absences from the homestead, and as a result, they contributed less to family matters. On the contrary, their female counterparts were the ones making critical decisions for the family, thereby relegating them to lesser responsibilities. This was attributed to their inability to provide for their family, since they were not engaged in any gainful employment. The other critical factor highlighted by 90% of the participants was lowered interest in sexual relationships, resulting in partners complaining as they felt they were failing to maintain the prerequisite needs of the relationship. Some relationships ended in divorce.

Participants also mentioned that their responsibility as actors in community activities had been severely affected. They could no longer participate in decision-making processes for the development of their communities.

Participant 1 *“my wife left me simply because I cannot fulfil my conjugal rights as before as she was still sexually active. So there is nobody taking care of me, now the young boys have resumed this responsibility of caring for me at an earlier age when*

they are supposed to be minding about their childhood chores and responsibilities. Partners frequently leave me because I am an absent lover, because after dialyzing for 3 to 4 hours I feel so tired and cannot fulfil sexual demands of partners”

Participant 5 *“I also could not fulfil the requirements, expectation and demand for conjugal rights, so my wife found another partner. I never even wanted to debate against the divorce because the discussions were going to expose my weakness as a man, that is, failure to engage in sexual activity. In our society a man who does not engage sexual is despised so I rather chose to stay alone with my children. From there I never had any relationship whatsoever”*

Participant 1 *“my relationship with the community has significantly deteriorated, I cannot partake actively on community chores or engagements. Friends have also deserted me, and those who come to see me, worsen my situation, because they talk more about my precarious situation instead of encouraging me”*

Participant 3 *“I think I have lost my responsibility as a community participant because even if I have time to participate in communal activities, people always want me to be exempted because they think this will worsen my condition. Some just think I am not an active community member and never at all even invite me to community activities”*

The assertion that patients on haemodialysis have challenges with sexual dysfunction was supported by Saglimbene, Natale, Palmer, Scardapane, Craig and Ruospo's (2017:6) cross-sectional study on the prevalence and correlation between low sexual functioning among women and haemodialysis in Europe (France, Hungary, Italy, Poland), South America (Argentina) and the USA. It was found that of their 1309 respondents, only 232 (35%) reported being sexually active. The majority of their respondents reported either no sexual activity at all or low sexual functioning in all measured domains (orgasm 75.1%; arousal 64.0%; lubrication 63.3%; pain 60.7%; satisfaction 60.1%; sexual desire 58.0%) (Saglimbene et al. 2017:5).

4.5.10 Theme 10: Decentralised services, improved availability and accessibility to haemodialysis machines and skilled professionals

In responding to the question on how they could best be assisted as patients on haemodialysis, all the participants mentioned several factors that could effectively address their challenges. All the participants mentioned that the haemodialysis services should be decentralised. They felt the treatment should be provided in all districts to alleviate their challenges of having to travel frequently to the central district, which was the only facility providing such services in the southern part of the country at the time of data collection. The following are some of the reflections by the participants:

Participant 8 *“Services should be decentralised this will help us within our locality and reduce our cost for transport”*

Participant 5 *“There should be machines for dialysis at strategic places in clinics, how do I travel all the way to from ... to Gaborone for a medical procedure that could either be done in Ghanzi or Jwaneng that is closer to me”*

Participant 3 *“Improve decentralisation of these service where the service could be given in almost all the clinics so that we do not travel far to get the service”*

Participant 8 *“I would prefer that these services be at least brought to Lobatse in the meantime while the country is planning for a broader decentralisation intervention. I would prefer that these services be at least brought to Lobatse in the meantime while the country is planning for a broader decentralisation intervention”*

Participant 9 *“if decentralisation does not take place soon, then it is important to increase the machines at the centres so that we do not wait long for others to complete before we can start”*

Participant 7 *“There should be machines for dialysis at strategic places in clinics.... That is closer to me”*

Participant 10 *“I also do think that it would be best to increase dialysis clinics in the country to crowding and long waiting”*

Availability, accessibility and affordability are vital in providing health services. However, participants’ responses indicate there were no available services for haemodialysis in their areas of residence. Panda and Thakur (2016:20) studied decentralisation and health system performance through a focused review of dimensions, difficulties, and derivatives in India. They similarly found a relationship between decentralisation and improved health performance.

The participants also mentioned that the current haemodialysis centre should have more machines to cope with the high numbers of patients requiring treatment. This undertaking will also drastically reduce the waiting time, which is a major concern to them.

In support of the availability of machines in haemodialysis clinics, Bello (2014:3) conducted a study to identify the barriers to achieving sustainable dialysis programmes in Nigeria. That study found that many of the haemodialysis units were equipped with old machines without spare parts, and there was a shortage of technical know-how to respond positively and urgently when such machines break down.

Participant 4 *“at the centre machines should be increased so that we do not have to wait long before we can go into the machines”*

Participant 1 *“I think it is critical that if decentralisation does not take place soon, then it is important to increase the machines at the centres so that we do not wait long for others to complete before we can start”*

Participants’ claims of the lack of machines being a challenge, and the need to increase their availability for effective treatment, is also supported by Flood, Wilcox, Ferro, Montano, Barnoya, Garcia, Lou-Meda, Rohloff and Chary (2020:3). These authors explored the challenges in the provision of kidney care at the largest public nephrology centre in Guatemala. In that study, participants claimed there were not enough machines for all patients.

Moreover, seven participants said that professionals' – such as doctors and nurses – increased training in this area should be a priority. They felt this will enable the health system to not only identify CKD at its early stages but also intervene promptly by reducing the time to treat the ailment.

Participant 10 *“Training for doctors, nurses is a need to be urgently fulfilled since there are fewer people trained in this area”*

Participant 5 *“We need more doctors and nurses”*

Participant 1 *“at least one or two doctors should be trained in the management of the condition in a district”*

Participant 7 *“counselling services are critical for a dialysing patient so it is important to train more counsellors”*

The assertion that priority should be afforded to training professionals to facilitate effective treatment is supported by Flood et al.'s (2020:5) study, conducted at the largest public nephrology centre in Guatemala. In that qualitative enquiry, a physician indicated that he saw 50 patients a day and did not have enough time to build the desired relationships with his patients.

4.5.11 Theme 11: Alternative treatments

Along with the suggestion of decentralisation, half of the participants suggested it is important to consider other forms of treatment than haemodialysis. Most mentioned that kidney transplants should be considered, as this will reduce their travel requirements to the haemodialysis centres.

Participant 1 *“I do think the best option to this issue is kidney transplant, this will minimise all sufferings that I face together with my contemporaries. I also do think that it would be best to increase dialysis clinics in the country to minimise crowding and long waiting”*

Participant 3 *“Kidney transplant will stop all these sufferings”*

Participant 6 *“in some countries this type of dialysis is being replaced by kidney transplant and this could be also be done here”*

Participant 2 *“There need to be continued research to establish if there are other options to substitute haemodialysis, there need to be continued research to establish if there are other options to substitute haemodialysis”*

Participant 3 *“We need more research to come up with new ideas to address this problem than dialyzing, kidney transplant is an option worth trying. We need more research to come up with new ideas to address this problem than dialyzing, kidney transplant is an option worth trying”*

This finding was also explicitly supported by Thorsteinsdottir et al. (2012:515), at the Mayo Clinic, Rochester, in their research on alternatives to haemodialysis for elderly patients with ESRF. They emphasised that patients undergoing haemodialysis would immediately opt for new inventions should any be available.

4.5.12 Theme 12: Psychosocial services

All the participants indicated counselling was an essential component of haemodialysis treatment. Therefore, it is critical that counselling is provided frequently as patients undergoing this treatment are frequently emotionally affected and need psychosocial services.

Eight of the 10 participants also claimed that it is of paramount importance to improve the dialysis centre by establishing a patient residence, especially for those who travel from far away. Alternative accommodation would help them in case they complete their treatment late. Participant's also said that the chairs provided at the centre should be comfortable, especially since some patients wait for a long time before receiving treatment.

The following were some of the comments made by participants regarding psychosocial services' availability:

Participant 5 *"Psychosocial services should be provided throughout as on daily bases emotions are down and one needs counselling. In my case it is cumbersome to appoint with social workers for counselling since I arrive late at home and leave early for my treatment so this service should rather be provided at the centre. So the only person available for my social-emotional upliftment is my sister"*

Participant 7 *"I really have been looking for someone to talk to about our treatment here. Nobody wants to talk to us there are really plenty of issues I would like to raise. First and foremost you are diagnosed with this terminal condition put on treatment that is dialysis"*

Participant 1 *"counselling services are critical for a dialysing patient so it is important to train more counsellors"*

Participant 4 *"it is also important that some accommodation is provided especially for those patients who by any chance leave the Renal Care Unit very late"*

Participant 3 *"... there is continuous need of counselling which is not availed and as such the family becomes there is continuous need of counselling ..."*

4.5.13 Theme 13: Social safety nets

About half of the participants suggested that since they are not engaged in any economic activity, while at the same time adhering to a special diet, they should be enrolled for some form of social safety net. They felt this would facilitate the provision of appropriate food so they can avoid dietary complications associated with haemodialysis.

Participant 7 *"Some form of social safety net would work for patients, it is important, even if it means establishing a fund to assist patients"*

Participation 10 *“to negotiate with family members for money to attend the sessions. I to negotiate with family members for money to attend the sessions”*

Participation 9 *“There is usually not enough time to engage in any meaningful economic activity, in fact this moving around has rendered me a destitute”*

Participant 2 *“because of time spent on dialysing I cannot explore the world opportunities to bring food to the table I really need help in this regard food ration”*

Himmelfarb et al. (2020:1), who studied the current and future landscape of dialysis, agree with the findings in this study that most patients undergoing haemodialysis experience many challenges. Chief among them is unemployment, leading to a lack of resources to provide for their special dietary requirements. This conclusion indicates that social safety nets are required for patients on haemodialysis, especially in the developing world.

4.6 CONCLUSION

This chapter presented the study’s findings and the themes that emerged from the collected data. Data analysis was also discussed according to the selected themes. Furthermore, participants’ reflections were used to support the findings, based on the proposed themes. In addition, literature was presented in support of the themes from various researchers in the field of study. It should be noted that participants mentioned the best to support them socioeconomically when attending haemodialysis, thus covering one of the study objectives. This guided the researcher in suggesting recommendations, as discussed in the next chapter.

CHAPTER 5

DISCUSSION CONCLUSIONS LIMITATION AND RECOMMENDATIONS

5.1 INTRODUCTION

In Chapter 4, the researcher analysed the data and discussed the findings. In this chapter, the researcher discusses the findings and proposes recommendations to address some of the challenges participants' experienced.

The study on participants' socioeconomic life experiences while attending haemodialysis in Botswana was conducted at one of the public healthcare facilities with a haemodialysis clinic in Gaborone. The following objectives of the study were achieved:

- to identify and describe the socioeconomic effect haemodialysis has on patients;
- to explore the impact of haemodialysis on the socioeconomic lives of patients attending haemodialysis; and
- to determine the best way to support patients attending haemodialysis socioeconomically.

This study used a qualitative, explorative, descriptive and contextual research design based on phenomenological guidance. The study was aimed at answering the grand tour question, *“What are the socioeconomic life experiences of patients undergoing haemodialysis at a public healthcare facility in a developing country, Botswana?”* A sample of 10 participants was interviewed. All participants were older than 18 years and had been on haemodialysis treatment in one of the public healthcare facilities in Gaborone for over two years.

5.2 SUMMARY OF THE FINDINGS

A summary of the research findings follows.

5.2.1 Appreciation for haemodialysis treatment

All the participants said that regardless of the side effects they experienced during the treatment, haemodialysis is essential for patients with ESRD, and it has positively impacted their lives. Participants appreciated the treatment, and they all believed that had it not been for this treatment, they would have lost their lives. The final observation the researcher made from the data was that, despite the daily hassles they encountered during treatment, patients on haemodialysis appreciated the treatment. They claimed it had given them hope, hence their continued commitment to the treatment. The stance that haemodialysis improves patients' quality of life was supported by Himmelfarb et al.'s (2020:575) study on the current and future landscape of dialysis. They further reported an increase of up to 96% availability of haemodialysis centres worldwide, illustrating its importance.

Patients' appreciation for haemodialysis treatment was also mentioned by Shahgholian and Yousefi (2018:1), in their study on the lived experiences of patients undergoing haemodialysis in Iran. In that study, they mentioned that haemodialysis increased the life expectancy of patients living with CKD, thereby effectively improving their health outcomes. Furthermore, in support of the notion that patients appreciate haemodialysis treatment, Rhonda (2015:236) explored the experiences of home dialysis users in New Zealand, and reported similar findings; all participants interviewed in that study mentioned that, in the absence of kidney transplant, haemodialysis was better than not dialysing at all.

In yet another international cross-sectional survey conducted in European and South American countries, to determine satisfaction with care among patients on haemodialysis, Palmer, De Berardis, Craig, Tong, Tonelli, Pellegrini, Ruospo, Jörgen Hegbrant, Wollheim, Celia, Gelfman, Ferrari, Török, Murgó, Leal, Bednarek-Skublewska Dulawa and Giovanni (2014:3) reported three-quarters of their participants rated their overall haemodialysis care to be between 76.8% and 80%. This affirmed their satisfaction with the care they received from the haemodialysis treatment modality.

In addition, Joshi (2014:309) also supported the assertion that haemodialysis treatment is helpful to patients. This was reported in a study conducted in India, at the Patel Children's Hospital, where participants highlighted that with improved medication, medical treatment, medical care, and health technology patients are living longer – this claim was in reference to haemodialysis.

Furthermore, Hall, Cary, Washington and Colon-Emeric (2020:659) studied the quality of life of older adults receiving haemodialysis in the USA. They similarly found that patients appreciate haemodialysis as the participants in their study viewed haemodialysis as “keeping them alive”.

It is also imperative to note that the findings in this study were consistent with those from a study conducted in one of the haemodialysis units in Thailand, on men and women with ESRD on haemodialysis (Chiaranai, 2016:101). Those participants described the importance of haemodialysis treatment for their survival as follows:

“Although HD (haemodialysis) treatment isolated us from others, the treatment is too important to ignore”.

“Ever since I became attached to this machine and have to come here every other day ... I cannot miss my treatment schedule.”

Therefore, it is evident that patients on haemodialysis who do not have access to any other treatment modality appreciate the treatment. This view is supported by Hall et al.'s (2020:659) study, conducted with older African American women receiving haemodialysis. Their participants claimed it was “keeping them alive”, and they communicated that the most important thing to them was “staying alive” (Hall et al. 2020:659).

Mukakarangwa, Nkurunziza, Ngendahayo and Bhengu (2020:3), in their study on motivators and barriers to adherence to haemodialysis among patients with ESRD in Rwanda, reported the same findings. Their participants acknowledged they would maintain their haemodialysis treatment because they did not want to die. One

participant indicated that: “It is because haemodialysis helps me, it replaces my kidneys that are not working, if I don’t respect the schedule there are consequences including death” (Mukakarangwa et al. 2020:3).

5.2.2 Physical factors

Although haemodialysis positively transformed the lives of those on treatment, participants still experienced several challenging health and social outcomes, especially after undergoing dialysis. In this study, all the participants mentioned that besides the pain they experienced with the actual dialysis procedure, they usually experienced immense and continuous fatigue. This resulted in them being inactive, including in economic endeavours (Finnegan-John & Thomas 2013:23). Fatigue, and its serious negative impact on patients on haemodialysis, is also supported by Maniam et al. (2014:476). Their findings indicated that the main factors contributing to poor quality of life among patients on long-term haemodialysis were fatigue and excessive sleep.

The assertion that fatigue and tiredness have a serious impact on patients is also emphasised by Salehi, Dehghan, Shahrabaki Parvin and Ebadzadeh (2020:2); they explored the effectiveness of exercise on fatigue among haemodialysis patients in Iran. In that study, the fatigue score for those in the control group (the haemodialysis group that did not engage in any form of therapy through exercise) increased from 64.53 ± 16.32 at the start of their survey, to 70.34 ± 7.69 after one month.

Similar findings were discovered in a study with patients on dialysis in Greece by Gerogianni et al. (2014:424). In their study, physical fatigue was identified as a stressor among patients. Furthermore, Kodama, Togari, Konno, Tsuji, Fujinoki, Kuwabara and Inoue (2020:1) identified similar findings in their study; they explored a new assessment scale for post-dialysis fatigue among haemodialysis patients in Japan. Their findings show that fatigue after dialysis was among the primary stressors on a five-point Likert scale.

The fatigue reported among patients on haemodialysis were consistent with Maniam et al. (2014:476) findings. In their study, while a significant improvement was noticed

among patients in the manipulated group, fatigue was high among the control group. Kodama et al. (2020:1) were also in agreement. According to the findings of their study, the majority of participants reportedly experienced fatigue and malaise after haemodialysis treatment.

Finally, Chiaranai's (2016) study in Thailand, to gain a better understanding of the lived experiences of patients with ESRD who were on haemodialysis at one of the country's hospitals, reported patients experienced an array of signs and symptoms related to fatigue. These included decreased energy, lack of strength, drained energy, tiredness, lack of concentration, and fatigue. These were some of the issues that caused their weakness in activity participation (Chiaranai 2016:103).

5.2.3 Psychosocial factors

From the findings of this study, all 10 interviewed participants experienced divergent psychosocial issues. These challenges ranged from frustration, anger, hopelessness, stress, loneliness, loss of a sense of belonging and lack of support. These psychosocial challenges caused some inconvenience in the day-to-day lives of patients undergoing HD. They reportedly felt emotionally affected, resulting in low participation in almost all spheres of life. The findings of this study are supported by Bale, Douglas, Jegatheesan, Pham, Huynh, Mulay and Ranganathan (2016:1), who explored psychosocial factors among ESRD patients at a tertiary hospital in Australia. According to that study, 61.1% of the 244 patients undergoing haemodialysis reported having visited social workers immediately after starting haemodialysis treatment. This illustrates that patients receiving this treatment are susceptible to or experience psychosocial challenges (Bale et al. 2016:1).

The following comments were made by the participants in this study relating to psychosocial factors:

Participant 2 *“My stress coping mechanism is very low especially when I am desperately in need of counselling it is not readily available ...”*

Gerogianni et al. (2014:424) conducted research on 100 patients' concerns with dialysis in four hospitals in Athens, Greece. They concluded that people undergoing haemodialysis experience significant psychological challenges like depression and low participation in economic activities, often resulting in isolation.

5.2.4 Fear of death

The majority of participants (7/10 in this study) mentioned the fear of death as a concern in their lives; to the extent that there was very little they could do for themselves except to isolate or seek solace from those who understand their challenges. The seven participants mentioned concerns about their bleak future, since they could not execute any of their plans because of their fear of death. It has been reported that fear of death is common among the terminally ill, including those with CKD. This assertion is supported by Mithrason, Parasuraman, Harihara and Varadarajan (2018:4), in their study on psychosocial problems and needs among patients in a palliative care centre in Jeevodaya Hospice Care Centre, Chennai, India. They claimed one of the most common among patients' fears was the fear of death (Mithrason et al. 2018:4).

In this study, participants shared:

Participant 2 *"Sometimes I feel so angry that it would be better if I was not living"*

Chiaranai's (2016:104) study on the lived experience of patients receiving haemodialysis treatment for ESRD in Thailand also found patients were in constant fear of death. In that study, participants extensively highlighted that they remain uncertain about their future as they continue to receive treatment. The following were some of the reflections they shared to demonstrate their fear of death (Chiaranai 2016:107):

"I do not know when I will die"

"I only wish for a better life in the new world" "I wish the doctor told me I could get my transplant today"

“I don’t know about tomorrow”.

“Every time I come here, I pray to Buddha to please let me live for another day”.

The fear of death among haemodialysis patients is also mentioned in Mukakarangwa et al. (2020:4) study on the motivators and barriers to adherence to haemodialysis among patients with ESRD in Rwanda. According to that study, participants mentioned that they had to respect doctors’ instructions to avoid death. This illustrates that patients on haemodialysis are frequently preoccupied with death and thus continue to adhere to treatment.

5.2.5 Distance and transport challenges in reaching the haemodialysis centre

This study revealed that transport was one of the major challenges for patients on haemodialysis, irrespective of their proximity to the haemodialysis centre. The majority (6/10) of the participants were not engaged in any gainful employment and therefore experienced challenges in paying for their transport. Those who had their own transport reported challenges with fuel as their main concern. Since the centre for dialysis is in Gaborone, participants found it cumbersome to go to the centre, especially three times a week. The following are some of the comments made by participants on the issue of transport:

Participant 9 *“The challenges that I am faced with are many the first I really need to mention is transport I stay around 140 kilometres from the Renal Care Centre so I travel a distance of 280 kilometres three times a week. The social workers assist me with money for transport they usually engage a single bus if by any chance this bus leaves me I cannot attend the clinic”*

The concerns with transport participants mentioned – in relation to their attendance of haemodialysis sessions – have also been reported by Yazawa et al. (2020:641). They explored the effects of transportation to dialysis facilities and the health-related quality of life among haemodialysis patients in Japan. According to their study, transport to dialysis centres, though a prerequisite, is often unaffordable; there were instances

where patients were unable to pay for their transport, resulting in their failure to adequately attend their treatment sessions, thereby worsening their condition.

Transport challenges among people undergoing haemodialysis are further supported by Chan et al. (2014:2644), who researched haemodialysis outpatients in Fresenius Medical Care North America clinics. They reported that a lack of reliable public transportation was a serious issue, sometimes resulting in patients missing treatment sessions.

Mukakangwa et al. (2020:4) also determined that transport impacted treatment adherence among patients on haemodialysis. According to their study, five out of their seven participants mentioned transport as a serious challenge to their weekly treatment, thereby supporting the findings from this study. It is, however, important to acknowledge that participants in this study never mentioned missing treatment sessions due to transport challenges.

Moreover, to improve and maintain the quality of life of patients undergoing haemodialysis, it is essential for them to travel to the dialysis centre and receive treatment at least three times a week. Six out of the 10 participants in this study mentioned this as a significant challenge in their lives since they had to travel from faraway places to receive their dialysis treatment in Gaborone. For them, this was worrisome because they did not have time to rest because they were always on the road. In addition, it is often the distance they become preoccupied with more than their deteriorating health status. Some participants mentioned that they have only one option – to move closer to the treatment centre, thereby unwillingly moving away from their support structure and family.

Participant 5 *“I rarely visit my three children who are currently staying in ... with my grandmother because I am now a Gaborone resident due to dialysing and of course lack of enough money to visit them and at the same time sufficiently honouring dialysis appointments”*

Participants’ reflections on the distance to haemodialysis centres were also supported by Chan et al. (2014:2643), investigating the potential reasons behind missed dialysis

sessions in the USA over a period of five years. Their findings revealed that the distance between patients' homes and the dialysis centre was identified as the reason for poor adherence.

However, it was noted that although the distance to the treatment facility was a concerning issue for the participants in this study, none of them related it to any treatment complications or lack of adherence. The majority of the participants (7/10) only mentioned distance as a contributory factor to their persistent fatigue and the cost of transport associated with treatment.

It is critical to note that proximity to a health facility is important for all forms of treatment for chronically ill patients; residing far from a health facility may make it cumbersome to effectively honour treatment sessions. In this study, patients travelling long distances mentioned they were constantly travelling, resulting in reduced participation in other spheres of life.

Stephens, Brotherton, Dunning, Emerson, Gilbertson, Harrison, Kochevar, McClellan and Wan (2013:345) studied the geographic disparities in travelling to attend dialysis facilities in the USA. According to them, the burden of accessing treatment and care became challenging for patients as they frequent the centre for haemodialysis three times every week. Sanyang, Mamina and Sambou (2019:116) also conducted research in Gambia, in the Edward Francis Small Teaching Hospital to determine how best to continue with haemodialysis treatment. The findings of that study explicitly revealed that centres for most haemodialysis clinics are in cities, and patients therefore have to travel vast distances to access the treatment. This results in patients incurring high financial costs.

Distance from the haemodialysis centre, as highlighted by the participants in this study, influences health outcomes. In some instances, this led to participants' migration – sometimes together with their families – from their villages to cities. These findings are supported by Bello (2014:3), who conducted research in Nigeria to identify the barriers to achieving sustainable dialysis programmes in sub-Saharan Africa.

Haemodialysis accessibility was also mentioned in a study on the challenges and outcomes of haemodialysis among patients presenting with kidney diseases in Dodoma, Tanzania. In that study, 37/116 (44.1%) of patients absconded or were lost to follow-up as most resided outside Dodoma (Meremo et al. 2017:5).

5.2.6 Dietary restrictions

It became evident from the in-depth interviews that successful response to haemodialysis treatment is also dependent on patients' adherence to dietary restrictions. Patients on this treatment modality should avoid some foods to minimise their risks of complications. Therefore, it is important that patients adhere to the stipulated food restrictions.

All the participants in this study mentioned they were not working and therefore could not cope with special dietary restrictions, because they lacked the resources to buy the appropriate food. As a result, they had to rely on meals being provided by those taking care of them, sometimes causing strain in relationships. However, some participants indicated that they did not experience any challenges in their relationships within their family as a result of eating separate meals.

Gerogianni et al. (2014:424) identified food and fluid restrictions as one of the major concerns among people undergoing haemodialysis. Therefore, it is important to note that non-adherence to food and fluid restrictions may result in the patient frequenting the dialysis centre, sometimes unnecessarily. In addition, in Chiaranai's (2016:103) study with dialysis patients in Thailand, to better understand their challenges, the author claimed patients mentioned fluid and dietary restrictions were the most stressful restrictions as they created social limitations.

Moreover, Spies, van den Berg and Nel (2020:4) explored the knowledge, attitude and practices of patients receiving maintenance haemodialysis in Bloemfontein, South Africa, in five of the six dialysis units; 175 patients were receiving haemodialysis from these units. Most of their participants (61.4%) reported poor overall adherence to the renal diet.

Patients could also experience dietary complications due to financial constraints preventing them from financing the special diet they have been prescribed. This is emphasised by Chironda and Bhengu's (2019:119) study on the barriers to the management of CKD in a renal clinic in KwaZulu-Natal, South Africa. According to the findings of that study, participants mentioned that they could not afford the renal diet since it was too expensive for them.

5.2.7 Impact of time-related challenges on socioeconomic activities

All the participants in this study were concerned about the time they spend during the administration of their treatment. They indicated that treatment is time-consuming and interrupts their daily schedules, thereby negatively affecting their social and economic life by restricting their free time. As a result, they had limited time to engage in economic activities to improve their quality of life.

Participant 4 *"The process of dialyzing is really painful this is because its completion comes up with very tiring side effects that one end up not able to carry out anything, but just to sleep. This tiredness extend to work and one is always dozing at work"*

The issue mentioned by participants regarding the effect of time on haemodialysis patients has also been reported by Gerogianni et al. (2014:425). The findings of their study emphasised the fact that time spent on dialysis machines was among the five highest-rated stressors for participants, who spent almost 12 hours a week being dialysed. This is a significant amount of time that can affect other daily activities, including work.

Rhonda (2015:236) also highlighted time as a concern in a study conducted in New Zealand on the experience of machine-body home dialysis users, which reflected that participants agreed dialysis took most of their time. One of the (Rhonda 2015:235) participants (F5) elaborated by saying that:

"You can't keep going into HD (haemodialysis) every two days: how long can you do that for? You kind of need some kind of life back... By the time I get there, have a whole day of my blood change, then get home, I will be out of my

house for eight hours every second day. I can't live like that, I've got life to get on with, I've got a business to run and I've got things to do, I can't be doing that".

5.2.8 Economic impact

This study's findings reflected that haemodialysis treatment hinders effective economic participation among those dependent on it as a replacement for kidney functioning. Once a patient has enrolled for dialysis, they have to abide by the ever-demanding treatment requirements, which significantly limits their time in performing other activities of life, including engaging in economic tasks. Furthermore, it is paramount to comprehend that where a patient on haemodialysis is engaged in any economic activity, including work, their performance is usually minimal, mainly due to the constant fatigue experienced by the patient. Some of the participants in this study who were enrolled in treatment while simultaneously working could not effectively balance their time between the two and, as a result, they opted to resign from their jobs. This affected their lives significantly as they could no longer generate any income for themselves or their families.

The assertion by the participants in this study concurred with Chironda, Manwere, Nyamakura, Chipfuwa and Bhengu's (2014:120) findings on perceived health status and adherence to haemodialysis among ESRD patients in Zimbabwe. The results of their study indicated that 75.3% of participants had work-related problems, thereby supporting the stance that most patients on haemodialysis experience work-related challenges.

In addition, Tannor, Archer, Kapembwa, Van Schalkwyk and Davids (2017:6) also reported similar findings in their comparative mixed-methods study on patients' quality of life while receiving chronic dialysis in South Africa. In that study, haemodialysis patients highlighted that they experienced work-related challenges due to the frequent need for hospital-based treatment sessions, typically three times a week.

Furthermore, Walker et al. (2016:638), in their study in three hospitals in New Zealand regarding patients' and caregivers' economy and their decision on which type of

treatment modality to choose, found that it was difficult for some participants to maintain employment. Some participants alluded that their dialysis sessions severely impaired their ability to remain at or return to work.

5.2.9 Altered responsibility and relationship with family and at the community level

In this study, the majority of the participants, especially the men, mentioned that they had lost their sense of responsibility, familial roles and status due to their haemodialysis treatment. Participants said their esteemed role in the family and community was being eroded, and their counterparts (women) were assuming their roles. This is mainly because of their frequent absence from the family. When probed further on the loss of their position as head of the family, the male participants attributed this to their inability to provide for their family; as mentioned, in most cases, haemodialysis inhibited them from active participation in any economic activity.

Participant 1 *“Prior to the divorce, I could see that I was losing my responsibility as head of the family because majority of the time I was not in to make the frequently and desperately needed family decision it was rather my wife”*

This study concurs with Tannor et al.’s (2017:5) findings on the quality of life of patients on chronic dialysis in South Africa, at the Tygerberg Hospital in Cape Town. The findings of that study revealed participants often failed to travel from the dialysis settings to visit their family and attend key events such as funerals. These findings indicated that patients thought they were negligent of their community responsibilities towards their kinsmen. This affirms the participants in this study’s reflections that their responsibility as actors in communal activities had been severely affected. They could no longer participate in decision-making processes for the development of their communities.

Furthermore, the other critical factor highlighted by 90% of the participants was lowered interest in sexual relations, resulting in unstable relationships since their partners felt they were failing to fulfil their conjugal obligations.

Participant 1 *“My wife left me simply because I can no more fulfil my conjugal rights as before as she was still sexually active, so there is nobody taking care of me, now the young boys have resumed this responsibility of caring for me at an earlier age when they are supposed to be minding about their childhood chores and responsibilities”*

Loss of interest in sexual activity among patients on haemodialysis is also mentioned by Mor, Sevick, Shields, Green, Palevsky, Fine and Weisbord (2014:131), in their study on sexual function, activity, and satisfaction among women receiving maintenance haemodialysis in the USA. According to their findings, 80% of the women interviewed indicated they were no longer interested in any sexual engagement due to their continued haemodialysis treatment.

The sexual challenges related to haemodialysis that some participants in this study highlighted, was similarly reported in Saudi Arabia, where a study was conducted to explore sexual dysfunction among haemodialysis patients – among 30 female patients. The study’s findings revealed that 80% (24/30) of the women interviewed had sexual dysfunction, and the highest numbers for this condition were reported among older participants (Gorsane, Amri, Younsi, Helal & Kheder 2016:24).

In yet another study on erectile dysfunction and its impact on the quality of life of Japanese men on haemodialysis, conducted in Japan (Sumii, Miyake, Yoshiya, Enatsu, Matsushita, Hara & Fujisawa 2016:14), it was reported that of the 65 men who took part in the study, 72.3% (47/65) experienced erectile dysfunction as a serious challenge.

5.2.10 Decentralised services, improved availability and accessibility to haemodialysis machines and skilled professionals

The findings of this study indicated that services for haemodialysis patients, although they are affordable, are not easily accessible since they are only available in cities. All the patients felt that the service should be decentralised to districts. This is mainly to reduce the burden of having to travel frequently to the centre of Botswana, or waiting for long periods to receive treatment.

The participants were of the view that, since decentralisation might take a long time to be established, it is imperative to resort to other modalities of treatment, especially kidney transplantation. This will not only eliminate their time spent at the centre but also reduce their travel time to and from the centre. It is also critical to increase the machines at haemodialysis centres to cope with the high numbers of patients requiring treatment. Additional machines are expected to drastically reduce patients' waiting time, which is a major concern for patients undergoing haemodialysis.

The need to increase the number of available machines to ensure better services is supported by Bello's (2014:3) research. In that study, it was mentioned that the inadequacy of infrastructure for haemodialysis is rife in most parts of sub-Saharan Africa.

To further reflect on the need to increase the availability of haemodialysis machines, Niang and Lemrabott (2020:538) conducted a study on global dialysis perspectives in Senegal. Their findings highlighted an acute shortage of renal replacement equipment, resulting in inaccessible haemodialysis services, illustrating the urgent need to make such equipment available.

The participants in this study also indicated that adequate numbers of trained professionals (doctors and nurses) are required to provide haemodialysis treatment. An increase in the number of available trained professionals will enable the health system to not only identify CKD at early stages, but also intervene promptly, thereby promoting the prompt inception of treatment.

Arogundade, Barsoum and Khalil (2015:507), who researched 50 years of dialysis in Africa, highlighted an acute shortage of nephrologists, dialysis nurses, and technicians in Africa. Therefore, there is a need to train these specific cadres to adequately support patients on haemodialysis. Furthermore, Dada, Ajite, Ibitoba, Thomas, Dada and Deji-Dada (2019:056) conducted a study on haemodialysis challenges in south-west Nigeria. They arrived at a similar conclusion that fewer patients are receiving haemodialysis treatment than required because of a lack of trained health personnel. In addition, Sanyang and Sambou (2019:116), together with Bello (2014:4), also

supported this assertion of a shortage of professionals trained in haemodialysis treatment.

In yet another study by Halle et al. (2016:8) – on fatal outcomes among patients on maintenance haemodialysis in sub-Saharan Africa, reported from the Douala General Hospital in Cameroon – it was identified that there was a limited number of nephrologists in the country and there is an urgent need to train additional haemodialysis staff. A shortage of professional staff for ESRD is also supported by Moosa, Meyers, Gottlich and Naicker's (2016:156) study on effective approaches to CKD in South Africa. They reported that nurses are essential in all renal placement therapies, but they are in short supply, and there is an urgent need to promote their training.

5.2.11 Alternative treatments

Concerning decentralisation as a critical option to minimise haemodialysis patients' challenges, 50% of the participants suggested that it is now time to consider other treatment modalities. Most suggested that kidney transplants should be considered to reduce their travel requirements to the haemodialysis centres. The matter of participants identifying kidney transplants as an alternative treatment modality is supported by Meremo et al. (2017:5) study on the challenges and outcomes of haemodialysis among patients presenting with kidney diseases in Dodoma, Tanzania. That study recommended the establishment of kidney transplants within the country to provide more treatment options for patients on haemodialysis.

Furthermore, Mukakarangwa et al. (2020:4) also reported on the provision of renal transplantation as an option to effectively manage ESRD in their study, conducted in Rwanda. Chironda and Bhengu (2019:120) similarly proposed kidney transplantation as an appropriate modality to assist patients on dialysis.

The following comments were made by the participants in this study, related to alternative services to haemodialysis:

Participant 1 *“I do think the best option to this issue is kidney transplant, this will minimize all sufferings that I face together with my contemporaries”*

5.2.12 Psychosocial services

The findings reflected that continuous counselling is a prerequisite for patients receiving haemodialysis treatment. Therefore, counselling should be provided frequently as patients undergoing haemodialysis are often emotionally affected and in need of psychosocial services.

5.2.13 Social safety nets

The findings revealed that patients undergoing haemodialysis require some form of safety net to enable them to afford necessities like transport to treatment sessions and adhere to their special diet.

5.3 RECOMMENDATIONS

5.3.1 Recommendations for policymakers

5.3.1.1 National nephrology programme

It is important to establish a national nephrology programme to effectively address the issues related to CKD. Where there are limited resources to establish such a programme, it is essential to explicitly integrate intervention strategies targeting patients with already existing NCDs.

5.3.1.2 Training of nephrology professionals

To promote effective nephrology services, especially in the short term, personnel should receive frequent training to inform them of new developments in caring for patients and managing haemodialysis units.

5.3.1.3 Social safety net for the terminally ill

A comprehensive social safety net for the terminally ill should be considered. This will include patients on haemodialysis to enable them to afford necessities like transport and specific foods.

5.3.2 Recommendations to programme coordinators

5.3.2.1 Intensify research

Programme coordinators should intensify research in nephrology so that evident-based results, particularly for the Botswana situation, are discovered and operationalised for the benefit of the patients.

5.3.2.2 Establish outreach programmes

Outreach programmes should be established to complement already available efforts, mostly for patients from remote areas with insufficient haemodialysis services.

5.3.2.3 Continuous counselling

Patients undergoing haemodialysis often experience emotional distress due to psychological issues like frustration, anger, hopelessness, stress, loneliness, loss of a sense of belonging, and lack of support. Continuous counselling is thus required for patients receiving haemodialysis treatment and should be provided frequently.

5.3.2.4 Promote health education

In order to promote the uptake of treatment and further reduce the impact of kidney diseases, health education is vital, specifically for those with NCD like hypertension and diabetes, which are more associated with CKD.

5.4 CONTRIBUTION OF THE STUDY

The major aim of the study was to enlighten health policymakers on issues relating to patients receiving haemodialysis treatment to improve the service delivery system for these patients. The study was conducted to better inform the health fraternity on the priorities they need to establish or develop to intensify the country's ongoing haemodialysis programme.

5.5 LIMITATION OF THE STUDY

Considering that the researcher was both the primary instrument of data collection and simultaneously instrumental in the analysis of the data, the likelihood of bias – due to the human element – was high.

5.6 CONCLUDING REMARK

This study investigated the socioeconomic life experiences of patients receiving kidney haemodialysis in Botswana. The research was conducted at one of the public healthcare facilities with a haemodialysis clinic in Gaborone. The purpose of the study was to identify and describe the socioeconomic experiences of patients on haemodialysis, explore the impact of kidney haemodialysis on the socioeconomic lives of patients attending haemodialysis, and determine the best way to support the patients undergoing haemodialysis socioeconomically. The study's findings were obtained from interviews with patients who attended haemodialysis, based on their positive and negative experiences. Among these experiences were their appreciation for haemodialysis as a prerequisite treatment; physical factors related to their treatment; psychosocial factors; fear of death; challenges with the distance and transport to and from the haemodialysis centre; dietary restrictions; the impact of time-related challenges on socioeconomic activities; the economic impact of haemodialysis; participants' altered responsibility and relationship with family and at the community level.

It is important to note that participants recommended the following factors for effective programme delivery: the decentralisation of haemodialysis services, improved

availability and accessibility to haemodialysis machines and skilled professionals; alternative treatment to haemodialysis; the provision of intensive psychosocial support services; and the provision of social safety nets.

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ANNEXURE 1: University of South Africa Ethical clearance



RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES

REC-012714-039 (NHERC)

1 November 2017

Dear Mr Phinda Khame

Decision: Ethics Approval

HS HDC/735/2017

Mr Phinda Khame

Student: 50797204

Supervisor: Dr KA Maboe

Qualification: PhD

Joint Supervisor: -

Name: Mr Phinda Khame

Proposal The social-economic life experiences of patients on kidney haemodialysis in Botswana

Qualification: MPCH594

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 from 1 November 2017 to 1 November 2019.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on 2 August 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.*



University of South Africa
Pretorius Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

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 JE Maritz
CHAIRPERSON
maritje@unisa.ac.za



Prof MM Moleki
ACADEMIC CHAIRPERSON
molekmm@unisa.ac.za



Prof A Phillips
DEAN COLLEGE OF HUMAN SCIENCES

ANNEXURE 2: Approval from Ministry of Health and Wellness

PRIVATE BAG 0038
GABORONE
BOTSWANA
REFERENCE:



REPUBLIC OF BOTSWANA
MINISTRY OF HEALTH AND WELLNESS

TEL: (+267) 363 2500
FAX: (+267) 391 0647
TELEGRAMS: RABONGAKA
TELEX: 2818 CARE BD

REFERENCE NO: HPDME 13/18/1

6th June 2019

Health Research Development Committee

Principal Investigator: Mr Phinda Brauze Khame
Notification of IRB Review: **Continuing Review**

Protocol Title: **THE SOCIAL ECONOMIC EXPERIENCES OF PATIENTS ON KIDNEY HAEMODIALYSIS IN BOTSWANA**

Review Type: Health Research Unit/Expedited
Review Date: 05 June 2019
Approved Date: 05 June 2019
Effective Date: 06 June 2019
Expiration Date: 05 June 2020

This certifies that the continuing review request for the protocol above was reviewed under review procedures. Approval is valid for a period of 1 year.

- Continuing.
 Accrual complete with treatment intervention and /or participant interviews/ surveys continuing.
 Subject interventions/data collection ended on (date): **Not Applicable**
 Open for analysis only. Expected end date: _____
 Complete (including all analysis) Date completed: _____
 Cooperative Review
 Other, Please describe: _____
 Study never activated, closure requested.

If you have any questions please do not hesitate to contact Ms S. Mosweunyane at smoweunyane@gov.bw, Tel +267-3632018 and Mr. K. Motlhanka at kgmmotlhanka@gov.bw, Tel +267-3632751. Thank you for your cooperation and your commitment to the protection of human subjects in research.

Yours sincerely


Ms S. Mosweunyane

for **PERMANENT SECRETARY**



Vision: *A Healthy Nation by 2036.*

Values: *Botho, Equity, Wellness, Customer Focus, Teamwork, Accountability*



ANNEXURE 3: Letter requesting permission from the Ministry of Health and Wellness to conduct research

**C/o Phinda Khambe
Private bag 001
Gaborone
Botswana**

20th May 2019

TO: Permanent Secretary Ministry of Health and Wellness
Ethics Committee

REQUEST FOR PERMISSION TO CONDUCT A MEDICAL RESEARCH AS A REQUIREMENT FOR THE FULLFILMENT OF MY MASTERS DEGREE IN PUBLIC HEALTH

I Phinda Khambe of Identity card bearer number 312113105 and student number 50797204 Masters in Public Health at the University of South Africa, I hereby kindly request permission to conduct a study on **“The socio economic life experiences of patients on kidney haemodialysis in Botswana.** The objectives of the research are as follows

- To identify and describe the socio economic effects of patients attending kidney haemodialysis
- To explore the impact of kidney haemodialysis on the socio economic lives of patient attending haemodialysis
- To determine the best way to support the patients attending the kidney haemodialysis socio economically

The purpose of this study will be to explore and describe the effects of kidney haemodialysis on the social economic life of a patient attending dialysis in a developing country being Botswana. An in-depth interview with patients attending haemodialysis will be conducted on man and women who are eighteen years and above.

This study will be conducted as a requirement for the fulfilment of my Masters Degree in Public Health. It will benefit the country together with the patients in informing policy on what intervention to come up with to address challenges facing these patients.

The information from this study will be shared and disseminated by presentation at both national and international conferences and publication in accredited journals.

For further information you may contact my supervisor Dr KA Maboe at maboeka@unisa.ac.za and +12 (0) 4292393 or the Chairperson of the University of South Africa, Department of Health Studies Research and Ethics Committee Prof. E Maritz maritje@unisa.ac.za.

My contact details are 3950988 or 71611900, pkhame@gov.bw or pkhame@yahoo.com

Your positive response to my request will be highly appreciated.

Thank you

A handwritten signature in blue ink, appearing to read 'Phinda Khame', is positioned above the typed name.

Mr Phinda Khame

ANNEXURE 4: Approval from hospital management

TELEPHONE: 3621400
FAX: 3973776
PLOT NO. 1836
HOSPITAL WAY



PRINCESS MARINA HOSPITAL
P. O. BOX 258
GABORONE
BOTSWANA

Phinda Khame
Private Bag 001
Gaborone

13th June 2019

Dear Sir

RE: THE STUDY ON THE SOCIO ECONOMIC EXPERIENCES OF KIDNEY HAEMODIALYSIS ON PATIENTS ATTENDING THE TREATMENT.

Your application for a research permit for the above research protocol has been approved on 13th June 2019.

You are granted full approval, but you need to note the following:

1. You will not change any aspect of your research without permission from the Princess Marina Hospital.
2. You need to report any unforeseen circumstances including the termination of the study of the Princess Marina Hospital.
3. You must allow Princess Marina Hospital access to the study at anytime for purposes of auditing.
4. This permit is valid for one year from 13th June 2019 to 14th July 2020.
5. The end of the study you should give the Princess Marina Hospital a hard copy and soft copy of your report.

Wishing you a great success in your studies.

Yours faithfully



Dr T. Machacha
Hospital Superintendent



Vision: A Model of Excellence in Quality Health Services.
Values: Botho, Equity, Timeliness, Customer Focus, Teamwork.



**ANNEXURE 5: Letter requesting for permission from hospital
superintendent**

**C/o Phinda Khame
Private bag 001
Gaborone
Botswana**

20th May 2019

TO: Hospital Superintendent
Princess Marina Hospital

**REQUEST FOR PERMISSION TO CONDUCT A MEDICAL RESEARCH AS A
REQUIREMENT FOR THE FULLFILMENT OF MY MASTERS DEGREE IN PUBLIC
HEALTH**

I Phinda Khame of Identity card bearer number 312113105 and student number 50797204 Masters in Public Health at the University of South Africa, I hereby kindly request permission to conduct a study on **“The socio economic life experiences of patients on kidney haemodialysis in Botswana.** The objectives of the research are as follows

- To identify and describe the socio economic effects of patients attending kidney haemodialysis
- To explore the impact of kidney haemodialysis on the socio economic lives of patient attending haemodialysis
- To determine the best way to support the patients attending the kidney haemodialysis socio economically

The purpose of this study will be to explore and describe the effects of kidney haemodialysis on the social economic life of a patient attending dialysis in a developing country being Botswana. An in-depth interview with patients attending haemodialysis will be conducted on man and women who are eighteen years and above.

This study will be conducted as a requirement for the fulfilment of my Master’s Degree in Public Health. It will benefit the country together with the patients in informing policy on what intervention to come up with to address challenges facing these patients.

The information from this study will be shared and disseminated by presentation at both national and international conferences and publication in accredited journals.

For further information you may contact my supervisor Dr KA Maboe at maboeka@unisa.ac.za and +12 (0) 4292393 or the Chairperson of the University of South Africa, Department of Health Studies Research and Ethics Committee Prof. E Maritz maritje@unisa.ac.za.

My contact details are 3950988 or 71611900, pkhame@gov.bw or pkhame@yahoo.com

Your positive response to my request will be highly appreciated.

Thank you

A handwritten signature in blue ink, appearing to read 'P. Khame'.

Mr Phinda Khame

ANNEXURE 6A: Informed consent form English

My Phinda Khame I am a Masters in Public Health student at the Department of health studies at the University of South Africa (UNISA).I work as a Monitoring and Evaluation Officer in the disability sector in the Office of the President. **THE SOCIAL ECONOMIC LIFE EXPERIENCES OF PATIENTS ON KIDNEY HAEMODIALYSIS IN BOTSWANA**

The main aim of the study is to inform our society about the challenges faced by people attending haemodialysis with a view to inform policy in the future. The study has been approved by the Research and Ethics Committee of the Department of Health Studies of the University of South Africa (UNISA).

I hereby kindly request your participation in this study. Prior to the commencement of this study a confidentiality binding form will be availed to you to endorse your signature if you accede to continue with the interview. Your participation will be to respond to questions asked by the researcher regarding your health condition haemodialysis. Your participation in this study is totally voluntary, and you can withdraw to participate at any time you so wish. Your participation will be valuable to my study and will contribute towards creating understanding of the socio economic challenges faced by people attending haemodialysis so as to inform policy development. You are kindly requested, if you agree to participate, to sign the consent form to confirm that you are willing to participate in this study. Furthermore kindly know that this study will be distributed by presentation at the educational workshops.

If you have any question concerning the study, or your participation in the study, please feel free to contact the researcher, Phinda Khame 0026771611900 email pkhame@yahoo.com or supervisor Dr KA Maboe 012 429 2393,Maboeka@unisa.ac.za or Chairperson of the University of South Africa, Department of Health Studies Research and Ethics Committee Prof. E Maritz maritje@unisa.ac.za.

The researcher

I have discussed the benefits and obligations involved in this research with the respondents and in my opinion, the respondents understand this information.

Researcher's signature

Date

The participants

I hereby give informed consent to voluntarily participate in the above research study. I agree to complete a questionnaire. I have read the information leaflet and understood that my participation is voluntary and that I may refuse to participate or withdraw from the study at any time. I hereby accord the researcher consent to use tape recorder during our interview to facilitate clear comprehension and analysis of our discussions.

Respondent's signature

Date

ANNEXURE 6B: Tumalano le motsaa Karolo

Ke bidiwa Phinda Khame ke Motswana wa moithuti wa tsa botsogo jwa sechaba (Masters in Public Health) ko sekoleng sa University of South Africa (UNISA) lephata la tsa botsogo (Department of health studies). Ke mmereki wa maemo a mothusa mogokaganyi wa lephata la ba nna le bogole ko Office of the President. Setlhogo sa ditshekatsheko tse ke dirang ke di itebagantse le go amega ga matshelo a balwetse ba ba itlhatwang diphelo kgapetsa kgapetsa jaaka ba tsweletse ba tsaya kalafi ya bone. (“The social economic life experiences of patients on kidney haemodialysis in Botswana”).

Maikailo magolo a tshekatsheko tse ke leka go itsise sechaba sa rona ka jaaka kalafi e e ka fetolang ka teng botshelo jwa yo o mo kalafing ga felela a sa kgone go dira dingwe tse a neng a di kgona pele. Tshekatsheko e e letelwetse go diragadiwa ke ba (Research and Ethics Committee of the Department of Health Studies of the University of South Africa (UNISA).

Ke lo kopa ka boikokobetso go tsaya karolo mo tshekatshekong e. Ke tlhomamisa gore pele ga ke ka go botsolotsa dipotso go tla nna le tumalano e rotlhe e tla e baying monwana go rurugatsa fa sepe se re tla se buwang e tla nna sephiri gareng ga rona (confidentiality binding form). Go tsaya karolo ga gago e tla bo ele go araba dipotso mabapi le go tlhwatswa diphelo ga gago (haemodialysis). Go tsaya karolo mo tshekatshekong e ke ga boithaopi ka jalo oa letelesega go tswa mo thulaganyong e nako ngwe le ngwe. Mme go tsaya karolo gago go ka thusa go tlhologanya mathata a tsamaelanang le go tlhwatswa diphelo le gore a ama jang matshelo a balwetse ka jalo be go ka thusa mo go logeng maano a go fukutsa mangwe a manokonoko a baling mo go one. Ka jalo o kopiwa go ba monwana go supa fa o dumalana le go tsaya karolo mo tshekatshekong e. Mme ebile ke go itse gore ditshekatsheko tse di a go itsesiwe ba botsogo ko bokopanong jwa bagolwane ba di thuto ko UNISA.

O itsesiwe gore fa o na le dipotso dingwe mabapi le ditshekatshekotse tse kana mabapi le go tsaya karolo gago o ka leletsa mosekaseki (the researcher), Phinda Khame 0026771611900 email pkhame@yahoo.com Kana morutintshi wa ga ebong Dr KA Maboe 012 429 2393, Maboeka@unisa.ac.za kana modula setilo University of

South Africa, Department of Health Studies Research and Ethics Committee Prof E Maritz maritje@unisa.ac.za.

The researcher

Ke tihaloseditse motsaa karolo mo tshekatshekong e ka tse a ka di fitlhelang le tse di leng boikarbelo ba gagwe. Ke tlhomamisa gore motsaa karolo mo tshekatshekong e o tihaloganya tse tsotlhe tse di tlhokafalang.

Monwana wa Mosekaseki

Date

(Researcher's Signature)

The participants

Ke rurufatsa gore ke tla nna motsaa karolo mo tshekatshekong e ka go ithaopa. Ke dumalana le go araba dipotso tse di tla botswang. Ke dumalana le gore ke tihaloseditswe ka botlalo gore maikarabelo a mme ke eng, le gore kea ithaopa mme ebile ke na le tshwanelo ya go gana ka go tswa mo tshekatshekong e nako ngwe le ngwe. Ke dumalana le gore go dirisiwe sekapa mantswe (tape recorder) mo tshekatshekon e, go tlhogofaletsa mosekaseki go utlwa se re neng re bua ga setse a geleletsa tshekatsheko e.

Motsaa karolo

Date

(Participant's signature)

ANNEXURE 7: Confidentiality agreement

This form has been design as an instrument to ensure that the rapport between the researcher and the participant is intensified with the most dignified nature without any of the parties causing an injury to the other.

The researcher's obligations and responsibility should not supersede that of the participant, the two should treat themselves as equals. It is the principle of fairness that should prevail during their contacts and values of human rights should be the observed at all times

I hereby declare that I will not divulge any information coming out of this interview by virtue of me being in possession of it.

Signature:

Date:

ANNEXURE 8: Interview guide

Grand tour question: What are your socio-economic life experiences of undergoing kidney haemodialysis at a public healthcare facility?

Sub-questions

1. What are the socio-economic effect of attending haemodialysis?
2. What is the impact of kidney haemodialysis on your socio economic live?
3. How can you be supported best socio-economically when attending haemodialysis?
4. How best do you think services to people who are attending haemodialysis should be delivered
5. Do you have any other issue you would want to raise regarding this haemodialysis

ANNEXURE 9: Audit trail

It is within the expectation of research that participants' views are maintained and any violation of this is a serious ethical omission and has an impact in the trustworthiness of the study. To provide a remedy to this especially in qualitative inquiry the researcher is sometimes obliged to carry out an audit. This is done with the view to ascertain whether the responded still maintains what they would have earlier submitted.

A request will be tendered in this form.

Are you still agreeable to your submission on the questions I had asked you before and a tape recorder is played for them.

Is there anything that you feel should be removed from your submission

Signature of Respondent.....

Signature of Researcher.....

ANNEXURE 10: Editing certificate

Between lines editing

Leatitia Romero
Professional Copy Editor, Translator and Proofreader
(BA HONS)

Cell: 083 236 4536
leatitiaromero@gmail.com
www.betweenthelinesediting.co.za

26 July 2021

To whom it may concern:

I hereby confirm that I edited the dissertation entitled: "THE SOCIAL-ECONOMIC LIFE EXPERIENCES OF PATIENTS ON KIDNEY HAEMODIALYSIS IN BOTSWANA". 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. Research participants' verbatim quotes were not grammatically altered or checked for contextual accuracy. The author is responsible for ensuring the accuracy of the references and its consistency based on the department's style guidelines.



Leatitia Romero

Affiliations

PEG: Professional Editors Group (ROM001) – Accredited Text Editor
SATI: South African Translators' Institute (1003002)
REASA: Research Ethics Committee Association of Southern Africa (104)

ANNEXURE 11: Turnitin Report

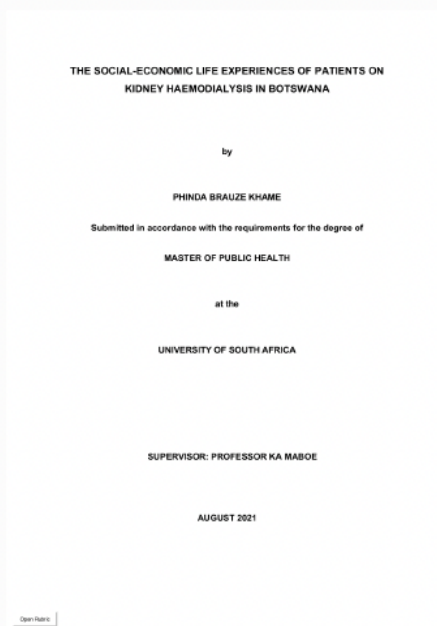


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ANNEXURE 12: Health facility map

The map of Gaborone City showing the public health facility Princes Marina where the Haemodialysis Center is based.

