

**PRE-OPERATIVE PATIENT EDUCATION FOR PATIENTS UNDERGOING KIDNEY
TRANSPLANT AS VIEWED BY NEPHROLOGY NURSES**

by

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DECLARATION

I declare that **PRE-OPERATIVE PATIENT EDUCATION FOR PATIENTS UNDERGOING KIDNEY TRANSPLANT AS VIEWED BY NEPHROLOGY NURSES** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.



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ABSTRACT

The purpose of this study was to determine the views of nephrology nurses regarding pre-operative education prior to kidney transplant. The study was conducted in Nephrology Ward in King Abdulaziz Medical City, Riyadh, Kingdom of Saudi Arabia. Qualitative descriptive design was used. Purposive non-probability sampling was used until data saturation occurred. Target population were registered nurses working in the Nephrology Unit. Both male and female nurses aged between 25 and 59 years working for a period of at least one year in the Nephrology Unit were included in the study. Data saturation was reached after interviewing 15 nephrology nurses. Themes and categories emerged from adopting Creswell's (2013) "data analysis spiral". Some of the key findings were that pre-operative patient education is a multidisciplinary team approach and that psychosocial aspects of the patients should be taken into consideration before educating the patients. Conclusions were drawn and recommendations were also made from findings of this study. Ultimately, key recommendations were that there is a need to train and empower nurses in importance of delivering pre-operative education and that expatriate nurses have access to Arabic speakers to overcome language barriers while educating the patients.

Keywords

Data saturation; descriptive design; kidney transplant; nephrology nurses; nephrology unit; pre-operative education, qualitative research; sampling, target population; registered nurses.

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LIST OF ABBREVIATIONS

AKI	Acute kidney injury ARF = Acute renal failure
ATG	Anti thymoglobulin
CKD	Chronic kidney disease
CVD	Cardiovascular diseases
DVT	Deep venous thrombosis
ER	Emergency resuscitation unit
ESRD	End stage renal disease
GFR	Glomerular filtration rate
IM	Internal medicine
IV	Intravenous
OR	Operating theatre
PD	Peritoneal dialysis
RRT	Renal replacement therapy

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Kidney failure is one of the fast-growing conditions in the world. This condition can be as a result of many other conditions. It is experienced when the kidneys stop their normal function. When the kidney stops working, renal failure occurs. Renal failure is defined by Abuelo (2012:4) as a loss of renal function leading to fall in Glomerular filtration rate (GFR) to below 80ml/min and to an accumulation of creatinine urea and other nitrogenous wastes. Substances normally excreted in urine accumulate in body fluids, disrupt endocrine and metabolic functions and cause serious disturbances of fluid, electrolyte and acid base balance (Saxon, Etten & Perkins 2014:204). Renal failure can manifest itself either as acute renal failure (ARF) or chronic renal failure (CRF). These phases are briefly discussed in the paragraphs below.

1.1.1 Acute renal failure

Acute renal failure is characterised by a sudden onset with rapid reduced urine formation until less than the essential minimum of around (500 ml) of urine is being produced per day (Sherwood 2007:537). This author further indicates that a person may die from acute renal failure or the condition may be reversible. Formerly called acute renal failure and now acute kidney injury (AKI) is the preferred terminology to better reflect the full spectrum of pathology and clinical presentation from organ compromise to failure (Krenitsky & Rosner 2011:28). Furthermore, these authors maintain that AKI occurs in approximately seven percent (7%) of all hospitalised patients and between 33% and 66% of all intensive care unit patients.

Ding and Ronco (2016:7) indicate that AKI is now considered to be a major public health problem affecting millions of people worldwide and leading to increased mortality, a longer length of hospital stay and higher risks of chronic kidney disease (CKD) and end stage renal disease (ESRD). These authors further state that there are multiple causes of AKI that are contributing to the incidence of AKI which are, infectious disease (malaria,

leptospirosis and diarrhoea), obstetric diseases and toxic mechanisms (snakes, spiders and insect bites). The AKI once not reversed, it then progresses to chronic renal failure which is discussed below.

1.1.2 Chronic renal failure

Chronic renal failure is defined as a progressive deterioration of renal function resulting in uraemia. In addition, diabetes, prostatic hyperplasia, hypertension, and long-term use of non-steroidal anti-inflammatory drugs can contribute to chronic renal failure (Saxon et al 2014:205). In addition, Smeltzer, Bare, Hinkle and Cheever (2010:1313) indicate that CKD is an umbrella term that describes kidney damage or a decrease in (GFR). Chronic kidney disease also known as chronic renal failure is a growing health care concern and public health burden in developed and developing countries. In many countries, CKD prevalence is already high and continues to increase (Nahas & Levin 2009:82).

CKD is more common in elderly, affecting one out of every four people over the age of sixty five (65) (Gotto & Toth 2016:463). Furthermore, Smeltzer et al (2010:1313) point out that 16.8 % of United States population aged twenty (20) years and older have CKD. CKD is associated with decreased quality of life, increased health care expenditure and premature death (Smeltzer et al 2010:1313). Gotto and Toth (2016:463) indicate that the crisis regarding CKD is that it is under diagnosed undertreated and the relationship to cardiovascular disease (CVD) under recognised. Smeltzer et al (2010:1313) indicate that the national Kidney Foundation has classified CKD into five stages as shown in the table 1.1.

Table 1.1 Stages of chronic kidney disease

Stages of disease	Description	GFR (ml/min per 1.73 m²)	Prevalence n (%)	Action
1	Kidney damage with normal or increased GFR	>90	3.600.000 (1.8)	Diagnosis and treatment of comorbid conditions, slowly progression CVD risk reduction
2	Kidney damage with mildly increased GFR	60-89	6.500.000 (3.2)	Estimating progression
3	Moderately decreased GFR	30-59	15.500.0009 (7.7)	Evaluating and treating complications
4	Severely decreased GFR	15-29	700.000 (0.4)	Preparation for renal replacement therapy(RRT)
5	Kidney failure	<15 for undergoing dialysis	400.000 (0.2)	RRT (if patient wishes)

Adapted from (Nahas & Levin 2009:83; Rolfes, Pinna & Whitney 2014:823)

The table above shows different stages of CKD. Some researchers indicate that there are treatments for each stage of CKD and therefore, timely detection of CKD and initiation of treatments are important to prevent slow progression as well as to prevent complications (Nahas & Levin 2009:77; Rolfes, Pinna & Whitney 2014:823). The severity of CKD is classified based on the level of (GFR), lower GFR levels represent more advanced CKD stages and are associated with an increased risk for complications of CKD. Continued progression of CKD eventually leads to kidney failure which is defined as an estimated GFR of less than 15 ml/min/1.73 m² or need for dialyses or kidney transplantation (Nahas & Levin 2009:82). Stage five (5) results when the kidneys cannot remove the body's metabolic wastes or perform their regulatory functions and renal replacement therapies are required to sustain life (Smeltzer et al 2010:1313). Gotto and Toth (2016:463) point out that care for patients with CKD requires multiple interventions, and providing appropriate care requires the coordinated multidisciplinary effort of primary care physicians, allied health care workers and other specialists in addition to nephrologists. In addition, Sherwood (2007:535) maintains that chronic renal failure is irreversible and eventually fatal treatment is aimed at maintaining renal functions by alternative methods such as dialysis and kidney transplantation which are discussed below.

1.2 TREATMENT MODALITIES FOR CHRONIC KIDNEY DISEASE

1.2.1 Dialysis

Dialysis is a commonly used medical method for CKD. The Australian Institute of Health and Welfare (2012:2) defines dialysis as an artificial method of removing waste substances from the blood and regulating levels of circulating chemicals, a function usually performed by the kidneys. Canobbio (2006:831) asserts that a dialysis is a temporary or permanent process that artificially performs the excretory functions of the kidney. Dialysis can either be haemodialysis or peritoneal dialysis as discussed in the paragraphs that follows.

1.2.1.1 Haemodialysis

In haemodialysis, blood is diverted from the body to a dialysis machine where it is filtered before returning to the body. This type of dialysis can be done at home, in hospital or satellite clinics. During haemodialysis, a patient is connected to the machine three (3) to four (4) hours, three (3) times a week (Australian Institute of Health and Welfare 2012:2). Canobbio (2006:831) indicates that haemodialysis requires access to the patient's blood stream by special vascular catheters called shunts. An external shunt (catheter) consists of cannula inserted into an artery and a vein but connected outside the body usually on the arm. An internal shunt involves creating a connection between the artery and a vein through an arteriovenous fistula or artificial graft implanted between an artery and a vein; this is done on the arm (Canobbio 2006:831). Haemodialysis can also be done through a long-term dialysis catheter (permacatheter).

A Permacatheter can be placed through a percutaneous or open surgical technique (Lumley & Hoballah 2008:378). Kumar (2017:343) highlights that the common site of insertion of a dialysis catheter is the right internal jugular, the next preferred site is left internal jugular vein, followed by femoral. The other method of treating chronic renal failure is by peritoneal dialysis, which is discussed in the following paragraphs.

1.2.1.2 Peritoneal dialysis

Smeltzer et al (2010:1311) define a peritoneal dialysis as a procedure that uses the lining of the patient's peritoneal cavity as the semi-permeable membrane for exchange of fluid and solutes. Patients who are on peritoneal dialysis have a permanent silicone catheter (tenckhoff) placed into their abdominal cavity (Canobbio 2006:831). In a peritoneal dialysis, the abdomen is filled with sterile dialysis solution and the blood is filtered through the peritoneal membrane. The dialysis solution contains a type of sugar (usually glucose or dextrose) which draws the waste products and extra fluid out of the blood through the peritoneal membrane into the solution. The fluid is left in the abdomen for a specified time, and then the used solution now containing the wastes and extra fluid, is drained out of the body and replaced with fresh solution. This process is called an exchange and takes about 30-45 minutes. In between exchanges, the patient is free to continue usual activities (Australian Institute of Health Welfare 2012:2).

A Peritoneal dialysis can either be performed by the patient during the day (continuous ambulatory peritoneal dialysis) usually three (3) to four (4) times or automatically by a machine at night for about eight (8) to ten (10) hours while the patient sleeps (automated peritoneal dialysis). Moreover, peritoneal dialysis can be performed almost anywhere; the patient does not need to be in a hospital or clinic and can manage the procedure without assistance (Australian Institute of Health Welfare 2012:2).

1.2.1.3 Kidney transplantation

McKay and Steinberg (2010:01) define transplantation as the treatment modality of choice for nearly all suitable candidates with chronic renal failure end stage kidney disease. The authors also point out that transplantation improves both patient survival and quality of life. Furthermore, Votroubek and Tabacco (2010:472) posit that with the development of pharmacologic immunosuppressant in the early 1960s, the first successful living related kidney transplant took place with graft survival exceeding 20 years. These authors further add that since that time, organ transplantation has become accepted as the treatment of end stage disease with more than 25 000 organs transplanted annually in United States of America.

Danovitch (2012:1) avers that for most patients with kidney failure, kidney transplantation has the greatest potential for restoring a healthy productive life. Kidney transplant improves patient survival, improve quality of life, patients might return to full-time employment and have improved sexual function (Torpey, Moghal, Watson & Talbot 2010:4).

1.3 BACKGROUND TO THE RESEARCH PROBLEM

1.3.1 Kidney transplant in Saudi Arabia

The researcher works in one of the hospitals in Saudi Arabia, which offers hope to the patients who have end stage renal disease by performing renal transplantation. In Saudi Arabia, the support of senior scholars approved organ donation and transplantation from cadaver and living donors in 1982. This was followed by an order in 1985 to establish the National Kidney Foundation, which later changed its name to Saudi Centre for Organ Transplantation in 1993 (United Nations Economic Scientific and Cultural Organisation (Unesco) 2011:47). Organ transplantation is regulated under Saudi regulations of transplantation. It is allowed from cadaver donors, provided that they expressed their consent in their lifetime, otherwise consent from their next of kin should be obtained (Unesco 2011:47).

A successful kidney transplant surgery offers hope for patients with acute and chronic renal failure. Patients undergoing kidney transplant are usually overwhelmed with mixed feelings, some patients are anxious some patients are excited (Smeltzer et al 2010:1351). Transplant of any organ is surrounded by mystery and emotional impact. It is considered a scientific progress and a miracle of medicine, as liberation of the difficulties of the traditional treatment but it is also frightening (Mancuso 2006:114). Smeltzer et al (2010:1351) indicate that patients choose kidney transplantation for various reasons such as the desire to avoid dialysis or to improve their sense of well-being and the wish to lead normal life.

These authors further allude that kidney transplant is the patient's hope for a road to recovery and is considered more effective medically and economically than long term dialysis therapy especially for those patients who have suffered emotional, psychological and physical impacts of end stage renal disease while they were on haemodialysis.

Furthermore, not only is greater patient survival achieved by renal transplantation, but there is remarkable superior level of rehabilitation over that attained by dialytic therapy (Schrier 2007:103). In addition, Smeltzer et al (2010:1351) highlight that kidney transplantation involves transplanting a kidney from a living donor or deceased donor to the recipient who no longer has renal function. Living donors can either be related or non-related.

1.3.2 Living related kidney transplant

Following legal definition living related kidney transplant includes first degree consanguinity parents and children (Gandhi, Malde, Kudalkar & Karnik 2011:589). These authors extend the definition of living related to include siblings, cousins, nephews, nieces, and other blood relatives. Furthermore, family members willing to donate the kidney must be in a good health and be able to understand about transplantation and being able to be in full capacity to give consent. A transplant from a living donor can have many benefits for most patients. Moreover, a living donor will be their best chance of having a transplant operation before they can actually need dialysis, if someone close to them is able to donate a kidney the whole transplant procedure can be planned well before dialysis (Stein, Higgins & Wild 2008:39). These authors further elaborated that evidence from the United Kingdom (UK) data is that living donor transplants last longer than cadaveric donor transplants having 95% chance of still working one year after transplant operation, 89% chance of working five years after and 65% chance at 10 years.

1.3.3 Living non-related kidney transplant

Gandhi et al (2011:589) define living non-related kidney transplant as a kidney transplant from a donor that is not related to the recipient, these maybe spouses, in-laws, friends or altruist donor. Akabayashi (2014:477) points out that the current state of biomedical science and technology has made it possible for non-relatives to become viable donors. In addition, the use of advanced immunosuppressant drugs has enlarged the donor pool for organ transplantation to include those who are not closely related or those who are not genetically related at all.

Rejection issues are being overcome and incompatibilities between donor and recipient have become less of an obstacle to safe transplantation. In addition, living unrelated

donors exhibited short and long-term graft outcomes similar to values of sibling/related donor transplant. Along-term follow-up with 2,155 patients in Iran showed that living unrelated kidney transplantation is as good as those in living related transplantation. On this basis, the authors confirmed that transplants from living unrelated donors maybe proposed as good therapeutic alternative for management of patients with end stage renal disease (Akabayashi 2014:477).

1.3.4 Cadaveric renal transplant

Gandhi et al (2011:589) define a cadaveric renal transplant as a kidney transplant from a previously healthy donor patient who suffered irreversible catastrophic brain injury of known etiology. According to Cunha, Miranda and Concalves (2013:512), deceased donors need to be declared as either brain dead donors or non-heart beating donors. In case of brain death, mechanical ventilator is used to sustain respiratory functions, while other physiological functions must also be kept functional until the organs have been harvested. People give consent to donate organs for transplantation at the time of death while they are still alive and inform family members about this intention to donate an organ otherwise consent from their next of kin should be obtained (Unesco 2011:47).

Babawale and Yemi (2016:65) highlight that the use of deceased donor kidney has significantly increased the number of transplanted patients in countries where this practice is being carried out. In addition, Cunha et al (2013:512) also point out that a protocol for brain death determination was created in nineteen (1999) and implemented worldwide to considerably reduce death declaration time. According to (Unesco 2011:47), Brain death must be declared by a committee of specialists. Donors and recipients should be no younger than eighteen (18) years, and the minimum age for cadaver donors should be more than six (6) months, five kilogram (5kg) (Unesco 2011:47). A potential kidney donor's willingness to donate the kidney is dependent on the knowledge, attitude and cultural values. Assessment of these characteristics in first-degree relatives of patients with chronic disease may reveal information about likelihood that this group of individuals will be willing to donate the kidney (Babawale & Yemi 2016:65).

1.4 Factors that need to be taken into consideration before patient go for kidney transplant

There are factors that need to be taken into consideration before patients can undergo kidney transplant surgery. These factors are but not limited to patients should be well informed about the processes involved; they should receive detailed information regarding the tests to be done; and what to expect in terms of specialised care before and after kidney transplant. Furthermore, Ghadami, Memarian, Mohamadi and Abdoli (2012:157) argue that kidney transplant needs long-term care and follow-up, patients with kidney transplant needs support in field of knowledge, skills and motivation. Education of kidney transplant patients is a complicated process including a planned combination of educational activities in order to help them change their behaviour in a way that result in their way to recovery (Ghadami et al 2012:157).

According to Syx (2008:50), the nurses are in a key position to positively affect the lives of the patients through education, producing potentially longstanding changes in patients' life. The 24 hours after transplantation represent a critical period, marked by hemodynamic and respiratory instability and there is a great risk of developing complications mainly of graft rejection (Silva, Pontes, Genzini, Prado & Amaral 2014:555). Therefore, the nurse, patient and family should work together to set realistic, achievable goals, the aims of which are mutually agreed (Akyolcu 2002). Patients need to be given enough information regarding post-operative care. Patients should be given information regarding post-operative exercises, they need information regarding recognising signs and symptoms of rejection, compliance with medication and importance of fluid intake. If this information is not conveyed to them, patients will have complications such as infections, prolonged hospitalisation, as well as renal transplant rejection

The researcher worked in one of the hospital in Saudi Arabia in the Nephrology Unit and was involved in taking care of patients who had kidney transplant and is of the opinion that there might be a problem with patient education before kidney transplant. Patients post-kidney transplant were not compliant with medication, diet and activities that enable them to maintain good health and a normal lifestyle. Patients undergoing kidney transplant require extensive pre-operative education from nursing staff as well as doctors. Ghadami et al (2012:157) posit that education of kidney transplant patients is a complicated process including a planned combination of educational activities in order to help them change their behaviour in a way that result in their recovery.

Patient education is one of the aspects included in the mission and vision of the National Guard hospital as well as in the chapters of Joint Commission International Association (JCIA) under which the hospital practices. Patient education requires collaboration between nursing staff and doctors to make sure that patients are provided with all relevant information that will help them to maintain healthy lifestyle post surgery. Silva et al (2014:554) highlight that nurses as compared to other professionals are in direct contact with the patient. For this reason, there are various ways in which nurses can contribute to the health of the patient and to the success of the transplant. Transplant coordinators and doctors in the hospital take primary responsibility in patient education before the patient goes to surgery. It is not clear whether all aspects of pre-transplant education are being addressed.

1.5 STATEMENT OF RESEARCH PROBLEM

Although patients are given pre-transplant education before undergoing the operation, it was observed that most of the patients were reluctant to follow instructions post-kidney transplant. These patients refused to get out of bed and mobilise, some patients became very stressed if they did not pass urine immediately after the operation not knowing that sometimes kidneys may take time to start working (referred to as sleeping kidneys), while others expected to have their dialysis catheter removed immediately post-transplant. Those observations attracted the researcher's interest to address this matter by exploring and describing pre-operative education for patients undergoing kidney transplant as viewed by nephrology nurses. It is expected that post-transplant, patients should be able to understand and comply with the instructions.

1.6 AIM OF THE STUDY

1.6.1 Research purpose

The purpose of this study was to determine views of nephrology nurses regarding pre-operative education for patients undergoing kidney transplants as to make recommendations based on these views regarding post-operative care that these patients need.

1. 6.2 Research objectives

Based on the purpose of the study, the following objectives were developed. The objectives of this study were to:

- Explore the views of nephrology nurses regarding the pre-operative patient education given to patients undergoing kidney transplant.
- Describe pre-operative teaching that nurses believe is important to provide patients before undergoing kidney transplant.
- To recommend measures required to improve pre-operative education given to patients undergoing kidney transplant as viewed by nephrology nurses.

1. 7 RESEARCH QUESTION

The following research question was formulated to assist in achieving the objectives of the study:

“What are the views of nephrology nurses regarding pre-operative education for patient undergoing kidney transplant?”

1. 8 SIGNIFICANCE OF THE STUDY

The results of the study will be useful to health practitioners in the hospital, nurses in the hospital will take note on how to educate patients before undergoing kidney transplant. The findings of this study will be discussed with the Unit Manager for modification of the current health education system. The booklet on pre-transplant information will be developed and made readily available for all health practitioners. The hospital authorities and policy makers in the hospital may use information obtained from this study to come-up with policies to address patient education before patients undergoes kidney transplant.

1. 9 DEFINITIONS OF KEY TERMS

1. 9.1 Kidney transplant

Morris and Knechtle (2013:649) define the kidney transplant as the treatment of choice for patients with end stage renal disease with pre-emptive transplantation being the ideal option. In this study, kidney transplant refers to the process whereby a kidney of one person is inserted into the body of a patient with chronic renal failure.

1. 9.2 Patient

Elder, Evans and Nizette (2008:21) define a patient as the person being the recipient of health care services. In this study, patient refers to a person with chronic renal failure who is interested to undergo kidney transplantation in order to receive a donated kidney.

1. 9.3 Views

Views are an opinion about something, an attitude towards something (Hornby 2010:1657). In this study, views refer to how the Nephrology nurses see pre-transplant education given to patients before kidney transplant.

1. 9.4 Nephrology nurses

Slee, Slee and Schmidt (2008:421) State that Nephrology nurses are nurses who specialise on the needs of patients and families with end stage renal disease. In addition, Stone and Rabin (2013:309) also define nephrology nurses as integral members of the team who have chosen an area of specialisation because of an interest and a desire to work with patients and patients with kidney disease. In this study, nephrology nurses refer to registered nurses working in Nephrology Unit who helps patients with kidney disease who have undergone kidney transplant.

1. 9.5 Patient education

Rankin, Stallings and London (2005:213) define patient education as the process of influencing patient behaviour and producing the changes in knowledge, attitudes and skills. In this study, patient education refers to a process whereby nephrology nurses provide patients with information to enhance their knowledge to improve their health.

1.10 THEORETICAL FOUNDATION OF THE STUDY

1. 10.1 Research paradigm

Botma, Greef, Mulaudzi and Wright (2010:39) define a paradigm as an accepted set of beliefs or values that guides research. A qualitative design method was used, and a constructivist paradigm was adapted. Botma et al (2010:39) aver that a constructivist researcher relies on a qualitative data collection method and analysis or on combination. A constructivism qualitative approach is associated with a social paradigm which emphasises on constructing the nature of reality, it is about recording, analysing and attempting to uncover the deeper meaning and significance of human behaviour and experience.

The researcher is interested in gaining and understanding the complex scenario of people's experience. The emphasis is on the qualitative approach and tends to be inductive for which theory can be developed or try to look for pattern for basic data collected. This involves the movement from specific-to-general and is sometimes called a bottom-up approach. Through the inductive approach, the researcher moves towards discovering a binding principle that takes care to have conclusions based on the data (Baran 2016:46).

1. 10.2 Theoretical assumptions

Botma et al (2010 39) highlight that the research paradigms identified by researchers are based on philosophical assumptions, namely, ontological, epistemological, and methodological assumptions.

1. 10.2.1 Ontology

Botma et al (2010:40) define an ontology as a branch of philosophy dealing with the nature of reality. In this study, the researcher's intention was to know the nature of reality of patient education for patient undergoing kidney transplant as viewed by nephrology nurses in the Nephrology Unit in one hospital in Saudi Arabia.

1. 10.2.2 Epistemology

An epistemology is a branch of philosophy that deals with nature of knowledge (Botma et al 2010:40). The researcher in this study worked in Nephrology Unit and was involved in taking care of the patient post-kidney transplant. The nature of the relationship the researcher had with the participants helped to obtain rich source of information from the participants.

1. 10.2.3 Methodology

Botma et al (2010:40) indicate that a methodology pertains to rules and procedures that specify how the researcher must study or investigate what he or she believes must be known. Qualitative research method was used to explore and describe the pre-operative education for patients undergoing kidney transplant as viewed by nephrology nurses.

1.11 RESEARCH DESIGN AND METHODOLOGY

A qualitative research approach was used to conduct this study. A qualitative research is a systematic interactive subjective approach used to describe life experiences and give them meaning (Grove, Burns & Gray 2013:705). A qualitative research allows the researcher to explore the depth, richness and complexity inherent to the phenomenon (Burns & Grove 2009:51). The study complied with characteristic of a qualitative approach, as the research was conducted in the hospital settings which was the natural environment and real-life situations for nephrology nurses.

1. 11.1 Research design

A research design is an overall plan for addressing a research question including strategies for enhancing the study's integrity or strategy that is used to answer a research question (Polit & Beck 2014:390). The study adopted a qualitative descriptive design as described by Edmonds and Kennedy (2012:133). The latter authors describe qualitative descriptive design as follows: individuals, group narratives of stories or specific life events, the conditions or contextual factors supporting the story, the relationship between individuals' stories and the culture certain life events impact the participants story line.

1. 11.2 Target population

Brink, Van der Walt and Van Rensburg (2012:131) refer to the population as the entire group of persons or objects that is of interest to the researcher, that meets the criteria the researcher is interested in studying. The population for this study were registered nephrology nurses working in Nephrology Unit in one hospital based in Saudi Arabia. There are around 35 nurses working in Nephrology Unit.

1. 11.3 Inclusion and exclusion criteria

1. 11.3. 1 Inclusion criteria

Grove and Cipher (2016:25) highlight that inclusion criteria are the requirement identified by the researcher that must be present for an element or participant to be included in a sample. According to Grove et al (2013:353), inclusion criteria are characteristics that a subject or element must possess to be part of the target population. In order to be eligible to participate in the study, participants met the following criteria:

- Both male and female nurses were included in the study.
- The nurses worked in Nephrology Unit for a period of at least one year and had nephrology experience.
- Participants voluntarily consented to participate in the study.

1. 11.3.2 Exclusion criteria

Exclusion criteria are the requirement identified by the researcher that eliminate or exclude participants from being in a sample (Grove & Ciper 2016:25). According to Grove et al (2013:353), exclusion criteria are characteristics that can cause a person or element to be excluded from target population. Nephrology nurses with experience less than one year were excluded from participating in the study. The reason for exclusion was that the nurses with less than one-year experience still have more to learn in the transplant unit.

1. 11.4 Sampling and sampling technique

Burns and Grove (2009:42) posit that a sample is a subset of the population that is selected for a particular study. In addition, Botma et al (2010:274) indicate that sampling involves selection of specific research participants or artefacts that will be included in the study. Sampling for this study was done among the population of nephrology nurses who agreed to be part of the study. The participants were nephrology nurses working in Nephrology Unit. The sample size was determined by the saturation of data during the interview determined by Polit and Beck (2012:62). Qualitative researchers use principle of data saturation that occurs when themes and categories in the data become repetitive and redundant, such that no new information can be gleaned by further data collection (Polit & Beck 2012:62).

A purposive non-probability sampling was used to select nephrology nurses who agreed to be part of the study. Polit and Beck (2008:763) indicate that a purposeful sampling is a non-probability sampling method in which the researcher selects participants based on personal judgment about which one will be most informative. The rationale for choosing a non- probability sampling was that the nephrology nurses would provide rich strength descriptions of their views until saturation of data.

1.12 RESEARCH SETTING

The study was conducted in the Nephrology Unit in one of the academic hospital in King Abdulaziz Medical City, Riyadh, Kingdom of Saudi Arabia. The hospital was selected

because the researcher worked in the selected area and identified patient education for patients' undergoing kidney transplant as a concern that needs to be addressed.

1.13 DATA COLLECTION

Polit and Beck (2012:725) define a data collection as a gathering of information to address a research problem. The researcher used semi-structured in-depth interviews to collect data using a private room in the hospital. Furthermore, a semi-structured data collection interview is referred to as an interview that range between the two classifications, a structured and an unstructured data collection interview (Brink et al 2012:157). Data collection commenced after the proposal was approved and once the ethical clearance for the study was granted. The researcher used a Grand tour question with a list of probing questions specific to the topic for clarifications. The researcher also used a semi-structured interview guide (Annexure 6) with open-ended questions. All interviews were audio-recorded and transcribed field notes used as backup in case of faulty recording equipment. One interview lasted for 20-35 minutes. The audio-recorder was used with permission from participants.

1.14 DATA ANALYSIS AND MANAGEMENT

Polit and Beck (2012:725) describe a data analysis as a systematic organisation and synthesis of research data. In addition, Grove et al (2013:46) define a data analysis as a process that reduces, organises and give meaning to the data. De Vos, Strydom, Fouché and Delport (2011:399) indicate that data analysis in qualitative studies is a process of inductive reasoning. It is done during and after data collection. Data were transcribed verbatim before analysis commenced and the researcher read and re-read the data to obtain a deeper understanding. Data was analysed using thematic data analysis steps as described by Creswell (2013:182-188) as follows:

1.14.1 Organising the data

Creswell (2013:182) asserts that researchers typically organise their data into computer files, besides organising files researchers convert their files to appropriate text units (e.g., a word, a sentence and entire story) for analysis either by hand or computer.

1. 14. 2 Reading and memoing

The researcher selected two or three transcripts and read them several times in order to obtain a general sense of the information and reflect on its overall meaning.

1. 14. 3 Describing, classifying and interpreting data into codes and themes

Creswell (2013:184) highlights that in this step, the researcher builds detailed descriptions develop themes or dimensions and provide interpretation in light of their own views or views of perspectives in the literature.

1. 14. 4 Interpreting the data

Creswell (2013:184) points out that researchers interpret the results of analysis in order to make sense of data. This process will be discussed in detail in Chapter 2 (research methodology).

1.15 MEASURES TO ENSURE TRUSTWORTHINESS

Trustworthiness is an alternative construct for validity and reliability in qualitative research (Botma et al 2010:232). In order to enhance trustworthiness, the researcher followed a framework by Lincoln and Guba (1985) as cited in Polit and Beck (2008:539).

1. 15.1 Credibility

Lichtman (2010:228) highlights that credibility suggests that the results should be evaluated from the point of view of the participants. Credibility also refers to confidence in the truth of the data and interpretations of them (Polit & Beck 2014:323). These authors further maintain that credibility involves two aspects, first, carrying out the study in a way that enhances the believability of the findings, and second, taking steps to demonstrate credibility to external readers. Credibility in this study was ensured by asking the participants to confirm the way they actually perceived pre-operative patient education without the fear of losing credibility in the eyes of the managers of the organisation. The study also allowed Unisa supervisors to scrutinise the research methodology. Interviews

were recorded, and participants were asked to check if their words matched what they actually intended.

1. 15. 2 Dependability

Dependability refers to a criterion for evaluating integrity in qualitative studies, referring to the stability of data over time and over conditions, analogous to reliability in quantitative research (Polit & Beck 2012:725). In addition, Lichtman (2010:228) indicates that the term dependability emphasises the need for the researcher to account for the ever-changing context within which research occurs. An audit trail was used, the researcher maintained consistency of the findings under the supervision of the study supervisor and kept all data related to the study for audit in the safe place. The study also allowed a person who is external to the research process to ascertain the status of the research in order to determine whether logical decisions are made throughout the research process.

1. 15. 3 Conformability

Confirmability refers to the degree to which findings of the study are a genuine reflection of the participants (Haye & Singh 2012:201). According to Polit and Beck (2014:323), conformability is concerned with establishing that the data represent the information participants provided, and that the inquirer does not imagine the interpretations of those data. The findings of the study reflected the participant's voices and not the researcher's biases, motivation or perspectives.

1. 15. 4 Transferability

Transferability refers to the extent to which qualitative findings can be transferred to other settings or groups, one of the several models of generalisability (Polit & Beck 2012:180). Transferability also refers to applicability of findings to the other situations and other people (Tappen 2010:160). In this study the researcher applied strategies such as thick descriptions, purposive non-probability sampling and data saturation to enhance transferability as suggested by Brink et al (2012:173). The participants were purposively selected for the study. Semi structured interviews were done until no new information emerged. The researcher provided sufficient detail in the report about research settings, participants, data collection strategies and analysis and the findings to enable the readers

to determine the degree of similarity between the study site and receiving context as part of thick description.

1.16 ETHICAL CONSIDERATIONS

1. 16.1 Protecting the rights of the institution

1. 16.1.1 Permission to conduct the study

The University of South Africa (Unisa) Higher Degrees Ethical Committee (Annexure 1) approved and gave permission to carry out the research. Similarly, the letter requesting to conduct the study was written to the Ethics Committee in King Abdul-Aziz Medical City hospital in Riyadh (Annexure 7). Furthermore, permission was also requested from the nursing administration as well as from the unit nurse managers of the hospital under study (Annexure 2 and Annexure 3).

1. 16.2 Scientific integrity of the research

The researcher maintained honesty by avoiding duplication of any other work, misconduct such as fabrication, falsification, dishonesty, and plagiarism at all times. Grove et al (2013:188) state that the researcher is responsible for maintaining the integrity of his or her research protocols, results and publication.

1. 16.3 Protecting the rights of participants

1. 16.3.1 Confidentiality

Confidentiality entails protection of the study participants so that data provided is never publicly divulged (Polit & Beck 2008:750). Confidentiality is also defined as the researcher's management of private information shared by a subject that must not be shared with others without authorisation of the subject (Burns & Grove 2009:213). The participants as well as information and data collected were protected from other people and general reading. Information collected was not shared with people who were not officially and directly involved with the research. Explanations were given to the

respondents about people who will have access to their data and that their data will be stored safely.

1. 16. 3. 2 Informed consent

Informed consent is an ethical principle that requires researchers to obtain the voluntary participation of subjects, after informing them of possible risks and benefits (Polit & Beck 2012:730). Participants were asked to fill up written informed consent (Annexure 4) forms before the study commenced. The researcher also informed participants verbally that they will not be forced to participate in the study and that they have the right to withdraw at any time.

1. 16. 3. 3 Protecting the rights to privacy

Grove et al (2013:169) describe a privacy as an individual's right to determine time, extent and general circumstances under which information will be shared with or without others. Accordingly, the participants were asked to give consent before they participated in the study. The researcher endeavoured to protect the participants from any form of discomfort by interviewing them in a private room.

1. 16. 3. 4 Anonymity

Anonymity entails making use of pseudonyms instead of the participants' real names, ensuring that the participants are not identifiable in print (Leedy & Ormrod 2010:101). The researcher used numbers to refer to various participants, for example Participant 5. The researcher informed participants that their names and their personal characteristics would not be known. The publication and reporting of the findings were conducted in such a way that the participants remained anonymous.

1. 16. 3. 5 Voluntary participation and the right to withdrawal

Klenke (2008:50) alludes that a voluntary participation means that participants are not coerced to participate in the study and that at any time during the research, they may withdraw without penalty. Participants took part in research according to their own free

will. Therefore, participants were not coerced to participate in the study. Furthermore, participants were informed that they had the right to withdraw their participation at any time and for whatever reason if they had second thoughts about entering the study. This was stated in a consent form and was also stated verbally.

1. 16. 3. 6 Autonomy

Autonomy as it pertains to research is a fundamental ethical principle that underpins both self-determination and the right of every person to give clear and knowledgeable informed consent (Macnee & McCabe 2008:147). Autonomy also refers to the respect for the inherent freedom and dignity of a person (Welfes 2015:42). Participants were presented with research information, explaining the risks and benefits in order for them to make decision to participate in the study.

1. 16. 3. 7 Beneficence

Polit and Beck (2008:748) define beneficence as a fundamental ethical principle that seeks to maximise benefits for study participants and prevent harm. The researcher assessed the type, severity and number of risks that the participants might experience by participating in the study (Grove et al 2013:176). Potential risk anticipated was anxiety associated with responding to certain questions during interviews. Accordingly, participants were protected from harm and temporary discomfort by ensuring that participants were informed about the types of question likely to be asked.

1. 16. 3. 8 Veracity

Moule and Goodman (2009:57) define veracity as the ethical principle of telling the truth. The researcher established a trusting relationship with participants by providing honest information to participants.

1. 16. 3. 9 Fidelity

Welfes (2015:47) points out that fidelity entails faithfulness to promises made and to the truth. The interest of the participants will be placed ahead of the researchers' own interest by not disagreeing with what the participants says and by not showing any signs of

boredom during the interview. The researcher maintained loyalty to the participants and the profession as well as to the hospital in which the study was conducted by acting according to the rules stipulated in the consent form. The researcher ensured that information shared during the interview remained confidential. Only the researcher has access to the data generated by the study.

1.17 SCOPE OF THE STUDY

The scope of the study was based on the objectives set, resources and time that was spent during semi-structured interview of each participant that will take at least 20 to 35 minutes by the researcher. The study covered the health education that is provided to the patients as perceived by nephrology nurses who have been engaged in providing the education.

1.18 LIMITATION OF THE STUDY

The nature of the study was qualitative contextualised in one hospital in Saudi Arabia using small samples. Therefore, the findings were not generalised to other populations. The researcher used open-ended questions and inductive approach therefore decreasing generalisation of the study.

1.19 STRUCTURE OF THE DISSERTATION

Chapter 1: Study overview

Chapter 2: Research design and methodology

Chapter 3: Presentation of findings and data analysis

Chapter 4: Discussion of findings and literature control

Chapter 5: Summary of findings, conclusions, limitations, and recommendations

1.20 SUMMARY

This chapter covered background to the study, statement of the problem, research question, objectives of the study, significance of the study, theoretical paradigms, theoretical framework, definition of terms, brief discussion of research methodology,

ethical consideration as well as limitations of the study. According to the background of the study, it was clear that nurses and doctors still have responsibility to address patient education for patients undergoing kidney transplant. The following chapter covers the research methodology followed in this study.

CHAPTER 2

RESEARCH DESIGN AND METHODOLOGY

2.1 INTRODUCTION

The previous chapter focused on the overview of the study, which covered background to the study, statement of the problem, research question, objectives of the study, significance of the study, theoretical paradigms, theoretical framework, definition of terms, brief discussion of research methodology, ethical consideration as well as limitations of the study. This chapter covered research design, sample, conceptualisation, key variables, instrumentation, data collection methods and fieldwork, data management and data analysis. The methodology and the research design direct the researcher in planning and implementing the study in a way that is most likely to achieve the intended goal. It is a blue print for conducting the study (Burns & Grove 2009:745). In addition, Botma et al (2010:40) indicate that methodology pertains to rules and procedures that specify how the researcher must study or investigate what he or she believes must be known.

2.2 QUALITATIVE METHODOLOGY

A qualitative research methodology is a systematic interactive subjective approach used to describe life experiences and give them meaning (Grove et al 2013:7705). In addition, Creswell (2014:4) highlights that a qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. More importantly, qualitative research facilitates the exploration of the depth, richness and complexity inherent to phenomenon (Burns & Grove 2009:51). In this study, a qualitative research process was used which allowed the researcher to explore and

describe the views on preoperative patient education for patients undergoing kidney transplant by nephrology nurses as they experienced it in their own setting.

2.3 RESEARCH DESIGN

A research design is an overall plan for addressing a research question, including a strategy for enhancing the study integrity or strategy that is used to answer a research question (Polit & Beck 2014:390). Furthermore, De Vos et al (2011:307) refer to the design as all those decision a researcher makes in planning their study. The chosen methodology for this study was a qualitative descriptive design described by Edmonds and Kennedy (2012:133) as a design that include individuals, group narratives stories or specific life events as well as the relationship between individual's stories and the culture certain life events impact the participants story line.

Schmidt and Brown (2011:176) define a descriptive design as design that provide a picture of a situation as it is naturally happening. This design provides an accurate portrayal or account of the characteristics of a particular individual, event, or group in real life situations for the purpose of discovering new meaning, describing what exists, determining the frequency with which something occurs and categorising information (Grove et al 2013:26). In addition, Thyer (2010:120) indicates that a descriptive research often targets a population and /or a phenomenon and aims to answer the questions “who, what, when, where and how”, the primary task is aimed at describing phenomenon when it is relatively new or needs to be described. In this study, the researcher adopted a descriptive explorative design for data collection as nephrology nurses were asked to describe the pre-operative patient education for patients undergoing kidney transplant as they experienced it in their unit. A descriptive design was chosen as it was considered as a method that is flexible in the methods that can be used to collect data, often leading to more rapid collection of data and cost saving (Schmidt & Brown 2011:176).

2.3.1 Population

Burns and Grove (2009:42) point out that a population entails to all the elements (individuals, objects or substance) that meet certain criteria for inclusion in a given universe. Brink et al (2012:131) refer to the population as the entire group of persons or objects that is of interest to the researcher that meets the criteria the researcher is

interested in studying. Furthermore, Depoy and Gitlin (2013:161) highlight that a population has three elements, namely, the population must possess all the characteristics that the investigator has identified as inclusion criteria, must not possess any of the characteristics that the investigator has defined as exclusion criteria and must be available at least in a theory, for selection in the sample. The populations for this study were registered nephrology nurses working in the Nephrology Unit in King Abdulaziz Medical City, Riyadh, Kingdom of Saudi Arabia.

There were at least thirty-five (35) nurses in the Unit; both male and female nurses were included in the study. These nurses worked in the Nephrology Unit for a period of at least one year and had nephrology experience.

2.3.2 Sampling and sampling technique

Botma et al (2010:274), Depoy and Gitlin (2013:161) concur that the process of selecting a subgroup or sample is called sampling. Burns and Grove (2009:42) define a sample as a subset of population that is selected for a particular study. Sampling defines the process for selecting a group of people, events, behaviours or other elements with which to conduct a study. Polit and Beck (2014:51) argue that researchers collect data from a sample, and that researcher's sampling plan specifies how the sample will be selected and how many subjects will be there.

Participants selected to participate in the study were nephrology nurses working in the Nephrology Unit. The rationale for selecting this sub-group was that they could accurately represent the population and the researcher was able to draw accurate conclusions about the population by studying a smaller group of elements (Depoy & Gitlin 2013:161). The precise number of participants were not known prior to data collection. Accordingly, the sample size was determined by the saturation of data during the interview (Polit & Beck 2012:62). Qualitative researchers use principle of data saturation that occurs when themes and categories in the data become repetitive and redundant, such that no new information can be gleaned by further data collection (Polit & Beck 2012:62). Typically, qualitative studies using in-depth interviews reach saturation between 12-15 participants (Young 2012:48).

A sampling technique used was a qualitative purposive non-probability sampling technique. Depoy and Gitlin (2013:161) define a purposive sampling as a technique that involves the deliberate selection of individuals or elements by the researcher based on predefined criteria. Polit and Beck (2008:763) indicate that a purposive sampling is a non-probability sampling method in which the researcher selects participants based on personal judgment about which one will be most informative. Therefore, a purposive sampling technique allowed the researcher to handpick nephrology nurses who were able to provide rich strength descriptions of their views until saturation of data (Brink et al 2012:141; Stommel & Wills 2004:302).

The participants were selected because they were considered to have rich information regarding pre-operative patient education given to patients before kidney transplant and that they critically made their point clear and understood the purpose of the study.

2.3.3 Research setting

Polit and Beck (2012:743) assert that a research setting is the physical location and conditions in which data collection takes place. There are 30 hospitals in Riyadh. The study was conducted in the Nephrology Unit in King Abdulaziz Medical City, Riyadh, Kingdom of Saudi Arabia. A convenience sampling was used to select the hospital as the researcher worked in the hospital and had access to the eligible population of nephrology nurses. Convenience sampling is a process whereby the researcher is taking a sample of whoever is available to participate in the study (Clark, Riley, Silvas, Wilkie & Wood 2000:87). For the purpose and objectives of this research, the research was conducted in the Nephrology Unit where nurses took care of patients before and after kidney transplant.

2.3.3.1 Recruitment strategy

The researcher first obtained permission from the Nurse Manager of the Nephrology Unit to recruit nephrology nurses who have been involved in taking care of patients before and after kidney transplant. The non-probability sampling method as described above was used to recruit participants who can be able to participate in the study. Once identified, the potential participants were contacted to determine their eligibility and interest in

participating in the study. The researcher approached the nurses, asked permission and was able to setup appointment with them.

2.3.3.2 Sampling criteria

Grove and Ciper (2016:25) state that sampling or eligible criteria include a list of requirements or characteristics essential for membership in the target population. Gray et al (2013:353) point out that sampling criteria may include characteristic such as the ability to read, to write responses on a data, collection instrument or forms and to comprehend using English language and that age limitation are often specified.

Furthermore, Gray et al (2013:353) maintain that sampling criteria should not become so restrictive that the researcher cannot find adequate number of study participants. Sampling criteria was based on the research problem, purpose, design, and practical implications of the research topic. Access to the participants was through the researcher's knowledge of nursing staff and previous knowledge of the Nephrology Unit. This was sufficient to allow the researcher to identify participants who were willing to give a clear description of their experience of pre-operative patient education for patients before kidney transplant to the researcher through in-depth interviews.

2.3.3.3 Inclusion criteria

Grove and Ciper (2016:25) highlight that inclusion criteria are the requirements identified by the researcher that must be present for an element or participant to be included in a sample. According to Gray et al (2013:353), inclusion criteria are characteristics that a subject or element must possess to be part of the target population. As indicated, participants selected were nephrology nurses working in the Nephrology Unit who had at least one-year nephrology experience. Both males and females aged between 25- 59 years voluntary participated in the study. The rationale for choosing these nurses was that they were able to provide rich source of information concerning pre-operative patient education for patients before kidney transplant.

2.3.3.4 Exclusion criteria

Exclusion criteria is the requirement identified by the researcher that eliminate or exclude participants from being in a sample (Grove & Ciper 2016:25). According to Grove et al (2013:353), exclusion criteria are characteristics that can cause a person or element to be excluded from target population. Exclusion criteria were nephrology nurses with experience less than one year. The reason for exclusion was that the nurses with less than one-year experience still have more to learn in the transplant unit.

2.3.4 Data collection

Polit and Beck (2012:725) define the data collection as the gathering of information to address a research problem. The data collection is the precise, systemic gathering of information relevant to the research sub-problems, using methods such as interviews, participant observation, focus group discussions, and case histories (Burns & Groves 2009:43). Most qualitative studies rely on unstructured or loosely structured methods of data collection (Polit & Beck 2008:371). A Semi-structured individual in-depth interview guide (Annexure 6) was used to collect data. An interview refers to the structure or unstructured verbal communication between the researcher and the participant in which information is presented to the researcher (Burns & Grove 2009:403). In addition, Bloom and Crabtree (2006:317) indicate that in-depth interviews are meant to be a personal and intimate encounter in which open, direct, and verbal questions are used to elicit detailed narrative and stories. Spencer (2012:48) argues that the purpose of interviewing is to allow us to enter into other people's perspective. In-depth interviews were chosen because they provided more detailed information, and also provided more relaxed atmosphere in which to collect information from participants (Boyce & Neale 2006:4).

Participants were emailed two days before an interview to remind them about the appointment and to inform them what to do if something comes up to confirm to save time travelling and waiting. More importantly, data collection took place at a mutually agreeable location and at a time and place that was convenient for both researcher and participants. On the day of interview, the participants were given the consent form before commencement of interview process to indicate whether they agree or do not agree to participate in the study. Permission was obtained from the participants to record the interviews.

Participants were orientated because of the likelihood of uncertainty about the process of interview. Tracy (2012:159) argues that good interviewing is more than just asking questions, it is creating logistically feasible and comfortable interaction that will encourage and engage honest and fun dialogue. Practical aspects of the research such as the use of tape recorder, the interview venue and the time to be devoted in the interview were explained and discussed. One grant tour open-ended question was used for the interview. Probing and clarity questions were used to explore and gain deeper understanding of issues concerning participant's responses as well as to clarify statements and inquire about the intersection of pre-operative patient education for patients before kidney transplant (Spencer 2012:48).

2.3.4.1 Data collection procedure

The audio equipment was tested in the proposed location before the interview (Tracy 2012:160). Effective audio recordings require that a voice is audible, and the recording technology is functioning correctly. All interviews were audio-recorded and transcribed with field notes as backup in case of faulty recording equipment. Interviews took place in a private room behind closed door with the sign on the door labelled "DO NOT DISTURB" to minimise interruptions. One interview was estimated to last at least 20 to 35 minutes and face-to-face interaction was allowed in order to capture non-verbal cues (Maree 2007:92). A colleague who is a registered nurse assisted the researcher by operating the audio tape recorder throughout the interviewing process. Participants were recruited and interviewed until common themes begin to emerge and evidence of data saturation was evident (Spencer 2012:49). Soon after the audio-recorded interview, the researcher listened and checked audibility and completeness of the interview session.

2.3.4.2 Pilot study

Richards and Hallberg (2015:128) define a pilot study as a small-scale study or smaller replica of a study to test the proposed study design or methodology. Daniel (2010:757) asserts that the pilot test assists the research to determine if there are flaws, limitations or other weaknesses within the interview design and will allow the researcher to make revisions prior to the implementation of the study. The interview guide was subjected to a pilot test with participants having similar interest as those that participated in

implemented study, to determine if the questions worked as intended and what revisions needed to be made (Daniel 2010:757; Maxwell 2013:101).

The pilot study was conducted in the Nephrology Unit as it was convenient for the researcher to gain access and identify participants to be involved in the study. Two nephrology nurses who have been involved in taking care of patients before and after kidney transplant were interviewed. Interviews were transcribed verbatim. The pilot study assisted the researcher to identify any areas in the interview as well as the recording device that needed attention. The two nurses in the pilot study were not part of the main study.

2.3.4.3 *Researcher as instrument*

Spencer (2012:46) indicates that an essential characteristic of a qualitative research is the researcher as primary instrument for data collection and analysis. It is through the researcher's facilitative interaction that a context is created where informants share rich data regarding their experiences and life world (Chenail 2011:255). The researcher was the main instrument for data collection using a pen and notebook to document field notes. A colleague who was a registered nurse assisted the researcher by operating the audio tape recorder throughout the interviewing process as indicated above. During interviews, the researcher used bracketing process, which refers to putting preconceived beliefs and opinions about the phenomenon under investigation aside (Brink et al 2012:122). The researcher remained neutral with respect to belief or disbelief in the existence of the phenomenon (Streubert & Carpenter 2011:77). This allowed the truth to show itself and determine the trustworthiness of the result.

2.3.5 Data analysis

Grove et al (2013:46) define data analysis as the process that reduces, organises and gives meaning to the data. De Vos et al (2011:399) posit that data analysis in qualitative studies is a process of inductive reasoning. It is done during and after data collection. In analysing the data, the researcher followed the steps of quality data analysis (Creswell 2013:182). These steps are discussed in the paragraphs that follow:

2.3.5.1 Organising the data

Creswell (2013:182) highlights that researchers typically organise their data into computer files, besides organising files researchers convert their files to appropriate text units such as the word, a sentence and entire story for analysis either by hand or computer. The researcher familiarised herself with the data by reviewing data collected through interview notes. The data was organised and prepared for analysis by sorting and arranging it if different sources of information is used. The data collected through audio tapes was transcribed verbatim and typed into computer Microsoft Word program.

2.3.5.2 Reading and memoing

The researcher selected two or three transcripts and read through it several times while listening to the audio recording related to the particular script in order to obtain the substance of the information and to know the meaning derived from the data and how the information relate to the researcher's question. This was done at least two or three times for each transcript.

2.3.5.3 Describing, classifying and interpreting data into codes and themes

Creswell (2013:184) indicates that in this step, the researcher builds detailed descriptions, develop themes or dimensions and provide interpretation in light of their own views or views of perspectives in the literature. The researcher described classified and interpreted data into codes and themes. The data was organised into chunks of information and written in a word that represents a category in the margin. In addition, categories were reduced by grouping together those that relate to each other and combined them into five (5) or six (6) themes that were used in the end to write narrative. This was subsequently followed by giving detailed descriptions of the setting or the people involved as well as descriptions of the categories or themes for analysis. The researcher then presented the result of analysis in a form of narrative passage to convey the findings of the analysis

2.3.5.4 Interpreting the data

Creswell (2013:184) elucidates that researchers interpret the results of analysis in order to make sense of data. This was done by development of codes, formulation of themes

from codes and then organisation of themes into larger units of abstraction based on hunches, insight and intuition. Data were then summarised by using codes where data were compared to establish relationship among different categories. Themes were then consolidated to develop meanings.

2.3.6 Measures to ensure trustworthiness

The researcher used a framework by Lincoln and Guba (1985 as cited in Polit & Beck 2008:539) to enhance the trustworthiness.

2.3.6.1 Credibility

Credibility refers to confidence in the truth of the data and interpretations of them (Polit & Beck 2014:323). Credibility suggests that the results should be evaluated from the point of view of the participants (Lichtman 2010:228). Young (2012:61 cited from Locke et al 2007) cautions that one threat to presenting the truth is the researcher's inability to guarantee the accuracy and totality of participant's description of the experience under investigation.

Credibility was ensured by using member checking as indicated by (Young 2012:61) that strategies for ensuring credibility finding can be utilised as means of verifying the accuracy of findings. These include peer debriefing and member checking. Participants were asked to confirm the way they actually perceived pre-operative patient education without the fear of losing credibility in the eyes of the managers of the organisation. The study also allowed Unisa supervisors to scrutinise the research methodology. Interviews were recorded, and participants were asked to check if their words matched what they actually intended.

2.3.6.2 Dependability

Polit and Beck (2012:725) postulate that dependability refers to a criterion for evaluating integrity in qualitative studies. Lichtman (2010:228) indicates that the term dependability emphasises the need for the researcher to account for the ever-changing context within which research occurs.

Dependability can be evaluated by the process involved in designing, conducting and analysing findings from the study to show that they are consistent and repeatable (Young,2012:62). An audit trail was used to check the raw data involving tracing and recording of all decisions used to influence the study so that an independent individual can examine the data. Notes were saved for future reference and reflection.

2.3.6.3 Conformability

Haye and Singh (2012:201) indicate that conformability refers to the degree to which findings of the study are a genuine reflection of the participants. According to Polit and Beck (2014:323), conformability is concerned with establishing that the data represent the information participants provided, and that the inquirer does not imagine the interpretations of those data. Credibility was ensured by making sure that findings of the study reflected participant's voices and not the researcher's biases, motivation or perspectives. The researcher acknowledged her biases when they occurred as in qualitative research; biases are acknowledged and recognised as part of research through use of reflexivity (Young 2012:63). The researcher engaged in continuous self-critique and self-appraisal and explained how his or her own experience has or has not influenced the stages of research process as indicated in Maura (2006:8).

2.3.6.4 Transferability

Transferability refers to the extent to which qualitative findings can be transferred to other settings or groups, one of the several models of generalisability (Polit & Beck 2012:180). Transferability also refers to applicability of findings to the other situations and other people (Tappen 2010:160). Purposeful non-probability sampling procedure was used to have detailed description of data from the participants as indicated so that applicability to other context can be considered (Young 2012:62). Findings were contextualised to the hospital under study but were applicable to other groups of patients such as patients undergoing other forms of transplants (liver transplants, heart transplants).

2.3.7 Ethical considerations

The study was guided by the ethical principles on research with human participants such as:

2.3.7.1 *Protecting the rights of the institution*

2.3.7.1.1 *Permission to conduct the study*

Unisa Higher Degrees Ethical Committee approved (Annexure 1) and gave permission to carry out the research. The letter requesting to conduct the study was written to the Ethics Committee in one of the hospital in Riyadh (Annexure 7), permission was also requested from the nursing administration as well as from the unit nurse managers of the hospital under study (Annexure 2 and Annexure 3).

2.3.7.1.2 *Scientific integrity of the research*

The researcher maintained honesty by avoiding duplication of any other work, misconduct such as fabrication, falsification, dishonesty, and plagiarism at all times. Groves et al (2013:188) state that the researcher is responsible for maintaining the integrity of his or her research protocols, results and publication.

2.3.7.1.3 *Protecting the rights of the participants*

- ***Confidentiality***

Confidentiality entails protection of the study participants so that data provided is never publicly divulged (Polit & Beck 2008:750). Confidentiality is also defined as the researcher's management of private information shared by a subject that must not be shared with others without authorisation of the subject (Burns & Grove 2009:213). The participants as well as information and data collected were protected from other people and general reading. Accordingly, information was not shared with people who were not officially and directly involved with the research. Explanation was given to the participants about people who will have access to their data and that their data will be stored safely.

- ***Informed consent***

An informed consent is an ethical principle that requires researchers to obtain the voluntary participation of subjects, after informing them of possible risks and benefits

(Polit & Beck 2012:730). Participants were asked to fill up written informed consent forms (Annexure 4) before the study commenced. Participants were also informed verbally that they were not forced to participate in the study and that they had the right to withdraw at any time.

- *Protecting the rights to privacy*

Grove et al (2013:169) describe privacy as an individual right to determine time, extent and general circumstances under which information will be shared with or without others. The participants were asked to give consent before they participated in the study. Participants were interviewed in a private room in order to protect them from any form of discomfort.

- *Anonymity*

Anonymity entails making use of pseudonyms instead of the participants' real names, ensuring that the participants are not identifiable in print (Leedy & Ormrod 2010:101). In addition, Babbie (2012:65) indicates that anonymity is achieved in research project when neither the researcher nor the readers of the findings can identify a given response with a given respondent. Accordingly, in this study, anonymity was ensured by using numbers to refer to various participants for example Participant five (5). The researcher informed participants that their names and their personal characteristics we're not be known. Publication and reporting of the findings were conducted in such a way that the participants remained anonymous.

- *Voluntary participation and the right to withdrawal*

Klenke (2008:50) indicates that a voluntary participation means that participants are not coerced to participate in the study and that at any time during the research, they may withdraw without penalty. Participants took part in research according to their own free will. Moreover, participants were not coerced to participate in the study. Accordingly, participants were informed that they had the right to withdraw their participation at any time and for whatever reason if they had second thoughts about entering the study. This was stated in a consent form and was also said verbally.

- *Autonomy*

An autonomy as it pertains to research is a fundamental ethical principle that underpins both self-determination and the right of every person to give clear and knowledgeable informed consent (Macnee & McCabe 2008:147). Autonomy also refers to the respect for the inherent freedom and dignity of a person (Welfes 2015:42). Therefore, participants were informed of their rights to make decision to be involved in the research.

- *Beneficence*

Polit and Beck (2008:748) define beneficence as a fundamental ethical principle that seeks to maximise benefits for study participants and prevent harm. The researcher assessed the type, severity and number of risks that the subjects experienced by participating in the study (Grove et al 2013:176). Participants were protected from temporary discomfort by conducting the interviews in a private room. The researcher also ensured that participants were aware about possible questions to be asked.

- *Veracity*

Moule and Goodman (2009:57) define veracity as the ethical principle of telling the truth. The researcher ensured veracity by establishing a trusting relationship with participants. Therefore, honest information was provided to participants.

- *Fidelity*

Welfes (2015:47) point out that fidelity entails faithfulness to promises made and to the truth. The interest of the participants will be placed ahead of the researcher's own interest by not disagreeing with what the participants says and by not showing any signs of boredom during the interview. The researcher maintained loyalty to the participants and the profession as well as to the hospital in which the study was conducted by acting according to the rules stipulated in the consent.

2.4 SUMMARY

This chapter covered the research design, sample and sampling technique used, recruitment strategies applied, instrumentation, data collection procedure, and data analysis. The chapter concludes with the strategies to enhance trustworthiness of the study as well as explanation of ethical considerations. The following chapter will present how data was collected and the process followed during data analysis.

CHAPTER 3

DATA COLLECTION AND ANALYSIS

3.1 INTRODUCTION

The previous chapter covered the research design, sample, instrumentation, procedure, and data analysis. This chapter discusses data collection method and the method used during analysis of data. In addition, the chapter describes how the participants were recruited and interviews were conducted. Polit and Beck (2012:725) define data collection as the gathering of information to address a research problem. Data were collected in this by using semi-structured interview guide with open-ended questions to obtain data relevant to the study. Each participant received the information about the study. These include the description of the research project; the reasons on why participant was chosen; the use of audio recorder in order to give permission in using it; the information would be kept confidential; use of pseudonyms to report the data; storage of data in safe place and that participating in this study was voluntarily and the right to withdraw from the study could be done at any time without any penalty.

3.2 BIOGRAPHICAL PROFILE OF RESEARCH PARTICIPANTS

Fifteen (15) nephrology nurses participated in the study of which fourteen (14) were females and one (1) was a male. The reason for this ratio was that the other male nurses did not meet the criteria to be included in the study. The age of the participants ranged from 25-59 years. Nurses who participated in the study were from five nationalities. The educational level of Participants ranged from diploma in nursing to master's degree. The participants' years of experience working in Nephrology Unit ranged from one (1) year to 20 years. Eight (8) staff nurse two (2) and seven (7) staff nurse one (1) were interviewed. The professional scope and functions of nephrology nurses is according to their professional titles in the Unit. The staff nurse one (1) and two (2) are rendering direct patient care in the Unit.

3.3 PARTICIPANTS' RECRUITMENT

The researcher asked permission from the Nurse Manager of the Unit to interview nephrology nurses who renders direct patient care to kidney transplant patients. The non-probability sampling was used to recruit participants who were willing to participate in the study. Once identified, potential participants were contacted to determine their eligibility and interest in participating in the study. The researcher approached participants and set appointment dates with them for the interviews. Having access to participants was easy owing to the nature of relationship the researcher had with the participants.

3.4 DATA COLLECTION PROCESS

Collection of data was primarily in English. A digital voice recorder was used with the consent of the participants to capture their responses. The researcher observed non-verbal behaviours while also writing field notes. Participation was voluntary, and semi-structured interviews were conducted. The number of participants was determined by the criteria of saturation after not finding new categories of interest. Interviews took place after permission was granted by the nursing authorities as well as after getting ethical clearance to conduct the study. Having access to participants was easy owing to the nature of relationship the researcher had with the participants. Notably, data collection was an exhausting activity as some of the participants had to postpone their appointments because of the business of the unit.

The interviews were conducted in a private room with the signage "DO NOT DISTURB" placed at the door to minimise interruptions. The researcher asked the participants to sign the informed consent form which was the document explaining the study objectives and the voluntary nature of their participation. All explanation of how data were going to be stored and what was going to be done with the results was explained.

The audio-recorder was used with permission from participants. A colleague who is a registered nurse assisted the researcher by operating the audio tape recorder throughout the interviewing process. The interview started with central question on views of nephrology nurses regarding preoperative patient education for patients undergoing kidney transplant. As data collection progressed and categories emerged more emphasis were placed in questions that required more detailed responses. Interviews lasted approximately 20- 35 minutes. Soon after the audio-recorded interview, the researcher

listened and checked audibility and completeness of the interview session. The researcher then thanked the participants for their participation.

3.5 DATA ANALYSIS AND MANAGEMENT

Data analysis is defined as the process that reduces, organises and gives meaning to the data (Grove et al 2013:46). In addition, De Vos et al (2011:399) assert that data analysis in qualitative studies is a process of inductive reasoning. It is done during and after data collection. In this study, the taped recorded interviews were transcribed verbatim and analysed together with the field notes following data analysis spiral approach (Creswell 2013:182). This approach of data management and analysis process follows spiral movement that is circular moving back and forth from processes and up and down with the purpose of getting a sense of volumes of data and immersing in the details of data. These steps are discussed in the paragraphs that follows:

3.5.1 Organising the data

Creswell (2013:182) posits that researchers typically organise their data into computer files; besides organising files researchers convert their files to appropriate text units such as the word, a sentence and entire story for analysis either by hand or computer. Each interview was recorded in a separate file and labelled with the assigned transcript code. Prior to transcription of each interview, the researcher listened to the audiotape recording as an opportunity for analysis (Maxwell 2013:105). Thereafter, the researcher made notes transcribing key words, phrases and statements in order to identify sub-themes and themes. The transcripts and field notes of each interview were organised and coded to electronic folders. Transcribed data were stored electronically as master files and the field notes. For each transcript, the summary sheet was also constructed for the main themes in the research. All interviews files were dated accordingly.

3.5.2 Reading and memoing

Creswell (2013:183) describes that in this loop, the researcher continues analysis by getting a sense of the whole database. Streubert and Carpenter (2011:128) highlight that memoing is informal notes taken by the researcher to capture ideas about the data, emerging theoretical codes and relationships among the codes. The researcher selected

two (2) or three (3) transcripts and read through them several times while listening to the audio recording related to the particular script in order to obtain the substance of the information and to know the meaning derived from the data and how the information relates to the researcher's question. This was done at least two (2) or three (3) times for each transcript and at this time, the researcher became immersed in her study. Data was analysed manually, memos were written as reflective notes in the left margins of interview transcripts to discover possible emerging themes.

3.5.3 Describing, classifying and interpreting data into codes and themes

Creswell (2013:184) indicates that in this step, the researcher builds detailed descriptions, develop themes or dimensions and provide interpretation in light of their own views or views of perspectives in the literature. Furthermore, the data obtained from the interviews and field notes were coded and arranged into themes and sub-themes. Themes were derived from participants' own words and concepts called "emic" categories, one that represents the participants' meanings and understanding (Maxwell 2013:108). The researcher then grouped the categories with similar meanings by highlighting with different colours to establish the meaning of data. Categories were then tapered down to a manageable number of categories and combining them in few main themes. The researcher identified and classified the sub-theme into broader themes. The sense of data was made by interpreting the issues identified and drew up tables of the data according to the themes and sub-themes and interpreted the data.

3.5.4 Representing and visualising data

Creswell (2013:187) points out that this is the final phase of the spiral in order for the researcher to represent the data. The findings of this study were integrated and presented in narrative passages that are summarised by the straight description of preoperative patient education for patients undergoing kidney transplant.

The researcher following the recommendations by Saldana (2009:22) coded data manually and themes as well as sub-themes as presented in Table 3.1 below were identified.

3.6 SUMMARY OF ANALYSIS OF FIELD NOTES

The researcher recorded field notes as the participants' main ideas during the interview in the brief texts to see the constructed patterns. Data analysis helped the researcher to find ideas generated in relation to the objectives of the study. Most of the participants appeared to be relaxed and comfortable during the interviews. Minimal interruptions occurred even though the researcher placed the DO NOT DISTURB sign at the door. Participants appeared to be familiar with the pre-operative patient education given to patients before kidney transplant.

3.7 SUMMARY OF IDENTIFIED THEMES AND SUB THEMES

Table 3.1 Themes and sub-themes

Themes	Sub-themes
Lifestyle modification	Dietary management
	Compliance with infections control
	Medication compliance
Enhanced motivation and better outcomes	Graft survival
	Post-operative recovery
	Trust
	Compliance
Multidisciplinary team approach	Patient and family involvement
	Nephrologist doctor
	Transplant coordinators and nephrology nurses
	Allied services
	<ul style="list-style-type: none"> • Interpreters • Dieticians • Transplant pharmacists
Psychosocial assessment and preparation	Emotional and mental preparation
Patients knowledge assessment	Kidney transplant Surgery
	Outcomes of surgery
Teaching methods	Verbal instructions and discussions
	Brochures
	Comprehension and retention of information
	Demonstration and return demonstration
	Peer mentorship
	Self-care management skills

The table above depicts themes and sub-themes that were identified during data analysis and will be discussed in the paragraphs that follows.

3.6.1 Theme 1: Lifestyle modification

Lifestyle modification is the theme that emerged from participants 'description of what the nurses need to educate patients on before kidney transplantation. Bansal, Dimri and Reddy (2017:198) define a lifestyle modification as consisting of multifaceted approach of diet, exercise and behavioural therapy. Moreover, the life of the kidney transplant patients completely changes after kidney transplantation and there is a specific lifestyle that needs to be adapted post-kidney transplant which the patients should be aware of. Adherence to lifestyle recommendations, taking medication, prevention of infection, self-monitoring of rejection signs, physical exercise, and eating healthy are critical aspects that nephrology nurses need to discuss with the kidney transplant patients before going for kidney transplant surgery. The study conducted by Urstad (2013:25) confirms this by stating that renal recipients are at risk of a diversity of adverse effects after kidney transplantation, specific lifestyle behaviours can help reduce such risks.

Under this theme, three sub-themes will be discussed in the paragraphs that follows. The sub-themes that emerged were dietary management, compliance with infections control and medication compliance. The following statement from one of the participants shows what the participants had to say about lifestyle modification:

The other thing is they need to lead a healthy lifestyle and exercise is important and they need to eat a healthy diet." ... **P14**

"Emphasising as what to expect and what to do pre-operatively starting from hygiene to compliance with medication, to diet." ... **P1**

"We inform the patient that ... uuhhhmmmm ... hand hygiene is very important, personal hygiene is also very important pre-surgery, after surgery and when they go home because ... uuhhhmmmm ... we tell them that microorganism is present everywhere and if there is opportunity for them to go inside the body it will cause infection." ... **P15**

In their study, El-said, Abd-El-Raouf, El-Dahasha and Gad (2017:92) confirm the description of the theme by indicating that the long-term success of renal transplantation depends on many factors, following a healthy lifestyle including proper diet, exercise and weight control, the same as compliance towards recommended behaviours and healthy advises. Rosaasen, Taylor, Blackburn, Mainra, Shoker and Mansell (2017:2) concur with the theme by stating that in addition to understanding the proper timing, administration and ongoing titration of immunosuppressive medication, transplant recipients must know how to adhere to lifestyle changes, hygiene practices and infection prevention.

The section below presents a discussion of sub-themes that emerged from the theme lifestyle modification.

The following sub-themes' discussions emerged from theme lifestyle modification as discussed above.

3.6.1.1 Sub-theme 1.1: Dietary management

In this sub-theme, dietary management participants indicated that it is imperative that patients are educated on diet because after kidney transplant patients need to adjust their diet to keep the new kidney healthy and functioning well. Some of the medications prescribed for the patients may increase the patients' appetite and patients can easily gain weight. Hence, it is important that nephrology nurses explain this information to the patients before the patient will go for surgeries. El-said et al (2017:92) support this by illustrating that the kidney transplant recipients are at high risk to develop unwanted weight gain, hyperglycaemia and hypertension. Therefore, renal transplant recipients are required to comply with recommended lifestyle behaviours such as regular physical exercises, beneficial eating habits and calorie intake. The following excerpt illustrates some of the participants' descriptions of this sub theme:

"I'm telling them that it should be ... they should be precautious to what kind of habit and what kind of diet that they are having." ... **P4**

"The diet also their nutrition like that, you have to educate them, and you can ask help from the uuhhhmmmm nutritionist, the dieticians to educate them."... **P6**

“Patients their sugar level is always high, this is because of medication prednisolone. So, we can add this ... uuhhhmmmm ... this diabetic education, dietician can come in postoperative, I mean we can tell the doctor, “Doctor maybe we can have this diabetic educator or this dietician to come and help us.”... **P10**

Danovitch (2012:19) agree with what the participants had to say by stating that the nutritional management of the renal transplant recipient is an important determinant of outcomes in terms of both morbidity and mortality, and that diet can be used to prevent and ameliorate many transplant-related complications. Urstad (2013:25) also concurs with the above descriptions from the participants by pointing out that renal transplant patients are advised to be aware of eating habits and calorie intake. In their study, Ponticelli and Craziani (2012:879) reveal that weight gain is common in renal allograft recipients and maybe associated with hypertension, hyperlipidaemia and or glucose intolerance or overt diabetes. Therefore, to prevent all these complications, patients should follow diet regimens based on low fat and normal low-calorie intake. Some programmes mandate that patients must demonstrate efforts to lose weight before they are actively listed for transplant. Since many patients gain weight after transplantation, recipients should be strongly urged to incorporate routine cardiovascular exercises into their post-transplant life (Weir & Lerma 2014:179).

Johnson, Feehally and Floege (2014:1155) also assert that the overweight or obese patient is more likely to develop new onset diabetes after transplantation which can adversely affect graft survival. Therefore, potential kidney transplant recipients with obesity should be advised to lose weight as a means to decrease this risk before transplantation. Kopple, Massry and Zadeh (2012:563) also concur with what the participant revealed by indicating that nutritional challenges changes over time post-kidney transplant. Once the kidney function is restored and surgical recovery is complete, dietary attention to avoid excessive weight gain is frequently required as the effects of steroids, resolution of uraemia and dietary freedom as compared to dialysis all contribute to enhanced appetite and overeating.

The authors' further underscore that consumption of contaminated food poses greater threat to kidney transplant recipients and avoidance requires specific nutrition education. Hence, it is important that nephrology nurses provide this important information to the patient before they will go for surgery.

3.5.1.2 Sub-Theme 1.2: Compliance with infections control

Compliance with infections control is the sub-theme that emerged as participants describe the pre-operative education given to kidney transplant before kidney transplant surgery. Butcher, Bulechek, Dochterman and Wagner (2013:231) describe infection control as the process of minimising the acquisition and transmission of infectious agents. Preoperatively, patients should be educated on the importance of preventing respiratory infections as lowered immune system caused by medication increases the renal recipients' risks for infection. Furthermore, Lerma and Rosner (2012:427) highlight that infection is a common and significant source of morbidity and mortality in the kidney transplant population. These authors also mentioned that the United States renal data system reports that infection was the second most common cause of death with a functioning graft among kidney transplant patients between 2004 to 2008.

Swearingen (2015:220) maintains that all transplant recipients must take drugs that suppress their immune system to prevent graft loss. These authors further elaborate that owing to taking large doses of immunosuppressive agents, transplants recipients' immune response to infectious agents will be muted and infections are therefore potential life threatening in an individual that is immunosuppressed. This is illustrated in the following verbal extractions from some of the participants' description of the subcategory:

“We also educate the patient about hygiene because they can have this ...
uuhhhmmmm yeah ... infections.” ... **P3**

“Try to emphasise also to them that they need to avoid crowded areas.” ... **P1**

“In the hospital, if there are visitors, they should wear mask and they will not go to places that there are lots of people because they are prone to infections.” ... **P6**

“We don't know maybe some visitors have these coughs, colds and patient can easily catch all those bacteria's.” **P3**

“We tell them to hand wash before and after going to the bathroom.” ... **P13**

Urstad (2013:25) supports the participants' idea by emphasising that when being exposed to people with contagious disease, kidney transplant patients need to take extra hygienic precautions. Avery and Michaels and the AST infectious diseases community of practice (2013:305) also support the subcategory by stating that transplant patients must avoid close contact with persons with respiratory illness. However, if contact is unavoidable, both the infected person and the transplant recipient should wear standard surgical mask. Patients should avoid crowded areas such as shopping malls, subways and elevators where close contact with respiratory illness is likely.

Swearingen (2015:221) also supports the participants' idea by pointing out that kidney transplant patients should avoid exposure to individuals known to have infections and to wash their hands frequently as consistent hand hygiene is proven methods of removing pathogens from the skin that could cause infections, especially in patients whose immune systems are compromised. Furthermore, Veroux (2012:261) also supports the findings of this study by suggesting that prevention strategies for infection should not be limited to medicine and vaccinations, a thorough education of the kidney transplant recipients and his or her family is very important preventive tool. These authors further maintained that pre-transplant classes and printed materials are helpful and should include information on hand washing/hand hygiene, environmental exposures activity to avoid, food safety handling, food borne pathogens pets, and travel.

The recommendations after kidney transplantation for safe living after kidney transplantation are based on general recognition that solid organ transplant recipients are at great risk of infection during the first six months after transplantation or when their immunosuppression is augmented for episodes of rejection (Veroux 2012:261). Based on the information provided, it is important that kidney transplant patients should be instructed to be alert to signs and symptoms of common infections that can occur before going for kidney transplantations so that they can be cautious in reporting the indicators of infections to health care professionals.

3.5.1.3 Sub-theme 1.3: Medication compliance

Medication compliance is the other sub-theme that participants identified as important in educating kidney transplant patients before undergoing kidney transplant. Urstad (2013:25) defines compliance as the extent to which a person's behaviour in terms of

taking medication coincides with health care advice. Benefield (2014:184) also defines medication compliance as the extent to which patients take medication as prescribed by their health care providers. In addition, Giddens (2015:48) defines medication compliance as the extent to which a patient acts in accordance with the prescribed interval and dose of a dosing regimen. Shaw and DeMaso (2010:332) indicate that treatment adherence, especially to immunosuppressant medication, is of utmost importance in the transplant population and has been found to be significantly related to acute and chronic rejection and graft loss. The following statements from some of the participants confirm the description of the above sub theme:

“Discuss preoperatively because medication needs compliance.” ... **P11**

“When we talk about medication...they have to take their medication as what the doctor has prescribed ... like the time ... not when they want to take it on their own convenience.” ... **P3**

“Emphasising that there are certain medications that we need to take especially immune suppressants.” ... **P1**

“Medication ... because there is a lot of it, immunosuppressant medication, supplements like vitamins ... uuhhhmmmm ... we have to make the patient understand that they need to comply with the medication for the transplanted kidney to last longer.” ... **P4**

Scully (2014:344) concurs with what the participants mentioned by pointing out that kidney transplant patients require lifelong immunosuppression to prevent a T-cell alloimmune rejection response. Moreover, Urden, Stacy and Lough (2017:898) support the participants' description of the sub-theme in their study by pointing out that adequate education of the patient and family regarding importance of taking the medications as instructed is of paramount importance. In the study by Fogel and Greenberg (2015:1438), it is indicated that the medication regimen that patients are prescribed after transplant is often complex and daunting to follow, the threat of organ rejection and the need for powerful immune-suppressants mean that the patients must be able to take their medication as prescribed in order to maintain their health.

In agreement with the above information, Vicari, Repper, Basiles, and Young (2009:277) also maintain that kidney transplant requires lifelong immunosuppression with agents that prevent allograft rejection and that patient adherence to this medication regimen is pivotal for allograft survival. These authors further elaborate that a consistent and comprehensive approach to education and discharge teaching is a key component of adherence and attainment of therapeutic level. Therefore, it is important for the nephrology nurse to educate patients on importance of taking the medication as prescribed to avoid kidney rejection.

3.6.2 Theme 2: Enhanced motivation and better outcomes

During the interviews, participants kept referring to enhanced motivation and better outcomes, especially when asked about the impact of education on patient care. Hart (2015:208) defines motivation as the direction and intensity of one's efforts towards something. Sadeghi, Barzi and Mikhail (2012:71) define an outcome in health care as something that follows as results or consequences; they are the end results of care delivered to individuals and society. When patients are well educated on their conditions, they become motivated and they will understand what goals they need to work towards in order to improve their health with better outcomes. Patients will be motivated to reach certain health goals and be active with their treatment. In supporting this assertion, Himmelfarb and Sayegh (2010:28) underscore that educated patients are more likely to take an active part in their care with better outcomes noted. This is indicated on the following statements from some of the participants:

“Patient will be more ... uuhhhmmmm ... active with their treatment.” ... **P3**

“... Uuhhhmmmm ... this will give ... uuhhhmmmm ... better quality of life he can go to work or study and do whatever he wants.” ... **P15**

“They know the outcome; they know the ... uuhhhmmmm (...) what is the word? Uuhhhmmmm ... they know how is the life after having a new organ, so they will always take care of themselves.” ... **P9**

Bastable (2016:164) supports the participants' description of the theme by indicating that in patient teaching, a nurse offers positive perspectives and encouragement that shape

the desired behaviour towards goal attainment. The author further elaborates that by ensuring that learning is stimulating, making information relevant and accessible and creating an environment conducive to learning, nurses can enhance patients' motivation to learn. Weinstein (2014:340) also affirms the theme by stating that clinicians and health researchers have noted that patients had better outcomes when they became actively involved in their care and that when practitioners support patient psychological needs, the quality of patient motivation is enhanced, and their welfare improves.

Lilley, Snyder and Collins (2016:106) also concur with the participants' description of the theme by emphasising that patient education maybe one of the more satisfying aspects of nursing care because it is essential to improved health care outcomes. These authors further allude that in the current era of increasing acuteness of patient conditions and the need to decrease length of stays in hospitals, patient education and family teaching becomes essential to effectively and efficiently meet the outcome criteria. Grossweiler (2012:2) argues that with proper education and awareness of expectations of surgical procedure, the patient is based on the information provided it is clear that the patient receives enough education before going for surgery so that they will be motivated to work towards achieving intended goals with better health care outcomes. The following discussions are based on the sub-themes that emerged under Theme two (2) as discussed above.

3.6.2.1 Sub-theme 2.1: Graft survival

Graft survival is the sub-theme that emerged from the theme enhanced motivation and better outcomes. JanBen and Opelz (2013:164) point out that graft survival means that the patient is not back on chronic dialysis. Howell (2016:47) indicates that a graft survival appears to be more important than life itself to kidney transplant recipients. Therefore, it is important for the transplant patient to make sure that their graft is well taken care of after transplant. This information must be given to the patient before going to theatre. The following descriptions of the sub-theme were extracted from some of the participants. Patients have to be made aware of the importance of the graft as the participants indicate it when saying:

“He will not come for dialysis later three times a week and spend like 4-6 hours in the hospital.” ... **P15**

“Transplanted kidney will function as long as you are living.” ... **P4**

“But if they are well educated, the transplant, uuhhhmmmm ... graft will definitely last”... **P14**

In their study, Cooper and Gosnell (2014:493) support the descriptions of participants' idea by mentioning that a successful kidney transplantation prolongs and markedly improves quality of life freeing the patient from restrictions. Garden, Bradbury, Forsythe, and Parks (2012:451) also mentioned that the optimal management for patients with end stage renal failure is kidney transplantation. It both improves quality of life realising patient from the limitation of dialysis and increase survival.

Lewis, Driksen, Heitkemper, Bucher and Calmera (2015:1190) also support the participants' description of the sub-theme by pointing out that kidney transplantation is extremely successful with one-year graft survival rates of about 90% for deceased donor transplant and 95% for live donor transplant. In addition, Dahlin, Coyne and Ferell (2016:108) concur with the findings of this study when asserting that for patients with end stage renal disease, organ transplantation can provide quality of life and longer survival rates than haemodialysis can do. These authors further elaborate that patients who are unable or unwillingly adhere to lifelong regimens of immunosuppressant medication face risks of graft rejection. Therefore, it is very important that patients get enough education prior to being transplanted so that they will be able to take care of the newly transplanted kidney.

3.6.2.2 Sub-theme 2.2: Post-operative recovery

Post-operation recovery is also the sub-theme participants mentioned as one of the effect that patient education has on patient care. Furthermore, post-operation recovery is defined as a complex and multidimensional process that involves multiple domains including physical, physiological, psychologic, social, and economic aspects (Lee, Tran, Mayo, Carli & Feldman 2014:211). If patients received proper education before surgery, they tend to comply with medical regimen and they recover quickly post-surgery. As

Cooper and Gosnell (2014:55) assert, structured pre-operative teaching positively influence pre-operative recovery. Accordingly, Aschenbrenner and Venable (2009:209) highlight that nurses should provide preoperative teaching to help patient anticipate the surgery and anaesthesia without excessive fear and assimilate routines that will aid postoperative recovery. The following verbal extraction from the participants describes the idea about the sub-theme:

“... That will help the patient to recover early.” ... **P16**

“If patients received education, they will be more cooperative and more ready for surgery with less and better improvement after surgery because if they are more cooperative, they will listen to the ... uuhhhmmmm ... instructions they will get up early they will like follow instructions of the nurse and the doctors, this will improve the whole conditions of the patient.” ... **P15**

“If the patient received education ... uuhhhmmmm ... the patient will not have, or there will have less complication after surgery.” ... **P3**

Itisha and Manu (2016:285) affirm what the participants had to say about the sub-theme by stating that patients who received structured pre-operative education compared to patients who do not have improved outcomes. These outcomes included less patient anxiety, reduced postoperative complications such as atelectasis and decreased need for analgesics and more rapid recovery as indicated by earlier discharge and return to work and normal daily activities.

In their study Fink, Diener, Bruckner, Muller, Paulsen, Keller, Buchler, and Knebel (2013:271) also concur that patients who had received pre-operative information required less analgesia and recovered faster than those who had not. These authors report that a meta-analysis of 191 studies focusing on how psycho-educational interventions influence recovery showed a positive effect on pre-operative patient education on post-surgical pain, psychological well-being, anxiety, and satisfaction. As Lewis, Dirksen, Heitkemper and Bucher (2014:323) indicate, preoperative teaching increases patient satisfaction and may reduce preoperative fear, anxiety and stress. Teaching may also decrease the development of complications, the length of hospitalisation and the recovery time after discharge. Ong, Miller, Appleby, Allegretto, and Gawlinski (2009:104) also support the participants' idea by pointing out that the evidence supports the benefits of pre-operative

teaching reducing anxiety, complications and improving recovery. Based on the above information, it is important that kidney transplant patients receive extensive education on all matters related to kidney transplant before surgery in order for them to recover quickly after kidney transplant surgery.

3.6.2.3 Sub-theme 2.3: Trust

Trust emerged as the sub-theme when participants described how patient education improves patient care. Said (2013:3) defines trust as a confidence in and reliance upon others whether individuals, professionals or organisations to act in accord with accepted social, ethical and legal norms. Participants mentioned that if nurses give patients comprehensive, but understandable education preoperatively, there would be trust between nurses and patient, which will help in improving care post operatively. Lilley et al (2016:106) affirm this by stating that patient education has been identified as a valued and satisfying activity for the professional nurse as the nurse develops therapeutic relationship and the trust of the patient, caregivers and family. Some of the participants indicated this in the verbal description of the theme below:

“Because as a nurse, if the person doesn’t ... uuhhhmmmm ... trust their nurses even how articulate you are to teach them, they will not believe in you. So, I make sure that ... uuhhhmmmm ... my patient not only for transplant but with other patient, I make sure that I ... uuhhhmmmm ... I gained their trust, that they believe whatever I will tell them.”... **P4**

They will develop rapport with them and they will have like...uuhhhmmmm...uuhhhmmmm...what do you call this one? Uuhhhmmmm they will have confidence, or they will have like trust to you.” ... **P15**

“I introduce myself to the patient so that I can...uuhhhmmmm... build...Uuhhhmmmm... the patient will have a trust in me about the education.” ... **P16**

Williams (2016:4) supports the sub-theme and the quotations by pointing out that establishing a good nurse-patient relationship is necessary to gain patient trust so that patient education and other communications are well received. The sub-theme is further supported by Said (2013:3) by illustrating that the most important part of nursing is the

nurse- patient relationship, which is essential to nursing practice and one of the most important in this relation is trust. Tepper and Tepper (2014:332) also support the findings of this study by asserting that trust between the patient and their providers is the most important factors in treatment plan success. Therefore, the nurse can support this trust by facilitating communication through education to answer questions and providing easier availability to answer questions that may occur.

Burton and Ludwig (2014:125) maintain that at the heart of the relationship is trust. More importantly, nurses establish a trusting relationship with their patients by what and how they communicate with them. These authors further elaborate that when patients understand what is happening and have someone to trust, it empowers them to face the emotional and physical demands of illness and allow them to participate more fully in their care. Therefore, it is important to ask the nurses that are well-known to the patient to give pre-operative health education.

3.6.2.4 Sub-theme 2.4: Compliance

Compliance is the sub-theme that came up when participants described that kidney transplant patients will be compliant with all medical regimens if they have received education before kidney transplant surgery. Accordingly, Majchrzak and Chakravorty (2012:2696) define compliance as a one-directional relationship of patients unquestioningly following what a physician tells them. Compliance with all medical regimens is needed for patients' post-kidney transplant surgery in order to ensure graft survival.

As Morris and Knechtle (2013:62) indicate, after transplantation, compliance should be uppermost in the minds of clinician teams evaluating kidney recipients as non-compliance with both medication and clinical follow-up is among the most distressing and devastating causes of graft loss. Johnson et al (2014:1155) also avert that compliance with the post-transplantation treatment regimen is vital to minimise premature graft loss. Nevertheless, predicting compliance can be challenging and maybe based on pre-transplantation compliance such as adherence to dialysis management regimens.

The following verbal description of the sub-theme was extracted from some of participants:

“When you explain all these to the patient, the compliance rate of the patient is good.” ... **P3**

“... The patient will be compliant with what you teach.” ... **P16**

“Ahhhhh ... usually most of the patient they will have compliance, if they knew 100% the things that you teach, for example the basic ... Uuhhhmmmm ... Incentive spirometry.” ... **P13**

Forren (2017:385) supports the sub-theme by highlighting that education increases patient compliance with instructions and improves coping mechanisms for the patient and preparation. Hardin and Kaplow (2015:48) corroborate the sub-theme by asserting that patient education results in increased patient compliance, therefore leading to decreased length of hospital stay. Prokop and Bradley’s (2010:462) findings resonates with what the participants’ responded. They further maintain that the providers’ negotiation of the treatment regimen or management plan with the patient has been posited as an effective way to improve compliance. These authors highlight that patient knowledge about their illness or their understanding about rationale for treatment regimen enhances compliance. Therefore, it is very important that patients get enough education prior to being transplanted regarding importance of complying with medical regimens in order to keep their kidney functioning for a long time.

3.7.3 Theme 3: Multidisciplinary team approach

Multidisciplinary team approach emerged as a theme from the participants’ description of pre-operative education. McHugh and Vallis (2012:63) define multidisciplinary team approach as a process whereby each member of the team contributes to the information base, thereby advancing knowledge about the patient. Lerma and Rosner (2012:327) indicate that the transplant team typically includes nephrologists, transplant surgeons, coordinators, nurses, social workers, and nutritionists. These authors further maintain that individuals from many other disciplines such as cardiology or psychiatry are often consulted in the course of the process.

Hui, Pangka and Yan (2013:20) explain that a multidisciplinary team consists of a transplant surgeon, a nephrologist, a transplant coordinator and a transplant nurse. Participants described preoperative education for kidney transplant as a process that needs provision of information to the patients by physicians, nurses and other multidisciplinary team members directly involved in caring for the patients before and after kidney transplant. The statements below represent the views from some of the participants' description on this theme:

"... I think it should be a multidisciplinary team approach, where in everybody should be involved, starting from the ... uuhhhmmmm ... uuhhhmmmm ... from the ... uuhhhmmmm ... patient coordinators. They should educate the patient first and then everybody like the nurses, even the technicians."... **P12**

"... Transplant coordinators can participate also with regards to education the patient." ... **P3**

"So, if all of us come together and everybody explains their bit, that will be a good thing."... **P14**

The above sentiments resonate with Nonas and Foster's (2009:154) assertion that preoperative teaching by a multidisciplinary team improves patient selection and enables patient to choose the surgical procedure most appropriate for them. Similarly, Marcus (2014:486) concurs with the views of participants by indicating that patient and family education should exist throughout the continuum of care. In addition, Marcus (2014:486) maintains that a team of health care providers should teach the patient and loved ones about the disease management, medications, post discharge management, and advice on when and how to seek medical attention following hospitalisation.

Ong et al (2009:104) argue that optimising outcomes for patients undergoing surgery requires the collaborative and coordinated efforts of the physicians, nurses and allied health personnel. Still, Sarwer and Blankenship (2014:188) also maintain that the participants' description of the theme by pointing out that the goal of each team member should be their commitment to utilise their expertise within their disciplines to optimise patient outcomes and this is achieved through patient preoperative preparation.

Hamlin, Tench and Davis (2011:28) also concurs with what the participants said by pointing out that pre-operative education supports patients by giving a clear and consistent message of the impending surgery from all members of the multidisciplinary health. These authors further aver that teaching the patient to his or her best advantage is the professional obligation of the multidisciplinary team. Therefore, education is a team effort. This requires that when the patient goes to theatre, all members of the multidisciplinary team meet with the patient to provide brief education so that the patient has time to reflect on information given to them and have opportunity to ask questions. The sub-themes that emerged were patient and family involvement, nephrologist doctors, transplant coordinators, nephrology nurses, and ancillary services. The following paragraphs discuss the sub-themes under the main theme as discussed above.

3.7.3.1 Sub-theme 3.1: Patient and family involvement

Patient and family involvement is the sub-theme that emerged from the multidisciplinary team approach theme. Spruce (2015:34) describes patient and family involvement as an active involvement in health care between patients, families and their caregivers. After kidney transplantation, patients are expected to be discharged and go home being fully equipped with aspects related to their post-transplant care. It is the responsibility of the health care team to make sure that patients are well educated before going to surgery. Family members should also be educated so that they will be able to help patients post-operatively. Siegel and Alvaro (2009:301) indicate that the involvement of patient's family is crucial to the success of a transplant. This is illustrated in the following excerpts from the participants:

"Family also should be involved in the education as well" ... **P12**

"... uuhhhmmmm ... and I think it's good also that...uuhhhmmmm ... and the family should be educated." ... **P6**

"We ask the family member to read this one or to explain to the patient."... **P3**

Engelke and Woten (2017:1) support the findings of this study by underscoring that if desired by the patient, it is appropriate for family members and home caregivers to be present during educational sessions. Clarke and Tomlinson (2014:169) further support

the participants ideas by indicating that involving and encouraging family members on care participation can play a significant role in reinforcing the principles of enhanced recovery by helping to instil confidence and providing a means of support when the patient is no longer in direct contact with members of their health care team. Spruce (2015:35) also agrees with the findings of this study by stating that health care professionals must develop and improve communication skills and have resources to be able to work collaboratively with patients and family access and to understand health information. These authors further maintain that clinicians can advocate for the family when patients are unable to participate ensuring that family members are involved in decision-making process when the patient is unable to do so.

Cochman (2013:12) concurs with what was mentioned about patient involvement by stressing that most current models of communication in medical visits acknowledge active patient involvement in the negotiation of expectations and goals and means of achieving them. Falvo (2010:408) concurs with this finding by highlighting that in many instances, directly involvement of the family can enhance communication between the patient and health care professionals as well as providing the patient with a sounding board on which to discuss the pros and cons. In addition, Proctor and Adams (2013:544) also concurs with the description of the sub-theme by underscoring that another link to the success of patient education is family involvement. These authors further maintain that if the patient is being treated holistically, the family plays an integral role in patient wellness, involving family members in patient education efforts provides support and understanding for the patient while managing family concerns about the patient welfare. Against this background, it is important that the health care team members include family members as well when providing information to patients before the patient will go for surgery.

3.7.3.2 Sub-theme 3.2: Nephrologist doctors

Nephrologist doctor emerged as a sub-theme when participants mentioned doctors as being important people in the multidisciplinary team to provide patient with detailed information pre-kidney transplant surgery. Bickerstaff (2011:9) defines a nephrologist as doctor who take care of people with kidney problems. Similarly, Stam (2009:29) defines a nephrologist as a medical doctor who has received specialised training in the diagnosis and treatment of kidney disease. Therefore, nephrology doctors are considered as the relevant people to provide patients with adequate information related to the procedure to

be done, benefits of the procedure and expected outcomes of the kidney transplant surgery.

The following verbal explanations represent what the participants had to say about the sub theme:

“For the doctor to explain about that uuhhhmmmm antirejection medications might cause cancer in the end.”... **P14**

“Pre-operative teaching ...includes not the primary nurse, doctors especially because they are the one who will do the procedures, the complications, they must ... Uuhhhmmmm ... explain everything to the patient.”... **P11**

“... Doctors as well ... The doctors will not rely only for the nurses to do all this job ... they have also to reinforce what the nurses are saying because sometimes the patient listen more to doctors than nurses.”... **P3**

The sub-theme is confirmed by Misra (2015:201) by stating that nephrologist should take the role in the discussion around kidney transplant care as with all aspects of patient management. The author further underscores that nephrologists should organise consultations involving the family and the members of the multidisciplinary team with the consent of the patient and that it is the responsibility of the nephrologist to ensure the patient receives consistent information from all members of the multidisciplinary team. Similarly, Adkinson, Bochner, Burks, Busse, Holgate, Lemanske and O’Hehir (2013:1477) also concur with the participants’ description of the sub-theme. They highlight that physicians have control role in patient education and motivation, and that improved physicians’ patient communication is likely to increase patient involvement and adherence to recommended therapy as well as improved quality of care and health care outcomes. Furthermore, Kimmel and Rosenberg (2014:751) concur with what the participants’ sentiments by indicating that the nephrologist cannot assume that the patient understands the role of the kidneys in maintaining health or what signs and symptoms might develop in an individual patient. These authors maintain that the nephrologist must tailor his or her information delivery based on the patient educational and cultural background and intellectual capacity to integrate complex medical concepts.

Based on the description of the sub-theme by participants and the information provided from different authors, it is clear that nephrologists need to be the forefront members of the multidisciplinary team in providing patient with information before surgery.

3.7.3.3 Sub-theme 3.3: Transplant coordinators and nephrology nurses

Transplant coordinators and nephrology nurses is a sub-theme that emerged when participants described members of the team to be involved in educating the patient before kidney transplant. McKay and Steinberg (2010:194) explain that transplant coordinators are usually registered nurses or nurse practitioners with expertise in kidney transplantation and or kidney disease and dialysis. Brooks and Brooks (2015:113) define nephrology nurses as nurses that specialise in the care of patients who have kidney diseases. These authors further avert that nephrology nurses perform dialysis to patients' renal failure and also perform routine nursing tasks related to the dialysis process.

The Transplant coordinators are regarded as important members of the multidisciplinary team as they are the first people to be exposed to patients during clinic visits. In addition, transplant educators and nephrology nurses work closely with each patient from the time of evaluation before transplant surgery and also make sure that patients are prepared to undergo kidney transplant. Moreover, they communicate with donors, patients and health team members and also provide counselling for recipients and donors to alleviate anxieties and help recipients and donors throughout the procedure. The statements below are an example of the participants' verbal description of the sub-theme:

"I think ... uuhhhmmmm ... education start from the transplant coordinator ... from there they have to give the education from the workup itself not here because here it's like a let's say we are having cadaveric transplant before, that is like a fast, fast education we are doing." ... **P2**

"As, as a primary nurse we are the one who's ... uuhhhmmmm (...) going to teach them every now and then because we are the one, we are the one who is always on the uuhhhmmmm side of the patient."... **P11**

"Maybe transplant Coordinators can participate also with regards to educating the patient."... **P3**

Wei, Cheng and Lin (2016:70) support the above sub-theme. They buttress that transplant coordinators play central role as the networking connecting team members and patients. Therefore, communication efficiency with large multidisciplinary team is increased and responsibilities include patient education, scheduling appointments, completing results, and providing communication with the patients. Hamric, Hanson, Tracy and O'Grady's (2014:119) study also resonate with the sub-theme by highlighting that the role of transplant coordinators is to facilitate the care of the patient in collaboration with multidisciplinary team throughout the transplantation process. In addition, McKay and Steinberg's (2010:194) study also corroborates this finding and concur with the participants' description about transplant coordinators. They maintain that transplant coordinators are fundamental to all aspects of the evaluation, serving as central conduits for education and communication between various activities involved.

Nephrology nurses were also mentioned as being part of the multidisciplinary team approach to ensure that pre-transplant education is delivered to the patient before kidney transplant. Ong et al (2009:104) concur with the participants' description of the sub-theme. They maintain that nurses are in a key position to provide pre-operative teaching and respond to questions and concerns, and that advancement in technology have provided nurses with the opportunity to improve and intensify pre-operative educational strategies. In the same vein, Grossweiler (2012:1) underscores that the pre-operative teaching for the patients involves nursing staff providing education that includes expectations of surgical procedures, medication and food restrictions procedure. Furthermore, Bastable (2016:8) argues that patient-family education is a component of the nurses' role, and that nurses must attend to the education needs of their patients to be sure that they adequately understand the information to promote, maintain and restore their health.

Ghadami et al (2012:157) also corroborate the sub-theme by pointing out that nurses in their educative role can enable the patients through educating them about problem-solving methods and selection of the best solution to preserve their transplanted kidney and consider renal transplant recipient self-management as their first priority towards these patients. Similarly, Ali, Lalani and Malik (2012:12) concur with the description of the sub-theme by pointing out that a teaching role must identify the patient's need of information on every aspect of surgical care. These authors further maintain that nurses should act as leaders of change agents as well as teachers and must be responsible for thorough assessment and education of the patients undergoing surgery. From the

information provided, it is clear that the educative role of transplant nurses and nephrology nurses in a multidisciplinary team is important in educating the patient before kidney transplant surgery.

3.7.3.4 Sub-theme 3.4: Allied services

Allied health services emerged as a sub-theme when participants described their services as being important when educating the patients. Lyons, Lecca and Valentine (2013:3) describe allied services as personnel working towards the common goal of providing the best possible services in patient care and health promotions. Alexander, Mallard, Polston, Fogel and Woods (2016:38) posit that allied health care workers are a larger cluster of health care-related professions and personnel whose functions include assisting, facilitating or complementing the work of health professionals other than specialists in health care system. The following members of the allied services were identified by participants as being important when providing education for kidney transplant patients before surgery, namely, interpreters, transplant pharmacist, and dieticians. The role of each member in educating the patient is based on the following description from the participants:

“If there is ... uuhhhmmmm ... available Arabic speaker around, I will take them with me and I will ask them to explain to the patient.”... **P14**

“We (...) are telling them about the checklist while reading for them of course we are using some interpreter for them to learn. Because (...) there is a language barrier.”... **P4**

“Dietician to come in post-operative, I mean we can tell the doctor. Maybe we can have this diabetic educator or this dietician to come and help us.”... **P10**

“We need to refer them to like dietician or whoever is available for them to treat specific categories and specifically that they need to educate.”... **P14**

“We will call for the discharge pharmacy, we will ask for their help because they are the one who will explain all the medications as I said I am not a native Arabic speaker, so I cannot explain much about the medications” ... **P8**

3.7.3.4.1 *Sub-theme 3.4.1: Interpreters*

Members of the multidisciplinary team are often faced with challenges of providing effective education to the patients when language barrier exists. This requires the help of Interpreters to convey important information to the patients especially in cases where patients cannot speak the native language. Mikkelson and Jourdenais (2015:247) define health care interpreters as language professionals who work within health care. These authors assert that as health care workers, interpreters have moral imperative to help the patient understand and facilitate clear communication between patients and health care providers. A language barrier can have many negative effects in the delivery of health care services such as drug complications, missed appointments and hospital readmissions. Himimelfarb and Sayegh (2010:83) indicate that if the patient does not speak the primary language, translation is essential and ideally a medical interpreter provided by the health care facility to ensure unbiased translation should provide translation.

Alper (2016:17) supports the findings of this study regarding the description of interpreters by pointing out that having a certified interpreter and not merely a family member present is particularly important when interpreting pre-operative instructions. The author further elaborates that having a certified interpreter who is experienced in dealing with different levels of levels of health literacy, culture and different measurement system is beneficial. In their study, Nerenz, McFadden and Ulmer (2009:97) corroborate the sub-category by indicating that a growing literature documents a link between language barriers and poor quality of health status in which research also indicates that this link can be broken by the use of interpreters. The use of interpreters is associated with improvements in the role of follow-up visits in emergency department, patients who needs interpreter services and does not receive them, experience less satisfaction with their health care interactions and are less friendliness than those with interpreters (Nerenz et al 2009:97). The information provided above clearly advocates that interpreters be involved when educating patients before surgery.

3.7.3.4.2 *Sub-theme 3.4.2: Dieticians*

Dieticians continue to be on the forefront in cases of patients with kidney disease. More importantly, dieticians improve quality of patient's life by giving a dietary advice that meets nutritional needs of the patients. Winterfeldt, Bogle and Ebro (2017:51) define dietician as a person who specialises in the knowledge of food and can meet the demand of the medical profession of diet therapy. Moreover, dieticians should work with the multidisciplinary team and should be able to educate health care staff, patients, relatives, and caregivers to improve and share knowledge to empower the patients to manage their own condition safely and effectively. Himmelfarb and Sayegh (2010:83) point out that the kidney transplant patients should receive individualised diet education and counselling. These authors further allude that a dietician should review diet history habits and nutritional health and should advise patient about food choices and meal ideas. Sedej (2016:46) concur with the findings of this study in which the participants reported that a dietician is an important part of the multidisciplinary team providing nutritional support. These authors further maintain that the core responsibility of dietician is to perform nutritional assessment, educate and advice patients by translating scientific information about nutrition into practical advice.

Byham-Gray, Burrowes and Cherton's (2014:197) study resonates with findings of this study regarding dieticians in which participants underscored that adequate nutrition is essential for the wellbeing of kidney transplant patients to minimise nutritional depletion and optimise nutritional status and a complete thorough nutritional evaluation by registered dietician should be performed.

These authors also contend that nutritional therapy should involve routine nutritional assessment, ongoing monitoring of biochemical parameters and individualised patient nutrition.

3.7.3.4.3 Sub-theme 3.4.3: Transplant pharmacists

Transplant pharmacists are important members of the multidisciplinary team as they take important role of educating the patients about medication, which is what the kidney transplant patient requires. Alloway, Dupuis, Gabardi, Kaiser, Taber, Tichy and Weimert-Pilch (2011:1577) define a transplant pharmacist as an individual with specific expertise in transplant pharmacology who actively participates in the medical management of organ transplant recipients and provides direct patient medication counselling. Furthermore,

Maddux and Abramowitz (2012:2) explain that transplant pharmacists possess specialised knowledge and experience in the care of transplant patients.

Kidney transplant patients need extensive information on the importance of taking prescribed medication to ensure survival of the kidney that has been transplanted. Similarly, Maddux and Abramowitz (2012: 2) maintain that transplant pharmacists have been recognised as an essential member of the interdisciplinary team within the context of team care of transplant patients. The authors further maintain that transplant pharmacists possesses unique knowledge in patient and caregiver counselling to optimise adherence and that they have been found to have high impact on increased medication compliance and improved outcomes in transplant patients.

Alloway et al (2011:1577) support the description of participants by pointing out that clinical transplant pharmacists must combine the principles of several subspecialties to be effective team members. Moreover, they need to know how to care for the whole transplant patient not just the new allograft; they assume the role of admission and discharge medication reconciliation, facilitation, planning in conjunction with the nurse co-coordinator, midlevel practitioner, social worker and other members of the patient care team (ibid). Hardy (2014:39) also concurs with the participants' idea by pointing out that pharmacists should spent considerable amount of time discussing the medication history and allergy portion of the patient history.

The author further alludes that when obtaining the medication history, pharmacists should include discussions on current and past use of prescribed medications, over-the counter medications and herbal products. Based on the discussion above, it is clear that involvement of the allied services mentioned by participants is very important when educating patients before they will undergo surgery.

3.7.4 Theme 4: Psychosocial assessment and preparation

Psychosocial assessment and preparation emerged as the theme when participants described pre-transplant education as a need to assess the psychosocial status of the patient in order to determine the psychological preparedness of the patient. *Mosby Dictionary of Medicine, Nursing and Health Professions* (2013:1484) define psychosocial assessment as an evaluation of a person, the community, generally conducted by

psychiatric social workers. Rouse and Prosser (2008:10) indicate that the psychosocial preparation includes assessing and managing anxiety and stress. These authors further maintain that this aspect of preoperative preparation often commences when the patient visit the pre-assessment clinics. Dougherty, Lister and Oran (2015:676) also point out that the psychosocial preparation includes assessing and managing patient stress, patient education and informed consent. By assessing the psychosocial status of the patient during preoperative teachings, the nurse is able to evaluate if the patient will comply with the medical regimens and make decisions about seeking care. The following verbal extraction illustrates the participant description of the category:

“Is to prepare them and to prepare them physically, mentally spiritually.” ... **P9**

“We need to prepare the patient mentally and physically.” ... **P8**

“ ... preparation ... yeah, you need to prepare the patients, emotionally, physically and psychologically ... ”**P12**

Orlando, Remuzzi and Williams’ (2017:43) study corroborates the findings of this study pointing out that all kidney transplant patients should undergo a comprehensive pre-transplant medical and psychosocial evaluation. The authors further state that the emotional and psychosocial stability and support are paramount to success of kidney transplant patients. In addition, Busuttill and Klintmalm’s (2014:399) study also corroborate with the findings of this study in asserting that it is well documented that psychosocial factors influence transplant outcomes. Therefore, it is important that transplant centres provide patient psychosocial support for all transplant patients regardless of psychiatric background or diagnosis. In their study, Weir and Lerma (2014:38) also indicate that the psychosocial evaluation is an important part of the pre-transplant evaluation since these non-medical factors can have an important impact on graft survival.

Shaw and DeMaso’s (2010:331) study also corroborates with the findings of this study when positing that research has demonstrated a strong association between certain psychosocial factors and the post-transplant outcomes. Therefore, the psychosocial assessment plays an important role in evaluating the psychological preparedness of potential solid organ kidney transplant recipients. Srinivas and Shoskes (2010:382) also

concur with the theme by underscoring that careful and comprehensive evaluation of the psychosocial milieu is an integral part of transplant evaluation and the post-transplant follow-up of kidney transplant recipients, psychosocial stressors and psychiatric stressors influence the outcome of kidney transplantation. These authors further allude that close involvement of personnel skilled in the management of psychosocial aspects of transplantation through the continuum of care in the transplant process is essential to ensure durable graft and patient outcomes. Greenberg, Goldberg and Arias (2016:281) also assert that the patient psychological health and the social support system are the key to optimising quality of life and maintaining medical compliance after transplant, which subsequently impacts graft survival and patient morbidity/mortality. These authors further maintain that a clear identification of psychosocial risk factors and intervention to optimise psychological health post-transplant are important aspects of good stewardship of these limited resources.

From the information provided, it is clear that nephrology nurses must make sure that when providing education, the psychosocial preparation of the patients must be taken into consideration. Discussion of sub-theme that emerged from the theme psychosocial preparation follows below.

3.7.4.1 Sub-theme 4.1: Emotional and mental preparation

Emotional and mental preparation is the sub-theme that emerged when participants described emotional and mental preparation as being important when educating kidney transplant patients to assess the level of readiness about kidney transplant procedure. The nurses should be able to assess the mental status of the patient as well as the psychological preparation of the patients as this will play an important role in the long-term of graft survival. This is illustrated by the response from some of the participant as follows:

“It is preparing the patient emotionally, physically before the procedure” ... **P13**

“Pre-operative period, uuhhhmmmm...the preparation yeah ... You need to prepare the patients, emotionally, physically, psychologically and the families also should be involved in the education as well” ... **P12**

“This is like ... uuhhhmmmm ... mentally we are preparing them not to be scared”... **P10**

Phillips (2016:371) concurs with the findings of this study when highlighting that patient teaching produces behavioural changes in patients as they become better prepared both physically and emotionally for the surgical procedure. Brown, Edwards, Seaton, and Buckley (2017:296) concurs with the participants’ description of the sub-theme by indicating that nurses’ role in psychologically preparing the patient for surgery is to assess the patient for potential stressors that could negatively affect surgery. Pascazio, Nardone, Clarici, Enzmann, Grignetti, Panzetta and Vacchiet’s (2010:3586) study illustrates that affective profile in transplanted patients should be examined more extensively to review all facets in their mental and emotional assessment, especially regarding the role played by this emotional pattern in complying with medical treatment which is well known to be clinically critical feature of these patients.

Wier and Lerma (2014:176) also concurs with the findings of this study by highlighting that during the psychological evaluation, the patient’s cognition mental health, psychiatric stability, medical non-adherence, history of substance abuse, eating disorders, and presence of obesity are considered. Patients with unstable psychiatric disease or home situations are at increased risk of graft loss, which can leave them worse off than if they had never been transplanted. Patients with a history of psychiatric disease should be evaluated by specialist to ensure that the disease is well controlled before proceeding with transplantation (Weir & Lerma 2014:38).

Posnick (2013:218) concurs with findings of this study by arguing that individuals who do not have sufficient pre-operative psychological or emotional stability are likely to experience depression, anxiety or panic attacks and to demonstrate difficulty complying with treatment demands during the early postoperative phase. The author further maintains that recognising and addressing patient-specific tendencies before surgery is the best way to limit or mitigate problems after surgery. From the information provided, it can be concluded that emotional and mental preparation of patients is an important factor to be considered before the patient will go for surgery.

3.7.5 Theme 5: Patients knowledge assessment

Patients' knowledge assessment emerged as a sub-theme when participants described their understanding of pre-education given to kidney transplant patients. This resonates with Rosaasen et al's (2017:2) definition of knowledge as a proximal health care outcome that may impact distal outcomes such as decreased morbidity and mortality and decreased health care expenditure. Nurses and other health care team members should first assess the knowledge of patients regarding the disease and surgery before undergoing kidney transplantation. This theme is illustrated in the participants' verbal descriptions below:

"It should be ... uuhhhmmmm ..., complete assessment of the knowledge of the patient."... **P4**

"Patient should be educated for what is to be going be done to them or what is the procedure."... **P2**

"Just for us to know how much is the level of understanding about this transplant."... **P9**

In their study, Hardin and Kaplow (2015:48) indicate that patient education and interview helps the nurse to evaluate patient and family knowledge as well as determine educational needs related to the planned procedure. Similarly, LeMone, Burke, Dwyer, Jones, Moxham and Searl (2015:928) also support the theme by indicating that during preoperative care nurses should assess knowledge and feelings about the procedure answering questions and clarifying information as need. The sub-themes that emerged were *knowledge of kidney transplant surgery and knowledge regarding outcomes of surgery*

The next section presents a discussion of sub-themes that emerged from the theme patients' knowledge assessment.

3.7.5.1S Subtheme 5.1: Kidney transplant surgery

Knowledge of kidney transplant surgery is a sub-theme that was identified by participants as being most crucial when educating kidney transplant patients before kidney transplantation. Patients who choose to go for kidney transplantation should be well

educated about the type of surgery that is going to be done to them. Informing patients about the type of procedure going to be done on them minimises questions being asked by the patients and clear doubts about the surgery. Moreover, patients will know that the kidney provided to them is precious and it is important for them to take care of it. The statements below represent what some of the participants had to say about the sub-theme:

“Patient to tell us something about ... uuhhhmmmm ... uuhhhmmmm ... the operation.” ... **P16**

“Like when they do the transplant workup, itself they should know that ... uuhhhmmmm ... what, what will be happening after the surgery.”... **P5**

“Patient should tell about what kind of surgery he will go for.”... **P15**

In their study, Rosaasen et al (2017:132) reveal that the patient’s knowledge is very important at every interface of care. The authors further maintain that lack of knowledge regarding kidney transplantation is associated with decreased access to transplantation whereas improving patient knowledge may influence the likelihood of successful transplantation. Colwell, Goldberg and Carmel (2004:208) also support the sub-theme by indicating that it is important to know what the patient has been told and the understanding they bring of the surgery to the education. Similarly, Orlando et al (2017:614) further support the findings of the study by pointing out that patients and families must understand and accept the nature of the acute surgical procedures as well as the chronic long-term medical consequences and requirements. In the same vein, Andrasik, Goodie and Peterson (2015:392) concur with the findings of this study by asserting that a patient’s knowledge of transplant should be assessed, including familiarity with success rate, risks and benefits and length of time of hospitalisation and recovery.

3.7.5.2 Sub-theme 5.2: Outcomes of surgery

Assessment of knowledge regarding outcomes of the surgery is the sub-theme that emerged as participants described pre-operative patient education for kidney transplant patients. *Mosby Dictionary of Medicine, Nursing and Health Professions* (2013:1301) defines outcomes as the condition of a patient at the end of therapy or a disease process,

including the degree of wellness and the need for continuing care, medication, support, counselling, or education. When nurses are educating the patients, they should be able to determine the knowledge regarding the outcomes of the surgery to be performed. Most of the kidney transplant patients might expect the kidney to be functioning immediately after transplant surgery and might be frustrated if they do not see the kidney producing urine after they have been transplanted. This requires that nurses and other health care team members give the patient sufficient information regarding the outcome of surgery. The sub-theme is described in the below statements from some of the participants:

“Is the need to know about the expectations and the outcome after the transplant.”

... **P14**

“They were taught on what to expect ... uuhhhmmmm ... post-operatively and what to expect ... uuhhhmmmm ... even intra-operatively” ... **P1**

“They should be educated for, what is to be going be done, to do with them or what is the procedure, what is the advantages and the disadvantages of the operation.”

... **P2**

Morris and Knechtle (2013:58) concur with the sub-theme by highlighting that potential donor and recipient usually need to be provided information on both the recipient outcomes and the donor operation with its attended risks in order to decide whether to proceed. These authors further elaborate that donors who expect only successful outcomes on their recipient owing to their donation have reasonable chances of being badly disappointed and that it is important that families are aware of the possibility of poor outcomes from transplantation. In addition, Levy (2013:192) also concurs with the sub-theme by arguing that patients need to know early in their treatment about the facts surrounding the surgical procedure such as the chances for success or failure including details of the morbidity of being on immunosuppressive medications and facing an uncertain future. Similarly, Andrasik et al (2015:392) further affirm the sub-theme by maintaining that patients' knowledge of the potential for rejection and subsequent lifetime need for immunosuppressant. These authors further point out that patient' expectations for life after transplant and any concerns or hesitations can be discussed within the evaluation of the patients' knowledge of transplant. The information provided about the theme clearly indicates that nurses have a huge responsibility in making sure that the

patients' knowledge assessment has been done thoroughly when educating patients to make sure that they willingly accept the surgery to be done.

3.7.6 Theme 6: Teaching methods

The teaching methods theme emerged when participants described the different teaching methods they used when educating patients before kidney transplant. Salandanan (2008:3) defines teaching methods as “a way of teaching” a procedure or a plan. The preoperative teaching includes instructions about the pre-operative period, the surgery and the post-operative period. There are different teaching methods that can be used by nephrology nurses and other health care team members in order to ensure that patients receive adequate information before surgery. Smeltzer et al (2010:434) asserts that multiple teaching strategies should be used (verbal, written, return demonstration) depending on the patient's needs and abilities. The sub-themes that emerged were verbal instructions, booklets and pamphlets, discussions, comprehension and retention of information demonstration and return demonstration, peer mentorship, and self-care management skills.

The section below provides a discussion of sub-themes that emerged from the theme teaching methods.

3.7.6.1 Sub-theme 6.1: Verbal instructions and discussions

Verbal instruction and discussion emerged as participants described educational delivery methods given to the patients. Lewis, Dirksen, Heitkemper and Bucher (2013:2) define discussions as exchange of views about a topic or to arrive at a decision or conclusion. Verbal instructions and discussions allow the nurses, doctors and other multidisciplinary team members to tell and explain to the patients about the implications of pre-operative procedures and what is expected of them post-kidney transplant procedure. By giving verbal instructions and informal discussions, nephrology nurses can allow patients to ask questions and share their concerns. The following verbal responses were extracted from some of the participants:

... “We are giving them some instructions.” ... **P2**

“We can give them verbal instructions like we will inform the patient to keep NPO, we will instruct them what to do.”... **P15**

... “Discuss preoperatively because the medication needs compliance.”... **P11**

“So, unfortunately, we are verbally just telling them what to do.”... **P14**

In support of the above sentiments, Johnson, Sanford and Tyndall (2008:3) concur that there is a growing demand from patients to be provided with spoken, written, pictorial or recorded information that will help them participate effectively in their own health “after care” and be able to make the best health choices for themselves and family members. Holzman and Raffel (2015:192) also support the participants’ description of the theme by indicating that verbal instructions are important; while providing oral instructions, it is beneficial to emphasise important points in the written instructions. Similarly, Edwards (2010:365) maintains that verbal instructions are part of every formal practice settings and they provide important information about both general and specific aspects of skill performance. The author further maintains that the provision of effective verbal instructions entails more than just “telling”, to be effective verbal instructions need to be tailored to the learner and his or her specific needs and situations.

Marcus (2014:482) conducted study on verbal instructions as a component of patient and family education and made recommendations for best practices for healthcare providers who used this method. The author maintained that verbal education of patients requires a multidisciplinary approach that takes into account learning style, literacy and culture to apply clear communication and methods for the assessment of learning. Urden, Stacy and Lough (2015:26) support the sub-theme by mentioning that informal discussion can take place anywhere and at any time as this strategy allows for interaction between the teacher and the learner.

Quinn (2017:1) also concurs with the sub-theme by indicating that facilitating an informed discussion about treatment options, individual patients and/or patient populations maybe better prepared to discuss, question and make critical informed treatment choices. Lewis et al (2013:2) also support the findings of this study by maintaining that discussions allows for an active exchange of information and previous experiences among participants and can use peers (patients with common problems patients with common problems to teach).

It is clear that nephrology nurses can give patient education using verbal instructions or through informal discussions before a patient will go for surgery.

3.7.6.2 Sub-theme 6.2: Brochures

The brochures sub-theme emerged from the participants' descriptions of written instructions given to the patients before kidney transplant surgery. Furthermore, Brown (2011:289) describes brochures as materials used by organisations to provide information, persuade or educate a well-defined target audience. These authors further explain that brochures can take the form of leaflets or pamphlets, booklets or can be posted to the web. Education brochures help nurses to explain complicated procedures and diseases to the patients. More importantly, reading materials help patients and family members to remember important information after surgery and after being discharged from the hospital as some of the patients might not understand what the doctors are telling them verbally.

The statements below represent some of the participant description of the sub-theme:

“We use pamphlets with English translation.”... **P3**

“We give them booklet, so they can read.”... **P5**

“We also have to provide all these things like the brochures.”... **P2**

In their study, Urden et al (2015:26) indicate that written media such as brochures, pamphlets, patient pathways, and booklets are common in outpatients and inpatients areas of health care. Similarly, Treas, Wilkinson and Davis (2013:871) concur that printed materials maybe available in the form of fact sheet, discharge instructions, printed pamphlets, and detailed booklets. The authors further elaborate that printed materials facilitate the dissemination of standardised information to each client and that hardcopy documents are an excellent way to reinforce material taught in lecture. Hess, MacIntyre, Mishoe and Galvin (2011:659) also maintain that the use of printed materials in the form of books, pamphlets, brochures, or handouts is an effective teaching strategy. These authors further resonate with participants descriptions by pointing out that printed

materials can address a wide variety of topics at variety of reading levels and can also serve as reinforcement for other teaching strategies.

Pendleton and Krohn (2017:1155) concur with the participants' description of the sub-theme by illustrating that clinicians should not assume that the client would remember patient education strategies without writing them down, providing written instructions or having a client write information down will be more effective for intervention and carryover. Johnson et al (2008:3) also support the sub-theme above by asserting that access to comprehensive written information about care and treatment after discharge from an acute hospital setting in a format that the patient and family members can understand is a basic right for all the health consumers. Evidently, the information provided by the authors show that it is important for nephrology nurses to use booklets and pamphlets when educating patient before surgery as this will serve as a form of reference preoperatively or when patients are discharged home.

3.7.6.3 Sub-theme 6.3: Comprehension and retention of information

The participants described comprehension and retention of information theme as being important when giving education. Yamamoto (2014:4) defines comprehension as “the learner’s ability to understand completely and memorise the important information that included in the text he is “reading”. How well patients comprehend and recall information they are being taught helps the nurses to predict whether the patient will be compliant to instructions being given to them. The following verbal description of the sub theme was extracted from some of the participants’ statements:

“I will let them do uuhhhmmmm to clarify or to confirm that they are really understood what I am telling.”... **P4**

And you know most of the patients here they need a sitter, I don't know why... Some of them they don't know their medications...They need one sitter to be taught how to give medications most of them do not know... that's why it is very important to have a sitter.”.... **P11**.

“We will bring the bag in front of them then ask ‘what is your medication that is due uuhhhmmmm at this hour?’ then they will pick up their medication and then nurses will verify with the ... uuhhhmmmm medication in the system.”... **P8**

Potter, Perry, Stockert and Hall (2016:351) support the participants' idea by indicating the ability of the patient to recall and comprehend information that has been taught is a predictor of patient adherence to health and disease management. Furthermore, Marcus (2014:486) underscores that patient education is ineffective if the patient fails to understand what is being taught, and that the ability to comprehend and retain information may decline as patients and family members' age.

Swearingen (2015:36) concurs that to help ensure that retention has occurred, the patient should be able to verbalise accurate knowledge about route of drug administration, duration of treatment, schedule of laboratory tests, most common side effects, follow-up care and appropriate self-care. In their study, Urden et al (2015:86) also support the sub-theme by maintaining that evaluation of knowledge retention can be conducted completely by verbal questioning the patient and should occur immediately after the teaching event and throughout hospitalisation to assess knowledge retention. Based on the information provided, it is clear that nephrology nurses need to check if the patients are able to comprehend and retain information when providing education to the patients before surgery to identify if patients will be able to recall information shared with them in order for them to be able to follow instruction and adhere to medical regimens.

3.7.6.4 Sub-theme 6.4: Demonstration and return demonstration

Demonstration is the sub-theme that emerged from Nephrology Nurse's description of education delivery method used for patients before kidney transplant. Urden, Stacy and Lough (2013:23) indicates that a demonstration involves acting out a procedure while giving appropriate explanations to provide the learner with a clear idea of how to perform a task. In addition, Bastable (2016:390) also maintains that a demonstration by the nurse is done to show the learner how to perform a particular skill. Treas et al (2013:871) also indicate that in the demonstration method, the teacher explains and demonstrate a skill or task, the learner then demonstrates comprehension by returning the demonstration. When educating patients before surgery, Nephrology nurses need to teach kidney transplant patients by showing them how things are done so that patients understand what is expected of them to do better and to assess if they are doing things correctly.

This is illustrated in the statement from one of the participants' verbal description of the sub-theme:

"I will show them how the incentive spirometry is done."... **P4**

"We will show them...uuhhhmmmm... how to do things like incentive spirometry is done and maybe if it's available we will show them how to use it as well."... **P15**

"... By showing them tools for the hand hygiene, showing them how to hand wash."... **P13**

Holzman and Raffel (2015:193) study resonate with the description of participants by indicating that providing a demonstration is important for clients' compliance. In the same vein, Hess et al (2011:659) maintain that demonstrations allow the patient to both see and hear the necessary information and more importantly, demonstration enables the patient to engage in more active learning. Similarly, the authors further maintain that it is of considerable importance that the return demonstration that requires that the learner to repeat for the instructor's predetermined steps is essential to the proper performance of the procedure in question. In addition, Bastable (2016:390) also concurs that a demonstration as a teaching method provides nurses with the opportunity to model their commitment to a learning activity, builds credibility and inspires learners to achieve a level of excellence. Potter et al (2016:349) also mentioned that an effective demonstration requires advance planning and are most effective when learners first observe the educator and during a return demonstration have the chance to practice the skill.

Perry (2016: 82) concurs that a demonstration is an effective method to provide teaching of the acquisition of psychomotor skills and that showing the patient how to do something can be effective. In their study, Urden et al (2017:67) also affirm the findings of this study by concluding that demonstration and practice are the best strategies for teaching technical skills and that adult learn best if they are able to participate in the learning process. Involving the learner, providing step-by-step instructions and presenting a visual demonstration of the skill being performed are important strategies to achieve successful task acquisition (Urden et al 2017:67). Therefore, the information provided about the sub-theme clearly indicates that nephrology nurses needs to demonstrate some procedures which the kidney transplant patients need to perform after surgery like wound dressing

and use of incentive spirometry before patients will go for surgery so that patients will be able to perform those procedures post-surgery or when patients are discharged home.

3.7.6.5 Sub-theme 6.5: Peer mentorship

Peer mentoring is the sub-theme that was identified by participants as a one of the teaching strategies employed by them when educating kidney transplant patients. MacAulay, Colbert, Nadkarni and MacDonald (2012:7) assert that mentoring means that an experienced person (the mentor) helps another person (the mentee) to achieve goals and develop skills. Similarly, Nguyen (2016:198) describes peer mentoring as a caring relationship in which two participants sensitively show their respect, concern, love, empathy and unconditional regard for the needs of others. When providing education for patients before surgery, nephrology nurses can use peer mentoring by training patients who previously attended haemodialysis and has undergone kidney transplant surgery to help other patients. This approach could be powerful in enhancing patient trust and participation with good health care outcomes.

“We will involve those patients that have gone through the transplant and come and talk with them, share with them.”... **P9**

“... Uuhhhmmmm ... successful patients who underwent for surgery, okay, maybe they are now here in the Unit. Choose who is the best patient who can be like....uuhhhmmmm... good example for the patient like ... uuhhhmmmm ... the permission of the doctor and the coordinator and the patient herself and the sitter we can bring them just to talk.”... **P10**

“... Uuhhhmmmm ... what I mean they go together they are ... uuhhhmmmm ... they are having haemodialysis usually as outpatient at the same centre. So, they know, or they have an idea who is this patient who went for transplant.”... **P1**

Busuttil and Klintmalm (2014:399) support the participants' description of the sub-theme by indicating that many centres are using peer-mentoring programmes for patients to gain additional support and information throughout the transplant process that can improve the patient experience. Furthermore, Fogel and Greenberg (2015:1449) also assert that in addition to psychotherapy, peer-based support approaches such as support groups or peer mentoring can positively impact patient quality of life. Nguyen (2016:198) further

supports the sub-theme by pointing out that peer mentoring needs high level of trust, support, encouragement, and caring between peers to be effective. This is true in the case of kidney transplant patients as after surgery, patients need more support and encouragement owing to the number of tablets to be taken as well as the need to be encouraged to follow-up in the outpatient transplant clinic.

Orlando et al (2017:69) also mentioned that numerous educational interventions for end stage renal disease patients. These include nephrology training, home-based educational and intensive educational programmes that in cooperate previous transplant recipients and specific living donor educators have demonstrated success in moving potential recipients through the transplant process. In the same vein, Stern (2010:25) also concurs with the findings of this study by arguing that patient-to-patient interactions provide a valuable adjunct to pre-operative teaching and many successful transplant recipients enjoy the opportunity to give something back by sharing their experience with new transplant candidates. Based on the discussions above, it is clear that when educating patients before surgery, nephrology nurses can invite patients who have already went through transplant surgery to act as peers for the patient expected to go for surgery.

3.7.6.6 Sub-theme 6.6: Self-care management skills

Self-care management skill is the sub-theme mentioned by participants when they described the teaching strategy for the kidney transplant patients. Matthie, Jenerette and McMillan (2015:261) define self-care as the ability of an individual with chronic disease to participate in a daily collaborative (conducted with family, social, health care providers support) process to manage symptoms and patients to assume an active and an informed role in health care decisions.

Narva, Norton and Boulware (2015:5) define self-management skills as “the systematic provision of education and supportive interventions to increase patients’ skills and confidence in managing their health problems, including regular assessment of progress and problems, goal-setting and problem-solving support. Kidney transplant patient should be educated on the skills that will allow them to be able to take care of themselves post-surgery. The responsibility of the multidisciplinary team is to make sure that patients are well equipped with enough knowledge that will allow the patient to be able to take care of

the newly transplanted kidney. The following verbal extraction describes some of the participants' description of the sub-theme:

"I told her you have the internet; you can research what are the pre and uuhhhmmmm pre-transplant pros and cons, positive and disadvantages that you have to also research, uuhhhmmmm resourceful as a patient not only not only to uuhhhmmmm listen to whatever the doctors or nurses are telling you also have to be resourceful as a person" ... **P4**

We need to teach them because once they go home, they will be the one to take as I said they will be the one to take their own medication; no one will be telling them that ... Uuhhhmmmm ... it's this time you need to take your medication"...
P8

"... So, we will educate them also like that for the labs for the (...) yeah, their urine, we will uuhhhmmmm ... educate them if they will ... uuhhhmmmm they will observe their urine even they're going home already, then we will educate them to take more fluids and uuhhhmmmm ... to monitor also their output" ... **P6**

Mensah (2010:657) concurs with the participants' description of the sub-theme by pointing out that a key requirement of self-management for chronic conditions is that patients must be empowered and motivated to take an active role in their care and ownership of patient-centred management plan. In the same vein, Busuttil and Klintmalm (2014:399) support the findings of this study by highlighting that health coaches provide patients with self-management tools and coping strategies and assist in self-activation to master complex medical regimen.

Widmar (2012:25) also concurs with the findings of this study by pointing out that effective self-care behaviours have shown to contribute to a decrease in the risk of complications and hospital readmissions. In the same vein, Matthie et al (2015:257) further concur that a better understanding of self-care can help health care providers equip patients with resources and necessary skills to participants in their disease management. Beale (2017:76) further supports the findings of this study by asserting that self-management skills do not only allow patients to be proactive but also can lead to better health outcomes. From the information provided, it is clear that nurses should emphasise on

self-care management skills that will enable the patients to take care of themselves post-surgery when providing patients with education before surgery.

3.8 DISCUSSIONS OF THE FINDINGS

The findings of this study indicate that pre-transplant education for patients is not adequate based on the following points.

3.8.1 Theme 1: Lifestyle modification

In theme one, it is clear that nephrology nurses should educate the patients about the lifestyle that they need to adapt post-kidney transplantation. The information provided by nephrology nurses on lifestyle modification seems adequate to enable the patients to be aware of aspects they need to considering order to ensure graft survival post-kidney transplantation surgery. Furthermore, participants indicated that patients should be educated on compliance with medication, prevention of infection and dietary management that are the most important aspects that patients should be aware of before going to surgery. The following verbal statements from the participants represent the confirmation of the findings:

“We will give basic education in hand hygiene; we will give them. They should ... uuhhhmmmm ... learn how to do this hand hygiene. It looks like simple but every now and then they are going to do that, and ... uuhhhmmmm ... even the postoperative it will be very important to them. So, we will emphasise again and again about the hand hygiene.” ... **P10**

“Because pre-operatively we will educate them that they should take all their medications on time and it’s very important also to take ... uuhhhmmmm ... fluids and what else? Uuhhhmmmm (long pause) fluids, hygiene, what else? Only that one.” ... **P6.**

“We inform them that they will receive medications that will decrease their immunity, or they will become immunocompromised, because there is some kind of medication they are receiving later for the rest of their life. So, they have to be careful because infection could easily happen to them more than the regular or normal person.”... **P15**

Good and Kirkwood's (2017:84) study resonates with the findings by mentioning that educating patients and family members about lifestyle changes, medication and dietary restrictions can assist them in improving self-care. Mitch and Ikizler (2012:208) also mentioned that the kidney recipients face a new set of dietary challenges related to pre-existing comorbidities, potential new metabolic abnormalities and nutritional requirements. These authors further state that in light of these factors, it behoves those caring for kidney transplant recipients to become knowledgeable in proper nutritional therapy of this population. Byham-Gray et al's (2014:210) study corroborates the findings of this study by pointing out that the lifestyle changes involving diet, behaviour modification and physical activity are the cornerstone of successful weight control.

3.8.2 Theme 2: Enhanced motivation and better outcomes

In theme two (2), it became clear that nurses are giving sufficient education to enhance patients' motivation with better outcomes. They commented as follows:

"So now that you are given a chance to have a new kidney, you will go. You have a chance to go back to a normal life that you can pass urine, you eat whatever you want." ... **P4**

"... Uuhhhmmmm ... we inform them ... after the procedure they will be okay like ... uuhhhmmmm ... they won't be having dialysis anymore; they won't have the PD anymore or the dialysis peritoneal dialysis anymore and then they will be fine afterwards, their kidney or yeah kidney will be fine afterwards." ... **P12**

"We try to emphasise to them that they need to follow this and that, because once the patient is fully aware of what to expect and what to do on pre- and post-operative, the success of the maintenance of the kidney and prevention of rejection is ... uuhhhmmmm very good." ... **P1**

"The patients also don't like to get any complications; So, they cooperate more when you educate them. Patients will cooperate with you they will (...) they agree to ambulate, so this is much important the education (...); so, it can help for the patient also, procedure and they can go home fast if they cooperate."... **P5**

Cappelli and Mobley's (2007:123) study the findings concur with the finding of this study when reporting that outcomes anticipated in response to patient education include patient's choice to modify behaviour and achieve compliance with prescribed regimen designed to enhance self-care. In the same vein, Muma and Lyons' (2011:7) study also confirms the trustworthiness of the findings of this study regarding patient education and motivation when they assert that for some individuals, providing education about the disease or treatment plan will be enough to motivate them to go forward and carry out what has been prescribed.

Similarly, Fitzpatrick and Kazer (2011:384) also confirm the findings by pointing out that effective patient education facilitates positive outcomes during postoperative period of self-care and recovery. Vuyk (2012:5) also support the findings of this study when he argues that a strongly motivated patient will be able to make well-informed decisions balancing the weight of concerns and efforts with potential results. Based on the information provided, it is clear that nephrology nurses should provide education that will enable kidney transplant recipients to be able to be motivated to participate in their care. If patients are empowered and they have enough knowledge, they will be able to take care of the transplanted kidney, which will lead to better outcomes.

3.8.3 Theme 3: Multidisciplinary team approach

In theme three, it came clear that patient education is a multidisciplinary team approach. Findings from this study indicate that the teaching of patient by the multidisciplinary team is not adequate. Patients undergoing kidney transplantation need to be seen by different members of the health team, each member of the team needs to address the patients and family members based on their specialty. Therefore, the study revealed that there is no coordination among the health care team, which is very critical as the multidisciplinary team is required to provide sufficient care and to address facets of care for both the kidney donor and the kidney recipient patient. The findings of the study are revealed from statements made by some of the participants as follows:

"I am not sure what the coordinator is educating because patients do not know what to expect." ... **P9**

"Uuhhhmmmm ... I think it's a not only the nurses who should educate the patient. It should be ... it should start from the coordinators ... really ... because they are

the one that are the first in line who are in contact with the patient, and as for the doctors, mostly, they are just ordering.”... **P12**

I’m not sure what the (...) What are the coordinators...Uuhhhmmmm... educating them before they will come here because, we don’t have clear communication with how far they are ... uuhhhmmmm ... how far are they with the education preop. But uuhhhmmmm ... most of them they are ... they are only (...) I think in my own opinion they are only concentrating on the workup.”... **P11**

“But I think the transplant coordinator needs to come up ... in my opinion they also need to be active or they need to participate also in educating the patient, because when we ask before, they said ... I think they are not doing the education with regards to the patient. Because we asked before if they can help us explain, they said “No, it is not their (...) it’s not their job” ... **P3**

Honblower and Turner’s (2015:1143) study concurs with the theme when they underscore that education provided to kidney transplant patients needs to be multidisciplinary and multifaceted, addressing the individual needs of the diverse patient population. In the same vein, Eisen (2014:172) also concurs with the findings of this study that investing extra time and resources into education and compliance and taking a team approach can help patients in the long-term. Similarly, Gokal, Khanna, Krediet, and Nolph’s (2013:362) also concur with the theme by maintaining that doctors, nurses and paramedical staff needs to work together to form a cohesive multidisciplinary team and that a teaching plan needs to be established and step-by-step protocol formulated prior to the admittance of any patients. The information from different authors clearly indicates that the involvement of multidisciplinary team members in the education of a patient before surgery benefit on quality of patient care and outcomes of successful transplant surgery and recovery of patient.

3.8.4 Theme 4: Psychosocial assessment and preparation

In theme four, it became clear that nurses need to prepare and assess the psychosocial status of the patient before they will undergo surgery. The study revealed that during pre-operative education, nurses were aware that they should focus on the psychological aspects that can affect patient care and health care outcomes post-kidney transplant. The findings are confirmed by statements that were made by participants as follows:

“As per mentally, aside from being cleared by the Psyche Department and Internal Medicine, we also uuhhhmmmm, uuhhhmmmm ... regarding that they can speak English because some are not able to speak English uuhhhmmmm ... we ... they ... we are asking them about their fears and then somehow we are telling them what to expect after the surgery which also lessen their fears and anxiety pre-op.”
... **P8**

“... They received a new organ in their body, so somehow it affects them, like they will ask, sometimes they will ask ... uuhhhmmmm ... nurse ... uuhhhmmmm ... “ana fi jaded killa” (I have a new kidney), they said. So, usually we will tell them, yeah this is your new kidney. You have to take care of it this time, so they feel like they are new now, this is something that we usually tell the patients also that the feeling that they will have after the post-operative, so number one is ... is accepting that they have a new kidney now and like a new life.” ... **P9**

“It’s good to give the patient education of what he expects for surgery in order to decrease this anxiety and ... uuhhhmmmm ... like fear of surgery, and if after surgery they see what you told them already. I think this will help them to accept to ... to ... to adjust to the post-surgery period in ethical situation rather than if they don’t know.” ... **P15**

Dimick, Upchurch and Gonnendary (2012:609) report that all transplant candidates undergo psychosocial evaluation to screen for characteristics that maybe associated with medication or post-operative care non-compliance. In the same vein, Margerson and Riley (2008:94) concur that psychological factors may contribute to morbidity and mortality post-operatively. These authors further maintain that given that a significant proportion of medical patients have been found to have psychological difficulties including anxiety and depression. Therefore, it is highly likely that some patients presenting for surgery may be experiencing psychosocial difficulties.

Kendel (2009:75) confirms the findings by indicating that it is generally acknowledged that preoperative depression and anxiety significantly influence quality of life as well as mortality. This author further alludes that although the influence of psychosocial factors on physical illness is undisputed, the assessment of these factors is somewhat neglected in the day-to-day clinical routine. Similarly, Shippee-Rice, Fetzer, Long and Armitage

(2011:129) also confirm the findings of this study by pointing out that discovering patient's physical and psychosocial readiness for surgery relies on communication process that facilitate sharing and exchanging of information between patients and providers.

3.8.5 Theme 5: Patients knowledge assessment

In theme five, the study revealed that nurses should assess the knowledge of the patient before the patient will go for surgery. In addition, the study revealed that patients do not have sufficient knowledge regarding medications and some of the procedures to be done as expected post-surgery. The findings are based on the statements retrieved from some of the participants as follows:

“... Uuhhhmmmm ... like a: most of the patients are asking what are those things that are hanging, like the IV fluids and the medications that we are giving also, uuhhhmmmm ... uuhhhmmmm ... what else? Most of the time also they will ask you ... uuhhhmmmm, how many days will they be admitted.”... **P12**

“But sometimes to tell you the transplant coordinator are like not ... like (...) Uuhhhmmmm, the thing is they just want more patients, but they are not giving good education because by the time the patient has already pre-operative that's the time they are ... I'm talking about cadaveric patients ... uuhhhmmmm by the time they are post-operative patients they don't know anything.”... **P2**

“Pre-operative education ... it should start from the clinic to the ward, while doing the workup also ... uuhhhmmmm, because sometimes most of the patients they're lacking education with regards to transplant ... that they have to take Immunosuppressant drugs for lifetime.” ... **P3**

“The patient should know what, what's the ... the medication, what will happen after the uuhhhmmmm post-operation because sometimes the patients are complaining if uuhhhmmmm ... why like this, why my ... for example, the transplant, why my ... I cannot sleep because you're always checking my vital signs and you are always monitoring my ... uuhhhmmmm...urine and lots of fluids you're giving to me” ... **P6**

Linton (2015:266) asserts that telling the patient and family or friends what to expect in immediate post-operative phase can prevent unnecessary stress. These authors further allude that an appropriate teaching plan is based on an assessment of what the patient

already knows, wants to know and needs to know. White, Duncan and Baumle (2012:278) also point out that the client about to have surgery is at the risk of knowledge deficit related to pre-operative procedures and protocols and post-operative expectations. These authors further argue that the purpose of pre-operative teaching is to answer questions and concerns about surgery, ascertain client knowledge of the intended surgery and provide information in a manner most conducive to learning.

Paul and Williams (2009:837) also highlight that during assessment, the nurse determines how much the patient and family knows about the impending surgery and the expected post-operative events. These authors further maintain that patients are encouraged to ask questions and indicate how much information they wish to receive. Some patients prefer not to have detailed information whereas others want to know as much as possible. Shippee-Rice et al (2011:129) also avert that communication during preoperative assessment supports a process of discovery and that learning the patient's story helps the nurse to discover patient's expectations and understanding about surgical procedure and post-operative recovery. Therefore, it is clear that nurses need to do proper assessment of the knowledge of the patient regarding surgery to be done and all related procedures required by the kidney transplant recipient to comply with medical regimens post-surgery.

3.8.6 Theme 6: Teaching methods

Although participants are aware of different teaching methods that can be used for patient before going to surgery, the study revealed that the teaching methods used are not sufficient to provide patients with enough information. Some of the participants were not aware or were not sure about the type of teaching materials being used in the hospital before the patient will undergo surgery. It is was not clear that other methods such as the use of video tapes, patient group support and other important methods were used in the hospital. The findings are confirmed by the verbal extractions from some of the participants' statements as follows:

"I'm not sure but I think we don't have any workshops here for patient education ... uuhhhmmmm ... Most of the time, they are only being oriented or educated with uuhhhmmmm within in uuhhhmmmm ... the ward ... I haven't seen if there is a pamphlet also for transplant? Prior to, OR right? Yeah, I didn't see anything ...

unlike for some procedures ... uuhhhmmmm... like blood transfusions we have this booklet that we give to the patient in Arabic and English but for transplantation so far I have no idea if there's a booklet for that for the education." ... **P1**

"But in my opinion, aside of that, I think ... uuhhhmmmm ... what we can improve is ... aside of telling them, talking to them ... uuhhhmmmm ... brochure and pamphlets, in my opinion is maybe we can have this like video, like uuhhhmmmm TV show that shows them that, show to them what is organ transplant." ... **P9**

"... Uuhhhmmmm ... do we have that? We don't have that pamphlets, we have the pamphlets? I am not sure now."... **P12**

White et al (2012:278) confirm the need to use different methods of teaching by indicating that the level of learning increases when more than one teaching medium is used; for example, using materials such as videotapes, charts, tours, anatomic models, pictures and brochures reinforce both visual and auditory learning. Stern (2010:344) also supports the use of different teaching materials by stating that patient groups are similarly effective, they may rely on lay leadership or skilled group therapist and printed materials and audio-visual presentations are useful educational supplement. In the same vein, Cruess and Goligher (2012:331) concur that books, films, models and modern audio-visual teaching methods are undoubtedly helpful in teaching and learning process.

Muma and Lyons (2011:7) argue that nurses should not rely only on a verbal communication to ensure patient's understanding. For some people, verbal learning is not as successful as visual learning, while some individuals may understand and retain information better if they are able to look at the handouts, chart and internet. These authors further maintain that it is recommended to provide patients with brochures, handouts, medication inserts, electronic resources, an outline of treatment plan or other materials that will permit later perusal to reinforce what was covered during actual interview. From the information provided, it is clear that nurses need to use of different teaching methods. Currently, there is valuable information on social media that will provide patient with sufficient information and will empower patients and keep them updated with the latest health advices.

3.9 CONCLUSION

This chapter focused on the analysis and presentation of the study conducted. The initial analysis was presentation of the biographical data of the participants followed by presentation and analysis of the interviews findings together with field notes adopting Creswell 2013 data analysis spiral. Main themes were developed from categories and sub- themes that represented participants' voice. Data were presented in table for comprehensibility. The next chapter presents findings of discussions through literature control which will be used to confirm the research findings and to inform the discussion in the final chapter.

CHAPTER 4

DISCUSSION OF FINDINGS AND LITERATURE CONTROL

4.1 INTRODUCTION

In Chapter 3, the analysis and presentation of the study conducted, and the findings of the study was briefly discussed. In this chapter, findings will be discussed utilising literature control in order to compare the existing body of knowledge. Six themes emerged from the individual interviews held with fifteen (15) participants about pre-operative education for patients undergoing kidney transplant as viewed by nephrology nurses. The emerged themes are discussed in the paragraphs below.

4.1.1 Lifestyle behavioural modification

The study revealed that patients should be educated on lifestyle behaviour that needs to be modified post-kidney transplant. Participants indicated that post-kidney transplant, the life of kidney recipients changes completely. There are many issues facing the transplant recipients such as medication management, infection prevention, chronic disease management, fluid balance, urine output, and many psychological issues. Hence, the patients need extensive education on different lifestyles they should adapt in order for the transplanted kidney to survive. Gheith, El-Saadany, Abuo Donia and Salem (2008:218) support the theme by indicating that the lifestyle after transplantation is the key link between transplantation and its outcome and it is crucial to comply with the recommended lifestyle behaviours. Similarly, Rosaanen et al (2017:2) also support the theme by indicating that transplant recipients must know how to adhere to lifestyle changes, hygiene practices and infection prevention and must understand how to monitor for signs and symptoms of rejection and more. American Urological Association (2011:12) postulates that like all immunocompromised individuals, kidney transplant patients have an elevated risk of infection during the six months post-transplant, patients are most likely to contract post-surgical, nosocomial or community acquired infections hence the patients should be educated on infection prevention.

The study revealed that as part of the lifestyle modification, patients should be taught about weight management post-kidney transplant. Gaber (2013:1321) supports the sub-theme by illustrating that weight gain for post-kidney transplantation affects 50% to 90% of kidney transplant recipients. The author further maintains that the management of obesity includes behaviour modification, an exercise programme and nutritional counselling, encouraging a healthy lifestyle, and follow through on strategies to prevent common comorbidities.

The study also revealed that compliance with prescribed medication post-transplant is lifestyle adaptation that kidney transplant should adhere to in order to prevent infection and organ rejection. Moreso, Torres, Reguena, and Seron (2015:27) affirmed this by defining adherence as “the extent to which a person’s behaviour, taking the medication, following diet and or executing lifestyle changes correspond with agreed recommendation from health care providers”.

It was revealed that during pre-transplant evaluation, nurses and doctors should assess if the patient and family members will be able to cope with the complex medical regimen in order to identify those patients that are at risk of becoming non-compliant. American Urological Association (2011:7) affirms this finding by underscoring that the immunosuppressive therapy is the most important component in the management of the kidney transplant patient, kidney transplant patients must take a complex regimen of drugs throughout their lives to prevent acute rejection and ensure the graft maintains function. Furthermore, American Urological Association (2011:9) indicates that the medication adherence is crucial issues among kidney transplant patients because non-adherence will result in graft rejection. In addition, Morris and Knechtle (2013:703) suggest that patient identified as high risk concerning medication adherence should receive pre-transplant psychosocial evaluation and psychological counselling to facilitate post-transplant follow-up and to ensure patient adherence to the immunosuppressive regiment.

Goncalves, Reveles, Martins, Rodriques and Rodriques (2016:129) indicate that an adherence requires the patient agreement to the health professional’s recommendations and patients should be active partners in their own care. These authors further note that the International Council of Nursing proposes a combination of educational and behavioural strategies to promote adherence. Hence, it is important that nurses develop

educational interventions that will increase knowledge of patients and families about medication and the disease by providing education either verbally or through written materials in a form of individual or group educational programmes before the patient can undergo kidney transplantation.

Lalic, Radovanovic, Mitic, Paunovic and Cvetkovic (2014:352) illustrate that it is well-known that non-adherence to immunosuppressive therapy after organ transplantation is strongly associated with negative medical outcomes, kidney graft recipients who do not adhere to their prescribed medication regimens are at an increased risk of infection, episodes of acute and chronic rejection and ultimately graft loss.

Cravedi, Perico and Remuzzi (2010:573) also point out that compliance with immunosuppressive regimen is a major issue for many transplant patients and might account for late acute rejection episodes and graft loss. The non-compliance to immunosuppressive medications has been reported up to 22 to 48%. Causes may include forgetfulness, lack of knowledge about new drug modifications and patients' beliefs about effectiveness of immunosuppressants and their concerns about their side effects therefore clear explanation of therapy rationale is crucial in improving patients' compliance and transplant outcomes (Cravedi et al 2010:573).

4.2 ENHANCED MOTIVATION AND BETTER OUTCOMES

Enhanced motivation and better outcomes is what was revealed by the study when participants described the effects of education on patient care. Participants indicated that if patients are educated about their conditions, they will understand what goals they need to work towards to improve their health with better outcomes. Patients will be motivated to reach certain health goals and be active with their treatment. More importantly, the study revealed that if patients received proper patient education before surgery, they tend to comply with medical regimen and they recover quickly post-surgery. Moreover, their kidney will not malfunction because they will be able to know that they need to take care of their kidney by living a healthy lifestyle and being able to take their immunosuppressant medication that will ensure graft survival. There will be trust between nurses and patient that will help in improving care post-operatively and patients will cooperate with whatever measures they have been taught.

Ong et al (2009:104) affirm the theme by pointing out that the pre-operative teaching readily and effectively enables patients to cope with their surgery, reduces the duration of hospitalisation, elevates satisfaction, minimises post-surgical complications and augments patients' psychologic wellbeing. Majid, Lee and Plummer (2015:123) also concurs with the theme by stating that with effective and well-structured patient education programme, the cost benefit for health care providers and patient includes a shortened length of stay and reduced cost of care. These authors further elaborate on the benefits of patient education including increased patient satisfaction, improved quality of life, enhanced continuity of care, decreased anxiety, fewer complications, promotion of adherence to the plan of care, maximised independence, and empowerment.

Itisha and Manu (2016:285) also validate the theme by asserting that the patients who received structured pre-operative education compared to patients who did not, have improved outcomes. These outcomes included less patient anxiety, reduced post-operative complications such as atelectasis, pneumonitis and decreased need for analgesics and more rapid recovery as indicated by earlier discharge and return to work and normal daily activities. Fink et al (2013:271) buttress that patients who had received pre-operative information required less analgesia and recovered faster than those who had not. These authors further state that a meta-analysis of one hundred and ninety one (191) studies focusing on how psycho-educational interventions influence recovery showed a positive effect on pre-operative patient education on post-surgical pain, psychological well-being, anxiety, and satisfaction.

4.3 MULTIDISCIPLINARY TEAM APPROACH

The study revealed that pre-operative education needs a multidisciplinary team approach. Majid et al (2015:122) concur with the theme by indicating that the process of patient education is essentially one where the patient comes to understand his or her condition and self-care using the experience and guidance of the multidisciplinary team. Huljev and Pandak (2016:67) affirm the theme by defining the multidisciplinary team as group of health care workers who are members of different disciplines each, providing specific services to the patient whereby team members independently treat various issues a patient may have focusing on the issues in which they specialise. Accordingly, participants described preoperative education for kidney transplant patients as a process that needs provision of information to the patients by physicians, nurses, transplant

pharmacists, dieticians, and other multidisciplinary teams directly involved in caring for the patients before and after kidney transplant. In his study, Murphy (2007:584) supports this finding by positing that the transplant team, including the nurse will meet up with the transplant recipients and their families to discuss surgery and what to expect both pre- and post-operation, the issues surrounding rejection and the complications that can occur post-operatively.

Participants felt that everyone from the transplant team must come together when patients are educated so that everyone can explain their bit so as not to cause confusion or duplicate what the other health professional has already discussed. Accordingly, Bankier (2007:95) opines that the multidisciplinary team approach in kidney transplant patients requires harmoniously combining the competencies of the nephrologists, radiologists and urologists. This close-knit association and the contribution of each specialist before and after surgery should optimise the chances of successful transplantation and limit post-operative complications, this means that patient education must start early even before transplantation.

Benagiano and Brosens (2014:1116) support the theme by mentioning that there are many perceived benefits of the multidisciplinary approach. They are as follows:

- First, it gives access to the right team of health professionals who work together to plan the most suitable care options.
- Second, it allows a full review of all the factors that may affect the treatment and help prevent unexpected problems.
- Third, it may reduce delays in treatment and referrals to services and less duplication of medical tests
- Fourth, it facilitates transfer of appropriate and consistent information to the patient as a holistic view of the situation can be provided.

All these benefits work well for the kidney transplant patients as there is a need to have an educational activities and well organised treatment plan in place before the patients will undergo kidney transplantation.

The study also revealed family members should be included when pre-operative education is given to the patient. Participants mentioned that family members should be

equipped with knowledge and skills required to assist and support patients post operatively. Feinstein et al (2017:516) confirm the finding by arguing that family inclusion requires no formal assessment and minimal training to implement. The members of the medical team should welcome the family by encouraging them to attend the visits, participate over the phone and ask questions. These authors further emphasise that including family reinforces the value of the family members' contribution to health of his or her loved ones.

4.4 PSYCHOSOCIAL PREPARATION

The study revealed that pre-transplant education is indispensable for the health care team to assess the psychosocial status of the patient in order to determine the psychological preparedness of the patient. By assessing the psychosocial status of the patient, the nurse is able to evaluate if the patient will comply with the medical regimens and make decisions about seeking care. Van Hadeveld and Tong (2010:80) support the theme by contending that a formal psychosocial assessment should be mandatory part of the pre-transplant workup process, semi-structured interviews guides for pre-operative and post-operative psychosocial assessment are useful for focusing the discussion on relevant and critical issues while allowing open discussion. Anil Kumar and Motto (2015:409) further support the theme by indicating that a comprehensive pre-transplant psychosocial evaluation helps to get a more complete understanding of mutual and sometimes contradictory expectations and needs of transplant candidates, donors, care takers, and transplant team.

The study revealed that the psychosocial aspects such as emotional and mental preparation of the patients should be assessed when educating patients before kidney transplant surgery. Kidney transplant surgery can bring mixed feelings for patients. Some patients might feel happy to receive the kidney and others might be overwhelmed with the guilt feeling especially if the kidney is from the brain-dead patient.

McKay and Steinberg (2010:20) support this statement by pointing out that the assessment of emotional health and cognitive status is important for short- term and long-term outcomes of transplant. These authors further elaborate the matter by stating that the emotional health and stable cognitive status of a person influences their management of tasks needed to manage illness. Garden et al (2012:451) underscore that potential

recipients need to undergo rigorous medical psychological and social evaluation. Morris and Knechtle (2013:700) further indicate that it is valuable to have a pre-transplant meeting at which specific medical, social and psychosocial issues are explored with the patient and family members.

4.5 PATIENTS KNOWLEDGE ASSESSMENT

The study revealed that patients' knowledge assessment about the disease, surgery and outcomes should be assessed before undergoing kidney transplantation. Participants indicated that the health care professionals educating the patient pre-kidney transplantation needs to have extensive evaluation of the patients' knowledge of the procedure before the patients will go for surgery. Welch and Harrist (2016:120) affirm this by stating that when a patient of any age is going through pre-transplant evaluation and education, assessment of understanding of the transplant process and post-transplant requirement is often a part of the commitment to care process that teams want families to endorse.

Rosaasen et al (2017:2) also support the theme by indicating that knowledge is a proximal health outcome that may affect distal outcomes such as decreased morbidity and mortality and decreased health care expenditures. Conversely, the inadequate knowledge could lead to desired consequences such as a decreased patient adherence and organ rejection. Devinney (2014:14) also concurs with the theme by indicating that it is important to align the pre-operative education to the specific needs and knowledge of the patients as much as possible. The author further maintains that a proper assessment of patient knowledge by the nurse is of key importance and that understanding by the nurses of the patients' actual and perceived limitations in knowledge as well as their learning needs will enable the nurse to provide better supportive interventions. Assessment should include proficiency in self-care, health care decision-making and self-advocacy in addition to disease related skills and knowledge (Kirk, Knechtle, Larsen, Madsen, Pearson & Webber 2014:1483).

4.6 TEACHING METHODS

The study revealed the different kinds of teaching methods used by nurses when they provide education to patients before kidney transplantation. Participants indicated the

different teaching methods such as verbal and written instructions, booklets and pamphlets, discussions, comprehension and retention of information, teach back technique demonstration, self-care management skills, and peer mentorship. Ong et al (2009:104) support the theme by indicating that the pre-operative teaching has been administered in various ways and formats, including verbal instruction, printed materials, demonstrations, and videotapes. These authors further allude that routine dissemination of information by means of verbal instructions with supplemental written material information packets has been the basis for preoperative teachings for decades. Walsh and Crumble (2007:625) also affirm the theme by suggesting that goals for patient education should be established for each patient. They maintain that teaching should draw upon a range of different methods such as pamphlets, detailed instructions for technical tasks, videos, group sessions, and practical demonstrations and content for the education should include functions of the kidneys, self-care measures and lifestyle adaptations. Rosaasen et al (2017:2) concur with the theme by stating that several strategies have been suggested to improve patient education for transplant recipients. These include cognitive strategies such as teaching videos, electronic education, group information sessions, or one-on-one counselling.

Della Valle (2008) also affirms the theme by pointing out that a combination of verbal instructions and written materials along with web-based programmes is an approach that is very effective for patients and caregivers. Moreover, verbal instructions can be customised to patients' needs through individual or group approach as verbal instructions promote a more personal interactive learning approach. Votroubek and Tabacco (2010:334) underscores that the nurse must determine with patient and family input how to best structure the learning process. The author further acknowledges that the age of the patient will influence whether pictures or written text will be used. More importantly, the individual patient and family members' own education and learning styles may necessitate the use of oral or written instructions, individually or group interactions and computer/internet programmes.

4.7 CONCLUSION

This chapter focused on presentation of findings and discussions through literature control. The views of nephrology nurses in this study underscored the role of multidisciplinary team approach in pre-operative education. These include lifestyle

behavioural modification of kidney transplant patients after kidney transplantation; importance of psychosocial preparation, motivation and better outcomes brought about by patient education; importance of patient knowledge assessment when rendering preoperative teachings; and teaching methods used by nephrology nurses to render patient education before kidney transplant. The next chapter focused on discussion of conclusion and limitations of the study as well as recommendations for addressing the problems and for further research.

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

5.1 INTRODUCTION

In Chapter four, the findings of the data that emerged from 15 nephrology participants were presented and were supported by literature under the themes and categories that had emerged from the data analysis. The themes that emerged were lifestyle behavioural modification, enhanced motivation and better outcomes, multidisciplinary team approach, psychosocial preparation, patients' knowledge assessment and teaching methods. In this chapter, the overview of the study, conclusions and limitations of the study as well as recommendations in relation to the findings are presented.

5.2 OVERVIEW OF THE STUDY

The purpose of the study was to explore and describe the pre-operative education for patients undergoing kidney transplant as viewed by nephrology nurses. The objectives of the study were to:

- Explore and describe the views of nephrology nurses regarding the impact of pre-operative patient education given to patients undergoing kidney transplant.
- Describe pre-operative teaching that nurses believe is important to provide patients before undergoing kidney transplant.
- To recommend measures required to improve pre-operative education given to patients undergoing kidney transplant as viewed by nephrology nurses.

The grand tour question used was: *What are the views of nephrology nurses regarding pre-operative education for patient undergoing kidney transplant?"*

The study used qualitative descriptive explorative approach. The study participants comprised 15 nephrology nurses from the Nephrology Unit. Accordingly, Creswell's (2013) data analysis spiral guidelines were used to analyse the data. Themes and sub-

themes that emerged from the data were used to describe the phenomenon being explored. More importantly, the above objectives of the study were accomplished.

5.3 SUMMARY AND INTERPRETATIONS OF THE RESEARCH FINDINGS

The findings are drawn from the following identified themes that were extracted from data collected from nephrology nurses' description of their views regarding pre-operative education for patients undergoing kidney transplant.

Theme1: Lifestyle modification

This theme deals with the need of the kidney transplantation to adapt to new lifestyle that will enhance graft survival. Participants indicated that post-kidney transplant, the life of kidney recipients' changes completely. There are many issues facing the transplant recipients such as medication management, infection prevention, chronic disease management, fluid balance, urine output, and many psychological issues. Hence, the patients need extensive education on different lifestyles they should adapt in order for the transplanted kidney to survive.

The study revealed that compliance with prescribed medication post-transplant is the lifestyle adaptation that kidney transplant patients should adhere to in order to prevent infection and organ rejection. It was revealed that during pre-transplant evaluation the nurses and doctors should assess if the patient and family members will be able to cope with the complex medical regimen in order to identify those patients that are at risk of becoming non-compliant. During the pre-operative teachings, nurses interact, explore and agree with patients about the lifestyle that they will have to adapt post-kidney transplantation in order for them to achieve the goal of keeping the graft functioning for as long as they live.

Theme 2: Enhanced motivation and better outcomes

Enhanced motivation and better outcomes were described as the effects of education on patient care. Participants indicated that if patients are educated about their conditions, they will understand what goals they need to work towards to improve their health with better outcomes.

Patients will be motivated to reach certain health goals and be active with their treatment. The study revealed that if patients received proper patient education before surgery, they tend to comply with medical regimen and they recover quickly post-surgery. Moreover, their kidney will not malfunction as they will be able to know that they need to take care of their kidney by living a healthy lifestyle and being able to take their immunosuppressant medication that will ensure graft survival. There will be trust between nurses and patient, which will help in improving care post-operatively and patients will cooperate with whatever measures they have been taught.

Theme 3: Multidisciplinary team approach

The study revealed that pre-operative education needs a multidisciplinary team approach. Participants described preoperative education for kidney transplant patients as a process that needs provision of information to the patients by physicians, nurses, transplant pharmacists, dieticians, and other multidisciplinary teams directly involved in caring for the patients before and after kidney transplant. The study also revealed that family members should be included when pre-operative education is given to the patient. Family members should be equipped with knowledge and skills required to assist and support patients post operatively.

Theme 4: Psychosocial preparation

The study revealed that pre-transplant education is essential for the health care team in order to assess the psychosocial status of the patient in order to determine the psychological preparedness of the patient. By assessing the psychosocial status of the patient, the nurse is able to evaluate if the patient will comply with the medical regimens and make decisions about seeking care. The participants revealed that psychosocial aspects such as emotional and mental preparation of the patients should be assessed when educating patients before kidney transplant surgery. By assessing the psychosocial status of the patient, the nurse is able to identify patients' problems and evaluate if the patient will comply with the medical regimens and make decisions about seeking care.

Theme 5: Patients' knowledge assessment

The study revealed that patients' knowledge assessment about the disease, surgery and outcomes should be assessed before undergoing kidney transplantation. Participants indicated that the health care professionals educating the patient before kidney transplantation needs to have extensive evaluation of the patients' knowledge of the procedure before the patients will go for surgery. Proper assessment and evaluation of patient knowledge by the nurse is of key importance. Evaluation process enables the nurses to understand the patients' actual and perceived limitations in knowledge as well as their learning needs.

Theme 6: Teaching methods

This theme emerged when participants revealed the different kinds of teaching methods used by nurses when they provide education to patients before kidney transplantation. Participants indicated the different teaching methods as follows, verbal and written instructions, booklets and pamphlets, discussions, comprehension and retention of information, teach back technique demonstration, self-care management skills, and peer mentorship. Nurses need to provide education to patients by giving them advices and suggestions using different methods of teaching before they will go for surgery.

5.4 LIMITATIONS OF THE STUDY

The study was conducted in one hospital King Abdul-Aziz Medical City, Riyadh Kingdom of Saudi Arabia. The sample of the study was selected nephrology unit. Saturation of the data was reached, and findings reflect nephrology nurses' views regarding pre-operative patient education for patients undergoing kidney transplant. However, the findings cannot be generalised to all nephrology nurses nursing kidney transplant patients. The researcher used to work in Nephrology Unit and interacted with nurses from the Nephrology Unit and acknowledges that this could have influenced the participants' responses to questions and probing of answers during the interview. Hence, bracketing was used during the interviews to limit the researchers' bias. Although there were limitations, the findings from this study enabled the researcher to accomplish the purpose of this study to be able to present pre-operative patient education for kidney transplant patients as viewed by nephrology nurses.

5.5 CONTRIBUTIONS OF THE STUDY

Clinical nurses apart from undertaking clinical tasks should have a role in or responsibility for giving general information and supporting patients in terms of sharing important information with them. Furthermore, pre-operative education is a way healthcare providers address patients' fears and worries about their surgery. The contribution of this study was that nurses were able to identify the area of improvement in terms of providing patient education for patients before surgery.

Nurses were able to realise that there is a need to be equipped with skills and knowledge that will enable them to share pre-operative information given to patients with confidence. The findings helped with making recommendations for improved quality pre-operative education in practice. Preoperative education interventions will be incorporated in everyday nursing practice. The structured preoperative education, which will be developed by the ward and be incorporated in hospital policies, will help in improving the psychological outcomes of the kidney transplant patients as well as reducing hospital stay and increased compliance among patients' post-surgery.

5.6 RECOMMENDATIONS

Based on the findings of this study, the researcher makes the following recommendations:

5.6.1 Recommendations for nursing practice

Training of nurses in the importance of delivery pre-operative patient education is a key recommendation. The knowledge, skills and experience of the individual staff influences the standard of pre-operative information given to patients. There is a need for a way to empower nurses in order for them to be capable of educating the patients. Therefore, in-service training to all nurses in Nephrology Unit and outpatient clinics is needed to update their knowledge and to increase their ability to take care of kidney transplant patients.

Patient education for kidney transplant patients should be offered pre-operatively and repeated post-operatively to all patients and family members of patients who have undergone kidney transplant surgery. Regular training on pre-operative teaching for kidney transplant patients should be provided using TV, video tapes and brochures to

enhance compliance to health behaviours. Expatriate nurses should have access to Arabic speakers, if necessary, to overcome language barriers and convey accurate messages during patient and family education on pain management.

Multidisciplinary preoperative education

The importance of multidisciplinary cooperation in patient education is needed. There should be a system in place for patients to be educated pre-operatively by all members of the multidisciplinary team who are directly involved in taking care of kidney transplant patients. This would resolve the uncoordinated way of educating patients among members of the health care team. Doctors play an important role in giving education but providing patients with appropriate pre-operative information is not the sole responsibility of the medical staff.

Pre-operative education includes all aspects of patient health care, different health care professionals such as nurses, anaesthetists, psychologists, pharmacologists, dieticians and physiotherapist should be able to deliver a different content of information as preparing patients for surgery is reached through the collaboration efforts of all members of the health care members involved in patient care.

Patient involvement and social support

Patients should be empowered to participate in the process of pre-operative education. Moreover, patients can be provided with peer support so that patients can be encouraged throughout shared experience. Patients who have undergone kidney transplant can talk with current patients about their own experience of the surgery. Family members should be included in order for them to provide support to patients. More importantly, family members can help to reinforce information delivered by the nurses.

Recommendation for policy

The provision of pre-operative education has not received sufficient attention in the hospital. There is a lack of policy in pre-operative education. As a result, a lack of policy of pre-operative patients' education results in lack of coherence in pre-operative education practice in King Abdul-Aziz Medical City. Therefore, the development of policy

for kidney transplant patients and other related kidney surgery is recommended to be developed.

Recommendation for future research

The findings of the study suggest that a low cost pre-operative education intervention is beneficial for kidney transplant patients' outcomes. The study can serve as a basis for future research regarding pre-operative education for kidney transplant patients in King Abdul-Aziz Medical City hospital. The pre-operative education intervention could be used among other patients undergoing various types of kidney surgery. There is an increasing awareness of language barrier among health care workers who cannot speak the same native language with the patients. Many factors are associated with language barrier such as misunderstanding and miscommunications among patients and health care professionals.

Hence, there is a need for observational studies to determine the level and variations among language barrier within National Guard health care users and qualitative research to determine how language barrier is overcome. Therefore, more studies are needed to evaluate effectiveness of long-term follow-up of pre-operative teaching on health care outcome.

The importance of multidisciplinary cooperation in patient education is needed. There should be a system in place for patients to be educated pre-operatively by all members of the multidisciplinary team who are directly involved in taking care of kidney transplant patients. This would resolve the uncoordinated way of educating patients among members of the health care team. Doctors play an important role in giving education but providing patients with appropriate pre-operative information is not the sole responsibility of the medical staff.

5.7 CONCLUSION

This chapter concluded the study on pre-operative patient education for patients before kidney transplant as viewed by nephrology nurses. The study examined the strategies employed by nurses to deliver patient education before kidney transplant. More

importantly, the study revealed that pre-operative patient education requires multidisciplinary team approach and also requires complete assessment of knowledge of the patient regarding kidney transplant surgery. Nurses who participated in the study also acknowledged that pre-operative patient education should first start in the outpatient clinics where the psychosocial status of the patient will be assessed to determine the patient readiness to undergo surgery.

The study also revealed that it is equally important that family members are involved in the education as well in order for them to be able to support the patient post-operatively and act as re-inforcers of what the health care team has already educated the patients. Nurses who participated in the study are aware of important aspects to be considered when educating the patients so that the outcomes of the kidney transplant are successful. Although the nurses are aware of the key points to educate their patients before surgery, it was revealed that there is no coordination among multidisciplinary teams, which makes it difficult to know who educated the patients and how much information was offered to the patient. The findings have enabled recommendations to be made which may benefit the patients undergoing kidney transplant. Against this background, it is concluded that the objectives of this study were accomplished.

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ANNEXURES

ANNEXURE 1

Permission from Unisa IRB Ethics Committee



**RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)**

1 June 2016

HSHDC/523/2016

Ms PM Maake

Student: 4789-504-7

Supervisor: Dr DD Mphuthi
Qualification: PhD
Joint Supervisor: -

Dear Ms PM Maake

Decision: Ethics Approval

Name: Ms PM Maake

Proposal: Pre-operative education for patients undergoing kidney transplant as viewed by Nephrology nurses.

Qualification: MPCHS94

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted for the duration of the research period as indicated in your application.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on [add date of meeting].

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 (Name of unit/sub-unit) Ethics Review Committee. 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
Private Bag 1193, Maitland, Cape Town
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Fax: +27 12 429 4130
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 L Roets

Prof L Roets
CHAIRPERSON
roetsl@unisa.ac.za



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

Approval template 2014

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

ANNEXURE 2

Permission from Nursing Services (Centre of Nursing Education (NS-CNE))

Kingdom of Saudi Arabia
National Guard-Health Affairs
King Abdulaziz Medical City



المملكة العربية السعودية
الحرس الوطني - الشؤون الصحية
مدينة الملك عبدالعزيز الطبية

NURSING SERVICES
Center of Nursing Education (NS-CNE)
Ref. No. MBS/2016/09/04A

Date: 04 Sep 2016 (G)
03 Thul-Hijjah 1437(H)



Date : 04-Sep-2016 Registered
Department : NURSING-ADMINISTRATION
RYD-16-6020-142154

Permission to conduct nursing research at KAMC-R, Nursing Services

Applicant Details:	Ms. Pauline Mmaletshabo Maake , Clinical Resource Nurse, King Abdulaziz Medical City Riyadh, KSA
Title of proposed research study:	Pre-operative patient education for patients undergoing kidney transplant as viewed by Nephrology nurses.

Subsequent to screening review by the Nursing Services Research Committee (NSRC), permission in principle is granted for you to conduct your nursing research study at KAMC-R Nursing Services pending scientific and ethical approval from KAIMRC Research office that is required before you commence data collection. Kindly submit the research project yourself directly to the KAIMRC Research office with this permission letter.

Best wishes for successful completion.

Permission recommended by:

Dr. Mustafa M.E. Bodrick
Chairman, Nursing Services Research Committee
Assistant Professor, College of Nursing - Riyadh KSAU-HS
Director, Nursing Education, KAMC-R & KASCH

Date: 4 SEP 2016

Permission granted by:

Ms. Nabeeha Tashkandi
Acting Associate Executive Director
Nursing Services, KAMC-R

Date: 05 SEP 2016

cc. Dr. Majed Al Jeraisy, Chairman, Research Office KAIMRC (Memo only)


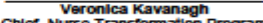
MMB/SL/31 Mat 2016 /Permission to conduct nursing research at KAMC-R, Nursing Services - Template B (without feedback)

P. O. Box 22490, Riyadh 11426
Tel. 2520088
Telex : 403450 NGRMED SJ
KFH-MATERIALS 14574 (05/96) (ORACLE 29795)

ص. ب. الرياض ٢٢٤٩٠ ١١٤٢٦
تلفون : ٢٥٢٠٠٨٨
تلکس : ٤٠٣٤٥٠ NGRMED
٣٨/٢٠٨

ANNEXURE 3

Example of memo writing

	King Abdulaziz Medical City in Riyadh Ministry of National Guard Health Affairs Kingdom of Saudi Arabia	Annexure 3															
Nursing Services																	
+Date <u>31-01-2016</u>																	
H																	
MEMORANDUM																	
To	:	Nurse Managers Nursing services															
Through	:	Ms Jeanette Malan Director Clinical Nursing,															
From	:	Pauline Maake BN 50594 Acting nurse manager ward 08															
Subject	:	Preliminary approval to conduct Nursing Research in King Abdul-Aziz Medical City in Riyadh (KAMC-R) Kingdom of Saudi Arabia Title of Research Proposal for Master Nursing Science Student: Pre-Operative education for patients undergoing kidney transplant as Viewed by Nephrology nurses.															
<p>My name is Pauline Maake, iam one of the nurses working in the hospital in a medical unit.iam a student at the University of South Africa (UNISA) and presently registered a research proposal module as part of masters in nursing.</p> <p>the topic of my research is as follows <u>pre-operative patient education for patients undergoing transplant as viewed by Nephrology nurses.</u></p> <p>Should I be given opportunity to conduct research in the hospital all information collected from participants will be treated in a confidential manner. The list of the outcomes of my research task will be provided to the hospital after the study is completed.</p>																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Nurse Researcher</th> <th style="text-align: left;">Research Supervisor</th> </tr> <tr> <td>Pauline Mmaletshabo Maake</td> <td>David Mphuthi</td> </tr> <tr> <td>Student no:4765047</td> <td></td> </tr> <tr> <td>University of South Africa</td> <td></td> </tr> <tr> <td>Tel no:0503919775</td> <td>0027124292058</td> </tr> <tr> <td>Work extension:+9668011111ext17855</td> <td></td> </tr> <tr> <td>Email address:</td> <td>mphutdd@unisa.ac.za</td> </tr> <tr> <td>Mall code:</td> <td></td> </tr> </table>	Nurse Researcher	Research Supervisor	Pauline Mmaletshabo Maake	David Mphuthi	Student no:4765047		University of South Africa		Tel no:0503919775	0027124292058	Work extension:+9668011111ext17855		Email address:	mphutdd@unisa.ac.za	Mall code:		Approved by: <div style="text-align: center;">  Veronica Kavanagh Chief Nurse Transformation Program </div>
Nurse Researcher	Research Supervisor																
Pauline Mmaletshabo Maake	David Mphuthi																
Student no:4765047																	
University of South Africa																	
Tel no:0503919775	0027124292058																
Work extension:+9668011111ext17855																	
Email address:	mphutdd@unisa.ac.za																
Mall code:																	

ANNEXURE 4

Letter of consent for participants

National Guard Health Affairs

King Abdullah International Medical Research Center
 المركز الدولي للبحوث الطبية
 الرياض - المملكة العربية السعودية

Annexure 4

31 OCT 2016
 Received
 INSTITUTIONAL
 REVIEW BOARD
 (IRB)

01 NOV 2016
 Received
 IRB
 KAIMRC

Cross-sectional surveys

Informed Consent Form

Study Title: Pre-operative education for patients undergoing kidney transplant as viewed by nephrology nurses
Principal Investigator: Pauline Msaake
Study No.:Sp16/098

<p>You are requested to participate in research that will be supervised by <i>(Pauline Msaake)</i> in <i>(Saudi Arabian Royal National Guard Hospital)</i>.</p> <p>This study is about <i>(to explore and describe pre-operative education for patients undergoing kidney transplant so as to make recommendation based on the findings)</i>.</p> <p>Your participation is voluntary and you have the right not to accept filling this survey without giving any reason, and this will not affect your current or future medical care in MINGHA.</p> <p>You don't have to sign this information sheet only you can choose to agree/disagree, your acceptance to complete the survey will be interpreted as your informed consent to participate.</p> <p>Your responses will be kept anonymous. However, whenever one works with email/the internet there is always the risk of compromising privacy, confidentiality, and/or anonymity. Despite this possibility, the risks to your physical, emotional, social, professional, or financial well-being are considered to be less than minimal.</p> <p>If you have any questions about the research, please contact <i>(Pauline Msaake)</i> (P.O. Box 22399 Riyadh 11426/0503919775/men.msaake@ngdha.med.sa).</p> <p>In case you have enquiries related to your rights as a research subject you can contact the Institutional Review Board on Tel. 8011111 Ext. (84) 9-458.</p>	<p>نتمنى انضمامكم لمشاركة في دراسة بحثية سوف يشرف عليها (د. باولين مساك) في (مستشفى القوات المسلحة بالرياض)</p> <p>هذه الدراسة تهدف الى (التعرف على التعليمات المقدمة لمختصين في جراحة الكلى)</p> <p>ان مشاركتك في هذه الدراسة طوعية و لك الحق التام في عدم قبول تعبئة الاستمارة او الانسحاب في اي وقت شاء بدون ابداء الاسباب وان يؤثر ذلك على العناية الطبية المقدمة لك حال اذ في المستقبل في مشيقتك الصحية بوزارة الدفاع الوطني.</p> <p>لا يجب عليك التوقيع على ورقة الموافقة هذه فقط عليك الاختيار سواء اذعير موافق فجرد قيرت كعبه هذا الانسحاب يعتبر بمثابة اقرارك بالموافقة على المشاركة في هذا البحث.</p> <p>ستبقى اذعير على الاسئلة بصرية ومع ذلك فان العمل عن طريق البريد الالكتروني و الانترنت يعني ذلك احتمال لاخترق خصوصية البيانات و سوية المعطيات و تكون و بالرغم من هذه الاحتمالية تبقى الاحتمال البدينة و المعنوية و الاجتماعية و المهنية و المالية المتوقعة عليك ضمن الحد الأدنى من الخطورة.</p> <p>ان كان لديك اي اسئلة حول هذا البحث، يرجى الاتصال (د. باولين مساك) (ص.ب. 22399 الرياض 11426/0503919775/men.msaake@ngdha.med.sa)</p> <p>في حال كان لديك الاسئلة عن المتابعة معك كموضوع بحث يمكنك الاتصال بمجلس الدفاع القومية على هاتفه 8011111 تمهيداً 94458 (84)</p>
---	--

Agree to participate موافق على المشاركة
 Disagree to participate غير موافق على المشاركة

Should not be used, disclosed, or published
 Without written approval from King Abdullah International Medical Research Center

ANNEXURE 5

Participants information letter

1. Introduction	You are being asked to take part in a research study titled:	Pre-operative patient education for patients undergoing kidney transplant as viewed by Nephrology nurses.
	The investigator in this study is:	Pauline Maake Cell :0503919775 Email : maakep@ngha.med.sa
2 The purpose of the research study is:		To explore and describe the pre-operative education for patients undergoing kidney transplant as viewed by nephrology nurses
3. Study procedure:		Before you decide to be in this research study, you must be given the chance to ask questions. You will need to sign the consent document.
4 About participating in this study:		Your participation is voluntary; you may stop participating in this study at any time. If you decide to stop taking part in this study you should tell the investigator.
5. Confidentiality of study records and medical records:		Information collected for this study is confidential; however, representatives of the hospital will receive copies of the study records. In the event of any publication regarding this study your identity will not be disclosed.

Nurse Researcher	Research Supervisor
Pauline Mmaletshabo Maake	David Mphuthi
Student no:47895047	
University of South Africa	University of South Africa
Tel no:0503919775	0027124292058
Work extension:17855	

ANNEXURE 6

Semi-structured interview guide



Annexure 6

Semi-structured interview guide

Semi-structured interview guide for the study: pre-operative education for patients undergoing kidney transplant as viewed by nephrology nurses.

Interview number:			
Date of interview:	day	month	year
Time of interview	Start	finish	



Section 1

Biographical data:

The interviewer will use an (x) in the appropriate box indicated box indicated for the response from the interviewee.

1	Gender	male		
		female		
2	Age: Question: how old are you	1	Below 20 years	
		2	20-29	
		3	30-39	
		4	40-49	
		5	50-59	
		6	Above 60 years	
		3	Nationality: Question: what is your nationality?	

4	<p>Educational level:</p> <p>Question: what is your higher tertiary qualification?</p> <table border="1" data-bbox="497 568 924 790"> <tr> <td>Doctoral</td> <td></td> </tr> <tr> <td>Master degree</td> <td></td> </tr> <tr> <td>Bachelor degree</td> <td></td> </tr> <tr> <td>Diploma certificate</td> <td></td> </tr> </table>	Doctoral		Master degree		Bachelor degree		Diploma certificate	
Doctoral									
Master degree									
Bachelor degree									
Diploma certificate									
5	<p>Professional title:</p> <p>Question: what is your current position?</p> <table border="1" data-bbox="507 949 957 1115"> <tr> <td>Clinical resource nurse</td> <td></td> </tr> <tr> <td>Staff nurse 1</td> <td></td> </tr> <tr> <td>Staff nurse 2</td> <td></td> </tr> </table>	Clinical resource nurse		Staff nurse 1		Staff nurse 2			
Clinical resource nurse									
Staff nurse 1									
Staff nurse 2									
6	<p>Years of experience as nephrology nurse</p> <p>Question: how many years are you working as nephrology nurse in this ward</p> <div data-bbox="539 1274 780 1332" style="border: 1px solid black; width: 150px; height: 25px; margin: 10px auto;"></div>								

Section 2

<p>Central question</p>
<p>Tell me about your views regarding pre-operative patient education for patients before kidney transplant</p> <p>(The conversation may lead to the following probe questions)</p>
<p>Question 1: what do you understand by pre-operative patient education?</p>

ANENXURE 6.1

Example of verbatim transcript of one respondent

Transcript code: P01 (INTERVIEW 8)

Date:17/03/2017

Audio Recorder Code Number: 170317-1154

Duration: 17:10

Key:

I = Interviewer

P8= Participant no: 8

I: Good morning

P8: Good morning

P8: I'm a researcher [

P8: [Yeah

I: I'm conducting a nursing research, my study has been approved by the Hospital and the university, I have asked the permission from the nursing admin and your nurse manager to interview the nurses.

P8: aha

I: The purpose of this study is to explore and describe the pre-operative education for the patient before they will undergo kidney transplant as viewed by a nurse.

P8: aha

I: The information collected for this study is confidential, your identity will not be disclosed. The interview is going to last around 20 minutes to 60 minutes. Before we begin the interview, I will like to confirm that you have read and signed the inform consent form

P8: yes

I: And you understand that your participation is voluntary, and you can withdraw from the study at anytime

P8: Okay

I: I have a tape recorder here that I'm going to use through your permission

P8: aha

I: Do you have any questions before we proceed?

P8: No

I: You are a female, Isn't it?

P8: Yes

I: How old are you?

P8: I'm 28 years old now

I: What is your nationality?

P8: I'm a Filipino

I: What is your higher tertiary qualification? [

P8: [yeah

I: [Uhm.... education?

P8: yeah uuhhhmmmm bachelor's degree but I had units for master's degree

I: What is your current position?

P8: I'm a Staff Nurse 2, SN 2

I: How many years are you working as a transplant nurse?

P8: Ummm... as transplant Nurse in this institution, well I will be coming 3 years this coming August but as transplant nurse I have around 3 years already.

I: Tell me about your views regarding pre-operative patient education before they go for kidney transplant?

P8: Okay....uuhhhmmmm, uuhhhmmmm.... trans...pre-operatively, we need to prepare of course we need to prepare the patient both mentally and physically, so we are going to tell them that they need to as per protocol of the hospital they need to take their showers, they have their consent, they have their kidney pre-op check-up and workups as well, blood works and everything. As per mentally, aside from being cleared by the psyche department and IM, we also uuhhhmmmm.....uuhhhmmmm.....regarding that they can speak English because some are not able to speak English,uuhhhmmmm.....we...they... we are asking them about their fears and then somehow, we are telling them what to expect after the surgery which also lessen their fears and anxiety pre-op, uuhhhmmmm... that's..... that's some.... somehow to summarize them, that's it. We tell them about uuhhhmmmm... how the procedure will go, will go, aside we will just back up what the doctors already told them like for example if the doctors. ah of course pre-operatively the doctors will explain, so we will just ah feed more information like... for them.

I: What are the explanations that the doctors are given to this patient?

P8: So uuhhhmmmm..... based on our.....uuhhhmmmm.....my... based on my (...) understanding, because I don't speak Arabic that much and I ask some of the Nephrology doctors and also the transplant team. They say that they will explain what will happen uuhhhmmmm.... before the whole workup system that they will have different consultations from different parts of theuuhhhmmmm... medical field like dental, psychology.....uuhhhmmmm.....cardiology, if it's an old age.....uuhhhmmmm..... internal

medicine if they have any blood pressure hypertension and diabetes, endocrinology like that, dental and gyne for females. Aside from that, the doctors also explain that they need a lot of blood works and then....uuhhmmm.... the consent of course as for the nursing side we will just tell them that of courseuuhhhmmmm.... how to prepare the patient like.....uuhhmmm.... they need to uuhhmmm.... as I said they need to take showers like that, and then we will also tell them....uuhhhmmmm....., okay, after your surgery.....uuhhmmm, pre-op you will be admitted in this unit and then post-op after your transplant you will be probably going to ICU for 1-2 days and after that you will be back in this unit which alleviates some of the anxiousness of the patients especially they don't know what will happen to them after the surgery. Uuhhhmmmm..... for... aside.... from that and then.....uuhhhmmmm..... just that, we will tell them about different medications, but we don't dwell on medications we just dwell on the how to prepare the patient pre-operatively and willuuhhhmmmm.... alleviate some of the anxiousness because sometimes of course it's a major operation so if they will know that they will go their blood pressure shoots up, so it will be one of the reasons that the procedure will be delayed so we try to keep them calm, tell them to take deep breath, relax and then just the uuhhmmm, overall just make them feel calmer before coming back to the.....uuhhmmm.... before going to the OR.

I: Anything else you want to add regarding your views

I: Anything else you want to add regarding your views

P8:Uuhhhmmmm.... views (...) uuhhmmm (...) so pre-operatively we're all actually most of our care is post-operative aside from the pre we are all for transplantations we give them simple booklet that will explain the.....uuhhhmmmm.....what will happen to them since of course they have a new kidney or a new liver what are to(..) what food they can take or what they cannot take , their medications what are the signs and symptoms that they need to report to the doctors and they need to go to ER..... uuhhhmmmm..... once they are discharged. Few days prior to the discharging, discharge of the patient.....uuhhmmm, we will call for the discharge pharmacy, we will ask for their help because they are the one who will explain all the medications, as I said I am not a native Arabic speaker, so I cannot explain much about the medications and then we will we are doing post-operative we are doing the self- medication teaching in whichuuhhhmmmm..... the discharge pharmacist will come, explain to them. Once they already have the first day of their discharge medication teaching, they will be the one to call the nurses... oohhh it's(..) for example oh it's already after lunch, so he will press the call bell, the nurse, the staff nurse will bring all the bags of the discharge medications.

Usually only for 7 days because they will not bring it home, we just want them to see what it will look like when they go home, we will bring the bag in front of them then ask 'what is your medication that is dueuuhhmmm.... at this hour?' then they will pick up their medication and then nurses will verify with the.....uuhhmmm.... medication in the system

and as well as the teaching from the pharmacist. It is like we are training them how to take their own medications at home, because once they are at home they will not depend on anyone and they don't have nurses to tell them it's already this time you need this medication. As suggested by our unit, it's advisable as well that if you're doing the discharge medication, self-teaching that you will have one more, uuhhmmm.... person with you may it be theuuhhmmm (..), actually we call them the care-giver of the patient, may it be the mother, the father, the daughter, the son, the wife, the husband as long as that person will be with the patient for a long time it's because there is a possibility that sometimes the patient they will forget the medication so at least there is someone else who is aware of those medications that are needed to be given.

I: Why do you need to give education to the patient regarding medication?

P8: Uuhhmmm, we are just re-enforcing the teachings done by the discharge pharmacist because as nurses we are also giving our medications, we need to teach them because once they go home they will be the one to take. As I said they will be the one to take their own medications no one will be telling them that uuhhmmm... it's this time you need to take your medication because sometimes if they lapse ((medication))uuhhmmm.... the drugs for example their FK and their mycophenolate which is also for their transplant(..) the transplant medication, there's a possibility that they will have rejection and then there is a possibility that the levels of those medications will increase in their blood and then there will be an adverse effect from the transplant so it's advisable for them to take undergo the self-medication so that they will be aware of those.....uuhhmmm.... uuhhmmm.....side effects or whatever.

I: How do you do your pre-operative education in the unit before the patient will go for kidney transplant?

P8:.....Uhm... we used to have uuhhmmm.....unit assistant, he or she will be the one to go with us to translate because as I said I'm not an Arabic speaker, to translate what we are trying to say but now we don't have any more in our unit but luckily, we have.....Uuhhmmm.....uuhhmmm.... students that are native Arabic speakers, so we asked for their help they explain to the patient. Usually the OR is in the morning, so we have every day and weekdays, so we have our ah native speakers and also, we have

some staffs who speak Arabic, so we ask their help, we just have to explain to make them feel relax to lessen their anxiousness that's it I think.

I: Anything else regarding how you do your pre-operative before they will go except for usage of unit assistant, the interns and the other staff who can speak Arabic?

P8: I don't think there is(..) because based on our practices that's how we do it usually, aside from what the doctors were saying, of course they will just basically the doctors will be the one to explain everything we are just backing up what they are (...) what they are trying to say.

I: How does the patient education improve patient care?

P8: Uuhhhmmmm.... based on my previous....actually, based on my experience it's better since the patients are aware what will happen to them after the surgery they will be more cooperative rather thanuuhhhmmmm....., blind citing what everything because they will wake up, they're going to surgery they have one cañula like an IV line that's it, then after the surgery they will wake up a central line, so they are anxious what are these for?... why is like this? so what? why do they have, why do I have Foley's catheter?... something like that, if it's not explain to them pre-op, post-operatively they will become agitated, they will become angry so they will not that cooperative, especially after surgery if you ask them to walk around the unit which is what we are practicing early ambulation so that they more lessen the side effects on the operation and for the DVT's asuuhhhmmmm, the patient will refuse because they will think that after surgery you cannot move you need to stay in the bed for 2 to 3 days which is also a disadvantage for them because it will increase the possibilities of DVT. So, if you explain pre-op well their mind is not yet drugged with anaesthesia they will (...) they will remember 'oh yes pre-operatively my nurses told me that I need to walk after the surgery uuhhhmmmm...I will have this kind of cannula, if ever I will have central line, so I will not remove it'.... like thatso at least when they wake up they will not be anxious why they have a lot of connections.....uuhhhmmmm on them, especially the cardiac monitors, why they need those things. That's one, I think that's one of the advantages of the pre-operative teachings of the transplantations.

I: Okay (..) anything else you would like uuhhhmmmm....to add regarding on how this patient education will improve care?

P8:..... Uuhhhmmmm..... as a whole, our practice is okay, but yeah we do have the language barrier but what, what, what we can do? we need to adjust in thisuuhhhmmmmcountry but if we are working in an eng (English) in a country when(...)or a place where the, somehow have a control over the English language, I think it will

be more effective about the patient teaching rather than doing it with another translator because we don't know probably if they translating different thing that in case if you are saying (a) and then the translator (b) and then the patient will understand it as b instead of what you are trying to say, I don't know it's just foruuhhmmm....., to improve our patient education here in our institution, I think we really need translators ((laughing)), we need their assistance for something like that.

I: What are the other instruction you are giving to the patient before kidney transplant? What are the strategies you use to educate patient before they will go for kidney transplant?

P8: Uuhhmmm... aside from the trans(..) yeah, the booklets as well and the coordinators they will be the one to explain everything because pre-operatively the patient comes to us they are already knowledgeable about the operation because they are already doing the...uuhhmmm.... teachings as outpatients before their(..) during their workup they are already being taught by the coordinators, the doctors. For our job as nurses we are just re-enforcing what they are being taught. We have booklets, uuhhmmm..... the booklets have a both language it's either English or Arabic and for the patient or the sitter, or the relatives are allowed to read it so that they will be more knowledgeable what will happen pre, during and after.

I: Aside from the booklet, coordinators, whom else can you involved [

P8: [The doctors?

I: [involve to educate the patient?

P8: The doctors, dieticians. Actually, the whole medical team during the rounds, the morning rounds they are doing. During the morning rounds will have the social worker, the doctors, the dietician, the pharmacist and during that round if the patient have any question they will be the one to directly ask them because during(..) because they are speaking Arabic so I'm not aware what they are talking about actually.

I: What are your suggestions to improve patient education before the patient will go for the kidney transplant?

P8: Ah yeah! The translators and then, I think that it causes we, we can explain and thenuuhhhmmmm.... if ever as much as possible to let the patient feel that they are more that they can be comfortable in asking the doctors because sometimes once they are talking(..) the doctor and the patient are talking in Arabic and once the doctor will leave the room the will bombard the nurse with lots of questions in which they could also ask the doctor and the nurse cannot answer because we are not(..) we do have some legalities that we cannot over stepped the boundaries of the doctors isn't it? So that's it,

make them feel more comfortable in asking questions to the doctors or to the other people because not all the time the nurses can answer every question even we know how to answer it just that we cannot allowed to indulge it more about the specifics because it's the doctors job as well.

I: What explanations are the nurses normally giving to the patient?

P8:uuhhmmm..... because for the specialties of the surgery the doctor should be the one and then sometimes(..) yeah, we are telling them 'yes you will be the... you will be coming back with like this, central line, medications will be like this, but about the intubation and like that the anaesthesia, if they will feel pain during the surgery it's not our job, because in the first place we are not in the OR theatre and then we don't know what will be happening there....so, it will be the doctors supposed to be responsibility to explain to them that they will be having anaesthesia, you will be having like this. So, when it comes to like that, the patient is asking ah what 'if I will feel pain, I will really just tell them.....'wait I will call the doctor and then the doctor will be the one to explain to you' because it's not my jurisdiction to explain those things.

I: And what do you think the doctors explains to the (..) patient?

P8: I have no idea because they are talking in Arabic and I don't understand anything

I: Okay, thank you very much for taking time to talk with me, I really appreciate it.

P8: Sure

** END*

Example of verbatim transcript of another respondent

Transcript code: P02 (Interview 14)

Date: 27/02/2017

Audio Recorder Code Number: 170319-1529

Duration: 18:12m

Key:

I = Interviewer

P14= Participant no: 14

I: Good afternoon.

P14: Hi, Good afternoon.

I: I'm a researcher; I'm conducting a Nursing Research. My study has been approved by the hospital and the university. I've asked the permission from the Nursing Admin as well as from the Nurse Manager to interview nurses.

P14 Okay.

I: The purpose of this study is to... uuhhhmmmm ...explore and.... uuhhhmmmm...describe the transplant nurses' views regarding the preoperative patient education.

P14 Okay.

I: Okay, I want you to know that the information collected for this study is confidential, your identity will not be disclosed. Your participation is voluntary and if you want to withdraw, then you can withdraw at any time.

P14: Okay.

I: The interview is going to last around 20 minutes to 40 minutes. I have a tape recorder that I'm going to use through your permission. But before we proceed I just want to confirm that you have read and signed the inform consent form.

P14: Yes.

I: And you agree?

P14: Agree.

I: Okay. How old are you?

P14:((Laughing)) 51.

I: What is your nationality?

P14: South African.

I: What is your higher tertiary qualification?

P14: Diploma?

I: What is your current position in this unit?

P14:SN1.

I: How many years are you working as nephrology nurse?

P14:1 years.

I: Tell me your views regarding preoperative patient education before the patient will go for kidney transplant?

P14: It tells a long-term outcome of a successful transplant, if the patient is getting the education you will exactly know what to expect and what to do after the transplant has been performed. So, the long-term outcome is very important

I: Okay, anything else you would like to add?

P14: For.....uuhhhmmmm..... because if you give the patientuuhhhmmmm....., education preoperatively, the patient will know that he needs to come the follow up, appointments which is very important especially on the first year of the transplant. Because that can be the first year that the patient, the patient can have acute rejection, uuhhhmmmm.... anduuhhhmmmm, then next thing is, they need to know about medication, that is important to take their rejection medication. The other thing is they need to lead a healthy lifestyle, and exercise is important, and the need to eat a healthy diet. If necessary if they are obese then they need to lose weight because in the end that can also likeuuhhhmmmm.... influence the outcome of the transplant. Uhm..... you want me to go to all the education? or.....uuhhhmmmm...

I: Okay. You mentioned the long-term outcome. Can you elaborate on this long-term outcome?

P14:...Uhhhhmmmm.....the success of the kidney transplant.....uuhhhmmmm....if...uuhhhmmmm.... they are aware of what to do and what to expect, the transplant can last for a long time. But if they are doing all the wrong thing, then the transplant can fail within like in a couple of months or within in the first year. But if they are well educated, the transplant,uuhhhmmmm.... graft will definitely last.

I: Okay and you also mentioned acute rejection. Can you also elaborate on that?

P14: Uuhhhmmmm.... with acute rejection if they are not compliant to take the medication and the rejection medications..... uuhhhmmmm ...they are doing whatever they want, like going out and mix with all the people, because their body will like they seeuuhhhmmmm....this transplant, this kidney as a foreign object. So, their body will like try to reject it and the immunity is low and if they get any infections or anything, there's a high possibility that the kidney can be rejected.Uuhhhmmmm..... so in the first year,

it's a really important that they need to follow all these education for the kidney to (...) like the body to adjust to this new kidney that they have, not only kidney but all the transplants.uuhhhmmmm.... to all these thingsuuhhhmmmm....so, the first year is actually the crucial part. If the body is already adjusted but in the first year or it will take like maybe a longer the chronic rejection for them after the first year to, for the kidney to reject. But if they know everything and the first year is over, that means that the rate is really high that they keep the kidney, they will not reject the kidney. It depends on their compliance.

I: What can you tell me about this antirejection medication?

P14:.... Uuhhhmmmm.... in this hospital we are using tacrolimus, isuuhhhmmmm.... one of the main.....uuhhhmmmm.... antirejection that they are usinguuhhhmmmm.... together with..... uuhhhmmmm.... cellcept is the other one.....uuhhhmmmm..... depending on what they find from the patient, but they are not using it frequently, sirolimus is one of the antirejection medication that they are using.uuhhhmmmm.... normallyuuhhhmmmm... like the first 3 days postop they will use ATG.....uuhhhmmmm.... for the patients if it's...uuhhhmmmm... non-living related kidney transplant.Uuhhhmmmm..... that is a rabbit serum that they are usinguuhhhmmmm.... to give to the patients to prevent them from rejections. And together with that there is normally the premedication we are givinguuhhhmmmmit depends on the doctors what they want to order. But the main things they are normally ordering....uuhhhmmmm.... before that is methylprednisolone that the patient is getting....uuhhhmmmm.... like giving it together with paracetamol and dephenhydramine as pre-med, we are giving it 1 hour before the antirejection medication. After that, depending on the patient blood results they will.....uuhhhmmmm...swap them to PO (per oral).....uuhhhmmmm.... antirejection medication.

I: What do you understand by preoperative education?

P14: That, is everything that the patient needs to know about the out... expectations and the outcome after the transplant. Uuhhhmmmm..... that is what I understand about that.

I: Anything else that you would like to add regarding understanding of preoperative education?

P14:.....Uuhhhmmmm (...), nothing else (..) just to me it is a need to know about the expectations and the outcome after the transplant.

I: What is this expectation?

P14: The expectation is a need to save a transplant, right? And....uuhhhmmmm....., you will give them education. Can I elaborate on the education? You will give them uuhhhmmmm...the outcome (..) The outcome.....uuhhhmmmm.... you need to explain to

themuuhhhmmmm.... that they will have side effect from the medications. Sometimesuuhhhmmmm.... not all the patients will have the same side effects, but things that might happens, common things..... Uuhhhmmmm.....things like the cancer I will not explain to them, that is for the doctor to explain about that..... uuhhhmmmm.... antirejection medications might cause cancer in the end. But likeuuhhhmmmm....., they might have like a new onset of diabetes because some of the medications that they are getting....uuhhhmmmm....., you need to tell them like.....uuhhhmmmm.... let's say some medications that some antirejection medication..... uuhhhmmmm...., how can I put it now? (...) the antirejection they are getting might reject the kidney and can also cause a lot of problem in the end. So, all that side effects of the medications needs to be explained to them. Likeuuhhhmmmm..... some of them can cause diabetes, the hypertension that they already have maybe for the transplant. If it will not be resolved after the transplant it might even, go higher. Uuhhhmmmm...., they might have..... uuhhhmmmm...., increaseuuhhhmmmm....weight because of the prednisolone and other things that they are getting.....Uuhhhmmmm...., what else ?.....uuhhhmmmm... you need to tell them that.....uuhhhmmmm....., about (...) because the immunity will be low right after the transplant, you need to tell them that they need to avoid like big crowds,uuhhhmmmm.... they need to take their medications on time, the prescribed time that the medication was been givenuuhhhmmmm... to them. You need to teach them the hygiene, that is very important because a lot of patients are coming back with a lot of urinary infections just because they were not properly told especially the females.Uuhhhmmmm...., for us it's like a common thing you know how to wipe yourself but if you really talk to the kidney transplant, some of them don't know. So, you need to tell them wipe from the front to the back, things like that. That is common things that we see as common. So, you need to tell them about the hygiene, very important,Uuhhhmmmm...., the diet, they need to have like a low fat, non-cholesterol diet and they need to exercise also which is also important. If they are obese they need to lose weight, we need to refer them to like dietician or whoever is available for them to treat specific categories and specifically that they need to education. Yeah, I think that's.... uuhhhmmmm.... all.

I:How do you do your preoperative education before the patient will go for kidney transplant?

P14: No, unfortunately it's only verbally, because we don't have any pamphlets and things to give to the patients back (..) ,uuhhhmmmm.... I normally try to do it like myself in my broken Arabic but if there's,uuhhhmmmm.... available Arabic speaker around I will take them with me and I will ask them to explain to the patient, everything that patients need

to know. Uhm but it will be a good thing if there is like pamphlets and things that we can give them because you can tell them to go and read in the internet but not all is applicable to them and maybe they will get scared when they read all the things in the internet and they will think all that will apply to them. So unfortunately, we are verbally just telling them what to do.

I: Is that all that you're doing?

P14: Yeah, that's all.

I: Okay, what (..) How does patient education improve patient care?

P14: Definitely the patient knows what to expect after the transplant, theuuhhmmm.... anxiety level will be less anduuhhmmm.... I think the patient will take care of the kidney that,uuhhmmm.... he received if he knows exactly whatuuhhmmm.... to expect and what to do after the transplant. You need to tell them also one thinguuhhmmm.... that we tend to forget, if he comes out from OR, they will come with all the tubes, Foleys catheters, IV fluids, oxygen and all those things because the moment the patient open their eyes and will see all these things some of the patients is very scared. So, this is all the things that we need to tell them. Mobilization, important because a lot of side effects can come from if they, if they are not mobilizing. So (...) that is the things, yeah.

I: Okay, you mentioned that the patient will be scared/ How will you go about making sure that they will not be scared?

P14: By before they go to OR, prepare them for what they will come back with. Uhm, all these IV fluids, oxygen and everything so, if you comeback and you have all that things, I think the patient will know now I will come out with all these and its nothing like out of normal to come back with all these pipes and all these things in my body, so you need to reassure them all the time.

I: Okay. What are the strategies that you use to educate the patient before they will go for kidney transplant?

P14:(...) ((Laughing)), just by talking to them,Uuhhmmm.... verbally and try to reassure themUuhhmmm.... normally I will try to tell them everything, what to expect right? and if there are things that they want to know from the doctors then I will ask the Doctor to talk to the patient also. But reassurance is very important, that is my main thing. Just to reassure them.

I: Since you mention about the doctor, do you have any idea what they are educating the patients regarding kidney transplant?

P14: To tell you the truth, No. I don't know what they are educating the patient on. Because most of the patient that is going for transplant, the education is been done in the clinics. By the coordinator. I don't know whether the coordinator (..) before we have the coordinator thatUuhhmmm.... used to come and to educate the patients before and even after the transplant but now they are not coming to the patient anymore after the transplant. I think they are doing that in the clinic. But personally, here the only thing that I have heard its only when you as nurse or when you ask the doctor to explain something to the patient that is the education that they will giving to the patient, but I don't know what education they are giving into the patient.

I: Okay. What are your suggestions to improve preoperative patient education before they will go for kidney transplant?

P14: I feel we as a nurse and educators and the doctors need to come together so that we can know whatUuhhmmm.... has the patient was educated on and what and encourage the patient to ask questions. Maybe we can have like pamphlets and things for this hospital, specific so that they can know this is what is going to happen to me and this is what they going to do, and this is what my expectations and thing is, for the transplant. So, if all of us can come together and talk to the patient so that we know that the patient really understands it will be a good thing. Because now I'm giving my bit and I, to me I am thinking maybe the doctor told already to the patient I am not telling anything else (...) likeUuhhmmm.... but to me I don't feel comfortable to tell the patient about the expectations of the medications the side effects and things, that to me I'm don't feel comfortable that this medication might cause you cancer in the end. So, for me that is for the doctor to tell the patient about those things. So, if all of us come together and everybody explains their bit that will be a good thing.

I: Any other things that you would like to include when you do the patient education except from the doctors and the nurses?

P14: And the coordinators, because the coordinators are also following up. The transplant coordinator they are following up the patient and are also the ones that is arranging all the procedures and things that needs to be done prior the transplant. So, they also need to be more involved.

I: Okay. Can you explain to me regarding this procedure for the kidney transplant?

P14: Well you know, normally it's only the coordinators that will arrange all these. They need to go to ophthalmology, cardiology, they need to be cleared from all the systems in their body, so the doctors will write all consultations for all the things and the patient will

do that as outpatient. So, when the patients come to us that mean all the procedures is already completed. They will have ultrasound,Uuhhmmm.... (...) abdominal ultrasound because they need to see if there is any abnormalities or things that will like to contraindicate the transplant,Uuhhmmm.... (...) they will have the ophthalmology for their eyes, diabetes education, consultation, (...)Uuhhmmm.... but all the other procedures, they will have lower limbsUuhhmmm.... ultrasounds, for most of them to see if their arteries and veins are good, what else they are doing? there is so many procedures. But seeing that they are doing it as outpatient,Uuhhmmm.... I am not really sure of all the things that they are doing but I know that they are clearing them from head to toe, ear, nose and throat, cardiology, ophthalmology, dentistry, because for dentist also if they have like rotten they can have infection also after the transplant which can complicate the transplant also.

I: Okay, why do you think it is necessary to do all these procedures before the patient will go for the kidney transplant?

P14: Because if the patient, they have any other like uuhhhmmm, complications, right? It's not really worth it to do the transplant, if he have like already,uuhhmmm.... cardiac failure or anythinguuhhmmm.... and is still going for the transplant. Somebody else that is healthy that is maybe only like just renal failure could have benefit more from the transplant it is not just a renal transplant than the one that have many comorbidities.

I: Do you have anything else to add or the strategies?

P14: No, ((laughing)).

I: So, thank you very much for taking time to talk to me, I really appreciate it.

P14: You welcome, I hope I was of some help.

End of interview

ANNEXURE 7

Permission from KAIMRC

Kingdom of Saudi Arabia
Ministry of National Guard - Health Affairs



المملكة العربية السعودية
وزارة الحرس الوطني - الشؤون الصحية



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IRB Office

Memo Ref.No. IRBC/1048/16

E-CTS Ref. No.



RYD-16-419812-166487

Study Number: **SP16/098**
Study Title: **Pre-Operative Education for Patients Undergoing Kidney Transplant as Viewed by Nephrology Nurse**
Study Sponsor: **Non Grant**
IRB Approval Date: **01 November 2016**
IRB Review Type: Expedited Review Full Board
Study site(s): **Central Region**

Dear **Dr. Pauline Maake**
Nurse Manager, Medical Genatric
Ministry of National Guard – Health Affairs

After reviewing your submitted research proposal/protocol and related documents, the IRB has APPROVED the submission.

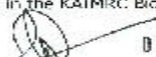
The approval includes the following related documents:

Document/Title	Version	Date
Research Proposal	01	01 Nov 2016
Questionnaire	01	01 Nov 2016
Cross-Sectional – Informed Consent Form	01	01 Nov 2016

The approval of the research study is valid for **one year** from the above approval to expiration date.

Terms of Approval:

- **Annual Reports:** An Annual report must be submitted for approval to avoid termination/suspension of your research.
- **Financial report:** If your study is funded project, details financial report should be submitted with the scientific report.
- **Final Report:** After completion of the study, a final report must be forwarded to the IRB.
- **Retention of original data:** The PI is responsible for the storage and retention of original data pertaining to the project for a minimum of five years.
- **Reporting of adverse events or unanticipated problems:** The PI is responsible to report any serious or unexpected adverse events or unanticipated problems, which could involve a risk to participants or others.
- **Biological samples:** No biological samples to be shipped out of the Kingdom of Saudi Arabia without prior IRB approval.
- **Participant Incentives:** No financial compensation or gifts to be given to participants without prior IRB approval.
- **Storage of biological samples:** All biological samples collected for the purpose of this research must be stored in the KAIMRC Biobank facility.


02 NOV 2016

Dr. Abdallah Adlan
Chairman, Institutional Review Board (IRB)
Ministry of National Guard - Health Affairs

AA/GA/cud

Adlan

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ANNEXURE 8

Editing certificate

EDITING AND PROOFREADING CERTIFICATE

7542 Galangal Street

Lotus Gardens

Pretoria

0008

20 November 2017

TO WHOM IT MAY CONCERN

This letter serves to confirm that I have edited and proofread Mrs PM Maake's dissertation entitled: **"PRE-OPERATIVE PATIENT EDUCATION FOR PATIENTS UNDERGOING KIDNEY TRANSPLANT AS VIEWED BY NEPHROLOGY NURSES."**

I found the work intriguing and enjoyable to read. Much of my editing basically dealt with obstructionist technical aspects of language which could have otherwise compromised smooth reading as well as the sense of the information being conveyed. I hope that the work will be found to be of an acceptable standard. I am a member of Professional Editors' Guild.

Hereunder are my particulars:



Jack Chokwe (Mr)

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Professional
EDITORS 
Guild