Assessment of lifestyle and social related factors in patients with kidney diseases, Tanzania

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ASSESMENT OF LIFESTYLE AND SOCIAL RELATED FACTORS IN PATIENTS WITH KIDNEY DISEASES, TANZANIA

By

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A Dissertation submitted in (Partial) Fulfillment of the Requirement for the Degree of Masters of Nursing (Critical Care and Trauma) of

Muhimbili University of Health and Allied Sciences

October, 2018

CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by the Muhimbili University of Health and Allied Sciences a dissertation titled; *"**Assessment of Lifestyle and Social Related factors in Patients with Kidney Diseases, Tanzania"*** in partial fulfillment of the requirements for the Degree of Master of Nursing (Critical Care and trauma) of Muhimbili University of Health and Allied Sciences.

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Dr. Dickson Mkoka

_____

Date

DECLARATION

I, **Paschal Bartholomew Buay**, declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

Signature ……. **Date ……**

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DEDICATION

This thesis is dedicated to all my lovely wife and children for their moral support during my studies.

ABSTRACT

Background

The prevalence of kidney disease is now increasing and contributes to an increased burden of disease to many low income countries' health systems. The incidence of the disease is estimated to be high and its treatment is unaffordable due to high cost associated with medication and treatment modalities. This brings more challenges especially for patients in low income countries like Tanzania where their low social economic status denies them access to high cost treatment such as dialysis.

Aim

The main objective of this study was to assess lifestyle and social related factors in kidney diseases patients in Tanzania.

Method

This study was conducted at MNH; the hospital was purposely selected because it is one of the national referral hospital providing specialized renal services. The target population for this study was all patients who have developed kidney diseases exclude low income unable to afford dialysis. A total of 374 respondents who had renal disorders were included. Data were collected using open and closed questions which were divided into several parts capturing demographic characteristics, lifestyle and social related factors to kidney diseases.

Data from questionnaires were cross-checking to detect errors and omissions, coded according to the number of variables and their responses and finally tabulating into the complete dataset. In addition to that, statistical analysis was performed using the SPSS 20 software program. The data were analyses by descriptive statistics, including the percentages.

Results

Findings of the study revealed that the prevalence of kidney disease in this study was more in males (63.6%) than in females (36.4%). Aged between 45 and 60 years were the most group with highest (33.42%) and (28.9%) had age of above 60 years while the rest were below 45 years. Mean while 58% were married and the rest were single, widowed or separated. About 35.8% had primary education followed by 34.5% who had secondary education. The rest either had higher education or did not have any formal education.

Existence of previous chronic disease, 25.9% reported to had diabetes mellitus prior to development of kidney disease.

With regard to lifestyle related factors, it was found that physical activity a positive effect on any chronic diseases conditions. The number of participants who were physically inactive was higher than that of the physically active.

In this study about 27.00% of the participants only reported to exercise daily while 53.7% reported to not exercise at all. Meanwhile majority of participants were having income range between 100,000 Tshs-500,000Tshs per month (44.38%).

More than half of the participants were also taking alcohol (55%). About 34.49% of participants indicated to drink more than 3 drinks per day.
Weight of an individual on the other hand has shown to be risk of kidney disease; about 44.38% of participants were overweight about 17% were obese.

Conclusion

It can be concluded that both social and lifestyle related factors identified in this study associated with the kidney disease. These findings supplement the previous findings which were reported by other studies conducted in different parts of the world. More studies are needed and community mobilization in Tanzania to prevent the consequences of these factors that can be modified by the healthy lifestyle practices.

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LIST OF ABBREVIATION

CKD	-	Chronic Kidney Diseases
WHO	-	World Health Organization
SNS	-	Social network score
ESRD	-	End Stage Renal Diseases
KDOQI	-	Kidney Diseases outcome Quality Initiatives
NKF	-	National kidney foundation
GFR	-	Glomerular filtration rate
BMI	-	Body Mass Index
WC	-	Wrist circumference
QOL	-	Quality of life
PA	-	Physical Activity
SES	-	Socio economic status
MNH	-	Muhimili National Hospital
CI	-	confidence Interval
SPSS	-	Statistical Package for social Science
MOH	-	Ministry of health

DEFINITION OF TERMS

1. **Kidney disease** includes conditions that damage kidneys and decrease their ability to keep one healthy by doing its normal function.

2. **GFR - glomerular filtration rate** is the test to measure the level of kidney function and determine the stage of kidney disease.

3. **Kidneys**- are two kidney bean shaped organs located one on either side of the mid-back below the ribcage.

4. **End Stage Renal Diseases (ESRD)** Is when kidney function decline with (GFR <15 mL/min/1.73 m).

5. **Life style:** Is a way of living of individuals, families (households), and societies, which manifest as coping with their physical, psychological, social, and economic environments on a day-to-day basis.

6. **Social factors;** The facts and experiences that influence individuals' personality, attitudes and lifestyle.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

The burden and magnitude of kidney disease is one of the current global health challenges. The impact of the disease socially and economically is high and currently it affects individuals early in their productive years and brings negative consequences for their quality of life (Stack, et al., 2014; Abraham, et al., 2016). A number of epidemiologic studies assessed the prevalence of kidney disease in different populations and used different equations to estimate kidney function (Zhang & Rothenbacher, 2008; Stack, et al., 2014; Abraham, et al., 2016; Hill, et al., 2016). Based on the classification, globally the incidence of chronic kidney diseases is estimated to range between 1.5% and 43.3% (Hill, et al., 2016). Using modifiable lifestyle and social risk factors Dunkler, et al., (2014), observed the 31% incidence and progression of early kidney disease among those with type 2 diabetes. Chronic kidney diseases have also been associated with the development of End-Stage Renal Diseases and greater risk of cardiovascular morbidity and mortality (Nitsch, et al., 2013; de Pinho, et al., 2015).

Classification of kidney disease

Definition and classification of the chronic kidney disease established by the Kidney Disease Outcomes Quality Initiative (KDOQI) of the National Kidney Foundation (NKF) in 2002 (Levey, et al., 2003). Guidelines for classification and management of chronic kidney diseases have been subsequently updated by including better communication and have facilitated intervention at the different stages of the disease (KIDGO, 2013). The guidelines define kidney diseases as either kidney damage or a decreased glomerular filtration rate (GFR) of less than 60 mL/min/1.73 m2 for at least 3 months (Schnaper, 2014). Whatever the underlying etiology, once the loss of nephrons and reduction of functional renal mass reaches a certain point; the remaining nephrons begin a process of irreversible sclerosis that leads to a progressive decline in the GFR (Arora & Batuman, 2017).

The stages of kidney diseases are classified as follows; Stage 1: Kidney damage with normal or increased GFR (>90 mL/min/1.73 m 2); Stage 2: Mild reduction in GFR (60-89 mL/min/1.73 m 2); Stage 3a: Moderate reduction in GFR (45-59 mL/min/1.73 m 2); Stage 3b: Moderate reduction in GFR (30-44 mL/min/1.73 m 2); Stage 4: Severe reduction in GFR (15-29 mL/min/1.73 m 2); Stage 5: Kidney failure (GFR <15 mL/min/1.73 m 2 or dialysis) (Arora & Batuman, 2017).

In the United States, African Americans are at increased risk for all stages of kidney diseases with the gap in cumulative risk between African Americans and Caucasians increasing in parallel with the severity of kidney diseases (Ojo, 2014). The incidence of ESRD kidney disease stages stage 5) is 783 per million populations in African Americans compared to 295 per million populations in non-Hispanic Whites.

Risk factors for Kidney Diseases

A study has reported that the common risk factor for kidney diseases includes aging, hypertension, diabetes mellitus, and metabolic syndrome (Michishita, et al., 2017). Others include unhealthy behaviors such as smoking, heavy alcohol intake, obesity, lack of physical exercise habits and unhealthy eating habits (White, et al., 2009; Heiwe & Jacobson, 2014; Gutiérrez, et al., 2014; Kovesdy, et al., 2017). Michishita, (2017), added that lack of habitual moderate exercise, late-night dinner, and bedtime snacking increase the risk of developing chronic kidney diseases.

The accumulation of unhealthy lifestyle behaviors has been shown to be associated with the incidence of cardiovascular diseases, stroke, metabolic syndrome, type 2 diabetes, hypertension, and dyslipidemia (Tajima, et al., 2014; Eguchi, et al., 2014). Moreover, number of studies has shown the relationship between social factors including stress, financial worries, the size of the social network and education and non- communicable disorders including kidney diseases (WHO, 2016). There is a need for further study focusing on identifying the association of context specific life style behaviors and social factors with an increase prevalence of chronic kidney disease in Tanzania.

1.2 Problem statement

The prevalence of kidney disease is now increasing and contributes to an increased burden of disease in many low income countries' health systems (Ojo, 2014). The incidence of the disease is estimated to be high and its treatment is unaffordable due to high cost associated to medication and treatment modalities for the diseases. This brings more challenges especially to patients in low income countries like Tanzania where their low social economic status deny them access to high cost treatment such as dialysis (Neuen, et al., 2017). The prevalence of the diseases in entire africa is estimated to be 2% to 41% (Elhafeez et al. 2018)

A body of literature has established the relationship between health behaviors and risk factors for kidney disease in different populations (Dun kler, et al., 2013; Michishita, et al., 2017; Gutiérrez, et al., 2014; Lee & Chung, 2014). Different methodologies have been applied to establish the body of understanding but the findings cannot be generalized in all populations as there is a variation in cultures and taboos which trigger someone's lifestyle. For example, Dunkler, et al., (2014), associated risks for advanced kidney disease with unhealthy behaviors, lower social class, and poverty. Other studies have relating progression of advanced kidney diseases to alcohol intake and physical activity (Dunkler, et al., 2014; Michishita, et al., 2017).

In recent years, there has been an increase in the number of people who develops kidney diseases in Tanzania, and the trend is across all age groups. A number of interventions have been put in place including establishing of dialysis units in the country's national hospitals as well as improving overall health care services for non communicable diseases including kidney disorders. As such interventions focus on curative and add burden to the medical care costs. However adoptions of strategies focusing on disease prevention can be cost effective. As the disease is known to be an outcome of the risk factors such as lifestyle and social factors (Dunkler, et al., 2014), identifying such factors could be one step towards developing contextual specific intervention focusing on prevention of the diseases occurrence.

However, there is scarcity of studies investigating the lifestyle and social factors related to kidney diseases in Tanzania. Furthermore little is known about specific lifestyle behaviors and social related factors of patients with kidney diseases currently receiving care at Muhimbili National Hospital. Therefore, this study aims at assessing lifestyle and social

related factors and the prevalence of kidney diseases. Clarification of the influence of the combination of unhealthy lifestyle behaviors and social related factors on the prevalence of kidney diseases may help to demonstrate the importance of lifestyle modifications and consideration of social factors in kidney diseases prevention.

1.3 Rationale of the study

The purpose of this study was to generate data required to gain insight on lifestyle and social factors that increasing the number of patients who develops kidney diseases as the number of CKD patients is higher among the patients who need critical care and most of them with very poor outcome when they reach critical stage and to determine the future direction of the interventions on prevention of non-communicable diseases complicating to kidney diseases in Tanzania.

The findings of the study can be used by hospital management as well as the Ministry of Health, Community Development, Gender, Elderly and Children and other health implementing partners to create awareness of the preventable factors for chronic kidney diseases which are related to lifestyle and social habits. Furthermore, the study findings will inform critical care nurses on the preventive factors for kidney diseases and hence help develop preventive messages to carry to the community targeting reduction of patients who develop kidney diseases and end up in need of critical care services. In this way, the critical care nurses will be involved in addressing preventable health problems and hence break the culture of just confining their services within the walls of critical care units.

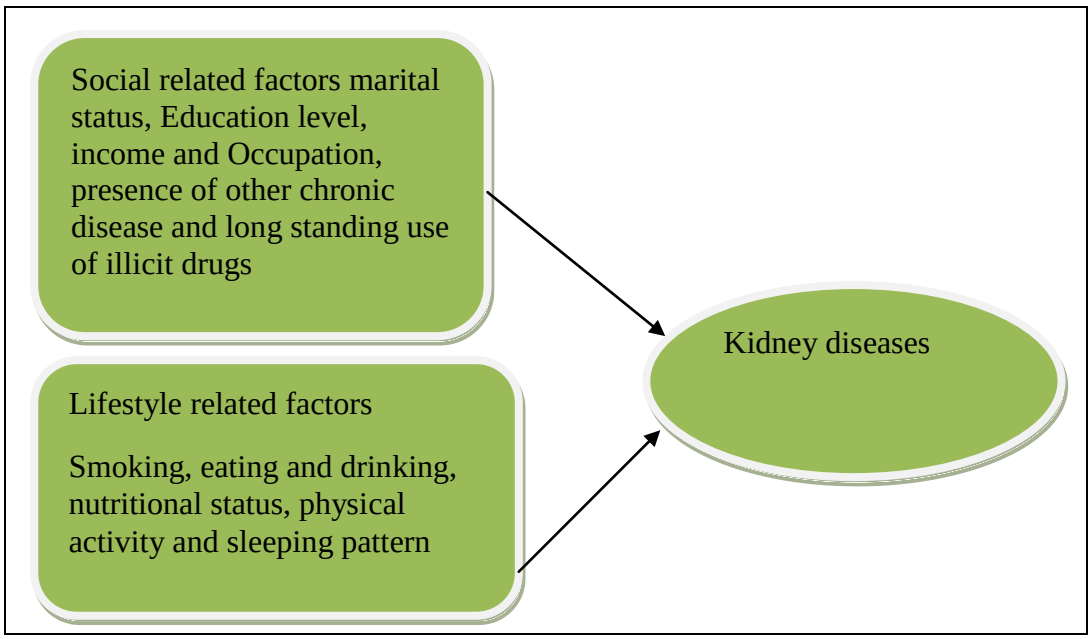
1.4 Conceptual framework

Assessment of lifestyle risk factors for developing kidney disease is well reported in literature. The majority of the studies have investigated the relationship of lifestyle and social related factors in etiology of kidney diseases (Amano, et al., 2017; Beddhu, et al., 2009; Dunkler, et al., 2014; Gutiérrez, et al., 2014; Chang, et al., 2013; Lee, et al., 2016 (Michishita, et al., 2017). However, the majority of these studies have revealed different findings in different environments. Some have found that the risk of kidney disease is related to physical exercise, obesity, socio-economic factors and alcohol intake, unhealthy eating habits as well as poor sleeping patterns. According to (Dunkler, et al., 2014), kidney diseases were more associated with the physical social network, defined as the number of social

interactions and personal relationships (social network score, SNS), education, alcohol intake, and physical activity.

In this study the researcher tapped from the available empirical literature to come up with conceptual framework for the study which integrated demographic characteristics, physical activity pattern, eating and drinking habits, smoking habits, and sleeping pattern which are known to be associated with chronic kidney diseases.

Figure Conceptual framework



In this study, social and lifestyle related factors were the independent variables which have an effect on the incidences of kidney disease (dependent variable). It was hypothesized that;

1.5 Research questions

Is there any unhealthy social and life style related factors in the kidney disease Patients in Tanzania?

1.6 Objectives

1.6.1 Broad objectives

To assess lifestyle and social related factors in kidney diseases patients in Tanzania.

1.6.2 Specific objectives

1. To determine social related factors among kidney diseases' patients attending renal clinics at Muhimbili National Hospital.
2. To determine lifestyle related factors among kidney diseases' patients attending renal clinics at Muhimbili National Hospital**.**

CHAPTER TWO

2.0 LITERATURE REVIEW

Introduction

This chapter presents a review of relevant literature concerning prevalence of chronic kidney diseases worldwide, developing and Sub-Saharan Africa and in Tanzania in particular, risk factors and their associations for increased number of patients with chronic kidney diseases. The review is aimed to identify gaps based on the lifestyle related and social risk factors for chronic kidney diseases**.**

Prevalence of kidney diseases

The incidence and prevalence of kidney disease have increased in the recent years in developed and developing nations and are consuming a huge proportion of healthcare finances in developed countries while contributing significantly to morbidity, mortality and decreased life expectancy, particularly in developing countries (Okwuonu, Chukwuonye, Adejumo, Agaba, & Ojogwu, 2017). The size of the population at kidney diseases risk is influenced by regional differences in demographics, different approaches to diagnosis and management, and effectiveness of local interventions to address lifestyle-related risks (Luyckx, et al., 2017).

According to the registries of different countries including the United States, kidney diseases affects 10–16% of adults around the world (Amano, et al., 2017). Between 2005 and 2015, the prevalence of diabetic kidney disease increased by 39.5% globally (Neuen, et al., 2017). In developing countries, the prevalence of kidney disease is said to increase with an estimated with annual increase of 5-8% in the United Kingdom (UK), 11% in the United States of America (USA) (Akpan, et al., 2016). In Tanzania the prevalence of ESRD is estimated to be 75 patients per million populations (Munuo, 2014).

According to the study done in Nigeria by (Okwuonu, et al., 2017) the prevalence of some established kidney diseases risk factors were old age, hypertension, diabetes mellitus, and family history of kidney disease. According to Dunkler, et al., 2014, roughly one-third of individuals with diabetes develop chronic kidney disease (CKD) and up to 50% of the dialysis population is diabetic.

Association of lifestyle and social factors for kidney diseases

The common risk factors for kidney diseases investigated in different study population included hypertension, diabetes mellitus, obesity, proteinuria, and hematuria as most of these condition are relating with outcome of life style (Akpan, et al., 2016). In Mexico, the country with the highest kidney diseases death rate in the world, more than half of all cases of end-stage kidney disease were attributable to diabetes (Neuen, et al., 2017). Similar patterns have been reported in China and India, signifying epidemiological shifts in metabolic and cardiovascular risk factors, particularly in middle-income countries (Neuen, et al., 2017).

Smoking as risk factor for kidney diseases

Studies have indicated the correlation between urine albumin excretion rate and number of cigarette smoked. Those with more than 20 cigarettes had more chance of developing kidney diseases (Pinto-Sietsma, et al., 2000). The study of Briganti, et al., (2002) involving 11,247 randomly selected, population-based Australians, showed that lifetime smoking exposure was significantly associated with kidney diseases stage 3 or more in men but not in women. Some other studies on the other hand have found no association between smoking and CKD (Vupputuri & Sandler, 2003). Further analysis on the risk of smoking and kidney diseases has shown that individuals who snuff tobacco are significantly presented with high prevalence of developing kidney diseases (Ulasi, et al., 2009). Since then, numerous cross-sectional and longitudinal studies have provided evidence of the deleterious effects of smoking on kidney function, including prevalent and incident albuminuria, progression from micro- to macro albuminuria, as well as GFR decline (Okwuonu, et al., 2017).

Alcohol intake and kidney diseases

Alcohol has been linked as cause of kidney disorders in some clinical and experimental studies found drinking of three or more drinks per day were more associated with kidney disease. Shankar et al (2006) in their study reported heavy drinking is associated with kidney diseases. Alcohol may have both positive and negative effects. While moderate alcohol consumption is associated with a decreased risk, heavy alcohol consumption is associated with an increased risk of kidney diseases (Wakasugi, et al., 2013).

Obesity and kidney diseases

There are number of studies that have shown an association between measures of obesity and both the development and the progression of kidney diseases (Kovesdy, et al., 2017). Higher BMI is associated with the presence and development of low estimated GFR, with more rapid loss of estimated GFR over time and with the incidence of ESRD (Chang, et al., 2013). On the other hand, elevated BMI levels (class II obesity and above) have been associated with more rapid progression of kidney diseases in patients with pre-existing kidney disease (Lu, et al., 2014; da Silva Junior, et al., 2017).

A few studies examining the association of abdominal obesity using WHR or WC with kidney diseases describe an association between higher girth and albuminuria, decreased GFR or incident ESRD independent of BMI level (Kovesdy, et al., 2017). Increased risk of kidney diseases has been reported with obesity (Vupputuri & Sandler, 2003) but few studies have described an inverse relationship between BMI and kidney diseases (Tokashiki, et al., 2009). (Ulasi, et al., 2009) found correlation between abdominal obesity and kidney diseases. Abdominal obesity was reported to be associated with poor renal outcome and increase mortality rate in patients with End-Stage Renal Disease transplant (Lee, et al., 2016**).**

Physical activity and kidney diseases

Studies have shown that physical inactivity is highly associated with kidney diseases and mortality in end stage renal diseases (Jafar, et al., 2015). Other studies have suggested that higher levels of physical activity were not significantly associated with reduced mortality in the kidney diseases population (Beddhu, et al., 2009). Tsai, et al., (2017), examined the relationship between physical activity and adverse clinical outcomes and quality of life (QOL) in kidney diseases and concluded that physical outcome is predictor of kidney diseases outcome. Different, although small studies, overall agree showing significantly lower levels of PA compared to age-matched control individuals White, et al., (2011), examined the association between leisure-time physical activity and risk of chronic kidney disease in a prospective, population-based cohort of Australians aged ≥25 years and suggested more studies to establish the existing association between physical inactivity and risk of chronic kidney diseases.

Unhealthy eating habits

An increased intake of sodium, sweetened beverages and foods with phosphorus has also been reported to increase development of kidney disease (Robles-Osorio & Sabath, 2016). (Wachukwu, et al., 2015) reported association between an increased intake of fast foods and kidney diseases. (Michishita, et al., 2017) reported unhealthy diet including high levels of dietary animal fat, sodium, and soft drink consumption leads to the development of renal dysfunction.

Socio-economic factors and risk of kidney diseases

There is the association between lower socioeconomic statues (SES) such as income, education and occupation and other unhealthy lifestyles or metabolic risks of developing kidney disease (Amano, et al., 2017). Multiple studies conducted in the United States and Canada has shown a strong association between low socioeconomic status and higher incidence and prevalence and more complications related to kidney diseases (Robles-Osorio & Sabath, 2016). A German cross-sectional study of individuals with diabetes and kidney diseases described no substantial association of socioeconomic status with prevalent GFR or albuminuria and kidney diseases (Wolf, et al., 2011). (Garcia-Garcia, et al., 2015) confirmed on the association between socioeconomic status and kidney diseases. Patient education levels were more associated with development of chronic kidney disease (Dunkler, et al., 2014). Studies have shown association between the prevalence of kidney diseases and gender, the association is higher in women compared to men (Stack, et al., 2014).

So according to the registries of different countries including the United States, kidney diseases affects 10–16% of adults around the world (Amano, et al., 2017). Between 2005 and 2015, the prevalence of diabetic kidney disease increased by 39.5% globally (Neuen, et al., 2017). In developing countries, the prevalence of kidney disease is said to increase with an estimated with annual increase of 5-8% in the United Kingdom (UK), 11% in the United States of America (USA) (Akpan, et al., 2016). In Tanzania the prevalence of ESRD is estimated to be 75 patients per million populations (Munuo, 2014).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

The study used quantitative approach with cross sectional descriptive design. This design was chosen because study objectives aim to assess the lifestyle and social related factors in patients with kidney diseases at a point in time. In addition, these study designs mainly focus to gather information from one category of respondents who by virtue of their health status, will contribute sufficiently to provide data for this study.

3.2 Study area

This study was conducted in Dar es Salaam. Dar es Salaam is the largest city in Tanzania with 4 million people, with a population rate increase of 4.39% annually (URT, 2012). Administratively, Dar-es Salaam is divided into five municipals namely: Ilala, Kinondoni, Temeke, Ubungo and Kigamboni. The city hosts the Muhimbili National Hospital and MUHAS Medical Centre the newly inaugurated academic hospital which attends referrals from all district hospitals in Dar es Salaam, health centers and several private health facilities.

This study was conducted at MNH. This hospital was purposely selected because it provides specialized renal services including dialysis to patients with kidney diseases and it is the only the place one can find the type of patients needed for the data collection.

3.3 Study population, inclusion and exclusion criteria

The target population for this study was all patients with kidney diseases attending renal dialysis clinic at Muhimbili National Hospital.

3.4 Inclusion criteria

Participants to be involved in the present study were all patients diagnosed with renal problems and attending nephrology and renal dialysis clinic at the selected site for study. All those who gave their written consent to participate in the study were included.

3.5 Exclusion criteria

The study excluded all patients who were critically ill during the data collection.

3.6 Sample size and sampling technique

A single proportion sample size estimate was determined by using the Kish Lesline (1965) formula:

$$n = \frac{Z^2 P (100 - P)}{\varepsilon^2}$$

Where;

n = Minimum required sample size

Z = percentage point of normal distribution corresponding to the level of confidence (1.96 for 95%) Confidence Interval.

ε = Margin of error, it is preferred to be 5%.

According to Stanifer, et al., (2015), the overall prevalance of patients with kidney diseases with no association of other chronic diseases were 49.1%.

Therefore in this study;

$n= \{1.96^2 \text{ X } 49.1 (100-49.1)\}/5^2$

n= 384

To adjust for non-response rate (f) of 10%, the adjusted sample size (N) 394 clients. Sample size for the study aimed to include 394 patients but at the end of the study only 374 participants agreed to participate into the study. This represents 94.9% of the targeted sample size which is reasonable for analysis.

3.7 Sampling Techniques

A combination of both purposive and convenient sampling techniques was used. Purposive sampling technique was chosen in selection of the study facility for data collection because it is specialized in provision of care for patients with kidney diseases. On the other hand, convenient sampling was used to select respondents who were available at the renal unit at Muhimbili National Hospital during data collection period.

3.8 Data collection Methods

This study used semi-structured questionnaire with open-ended and closed-ended questions. These questionnaires where adapted from different study done before on kidney diseases and modified by the researcher to fit the study. This method was used to obtain information from the study participants. This instrument was chosen bearing in mind the time and medical conditions that some of the patients are in especially when they are in dialysis sessions. All consented participants who need to participate in study were required to fill the administered questionnaire to insure the safety of the researcher and. This instrument was translated from English language into Swahili language (the Tanzanian national language) because the majority of participants were expected to be comfortable with the Swahili language. Participants' were recruited from those attending renal clinic at Muhimbili National Hospital. All interview were face to face between clients during the clinics and some of those who are able not seriously sick were given the questionnaire to fill for their own. Participants were given full information about the study; time and freedom to decide to participate without forcing and the privacy of the information from the participants were highly considered. No one is forced to be in the study and no any conversing power used to participate and all who are available during data collection were asked permission to participate. Questionnaires were given to two different people to read prior administration to participants to insure reliability and validity**.**

3:9 Study variables

The dependent variable was the prevalence of kidney disease.

Independent variables included; life style and social related factors.

3.10 Assessment of lifestyle behaviors

In this study, lifestyle related behaviors included physical activities and pattern of physical exercise, eating and drinking styles; smoking and heavy alcohol drinking was assessed using a standardized self-administered questionnaire which was developed by (Dunkler, et al., 2014) and being adopted for this study. These factors were grouped into the following; habits of doing physical exercise (time, frequency per week and intensity of physical exercise, active and inactive physical exercise); Responses of drinking and smoking habits were assessed using the following questionnaire items (with "yes" or "no" responses): drinking

habit (not drinking every day, number of drinks per week (one drink equaling 1.5 ounces of hard liquor, or one glass of beer/wine), stratified by World Health Organization criteria; nutritional status, (BMI).

Assessment of Social factor

The components of social factor included education level, employment, income, family social support and community safety. The question focused on the average of income per month, for age of the participant, where is he/she working as source of income**;** and the income was ranked in different groups for those with lower income per month means below 100,000/= are considered as of low income and between 100,000/= to 500,000/= are of lower middle 500,001 to 1,000,000/= are of upper middle and more than these are considered as higher income how is patient living with family separated with or living together as a family and support each other.

3.11 Data Analysis

Data collected were processed and analyzed by using Statistical Package for Social Sciences (SPSS) version 21software. Data were checked for accuracy and completeness before analysis. All questionnaires with inconsistency fillings were rejected. Complete filled and clean questionnaires were coded and entered into computer ready for analysis. Descriptive statistics was used to analyze data that obtained from questionnaire using percentages, and frequencies.

3.12 Disseminating Plans

Report of this study was submitted to Muhimbili University of health and Allied science school of Nursing Departments of clinical nursing. The findings also were presented in different nurse's conferences; Ministry of Health, Community Development, Gender, Elderly and Children, and will be ready for Publications in international journal and ready for further use.

3.13 Ethical Consideration

Ethical approval was obtained from the institutional review body that is responsible for ethical approval at Muhimbili Health and Allied Sciences (MUHAS) at the Directorate of Research and Publications prior to the commencement of the study. Permission to conduct the study was also obtained from the office the Director of the Selected Hospital.

Risk versus benefits

The study is not interventional no any harm is expected to the participants and no any compensation is expected to be done to them for participating. Although there is no direct benefit they will get, the results from this study will benefit both patients and health workers as it will provide clear information to whether lifestyle and social factors have influence or no in developing kidney diseases.

Confidentiality and Consent

All study participants were informed about the purpose of the study and written informed consent were obtained from them. Participants were informed about the benefits of the study and were assured that there is no any harm to them for participating, with emphasis on confidentiality and the right to withdraw from the study at any time. The staff of the facilities where study was conducted was not involved in any way of either interviewing or administering questioner of the patients and no staff members was allowed to take post.

CHAPTER FOUR

4.0 RESULTS

This chapter presents results starting with analysis of participants demographic data. This is followed by analysis of data regarding lifestyles related factors for chronic kidney diseases. The last part of this chapter describes analysis of data on social related factors for chronic kidney diseases.

General Demographic Data

A total number of 374 patients with kidney diseases attending clinic were interviewed on their social and lifestyle related factors for kidney diseases. Among the participants interviewed male were 238 (63.6%) and female 136 (36.4%). Age distribution of the participants assessed were as follows, 45-60 years were 33.4%, above 60 yrs were 28.9% , aged 30-44 years were 19.25% and below 30 yrs were 18.45% .

With regard to marital status, about 58.65 of participants who participated in this study were married, while the remaining participants were single, widowed or separated.

About 35.8% participants had primary education followed by 34.5% who had secondary education. The remaining participants where either having no formal education or have higher education (See Table 1 below).

Table 1: Demographic Characteristics of Study Participants (n=374)

Demographic characteristics (N=374)	Frequency(N)	Percentage (%)
Gender		
Male	238	63.63
Female	136	36.36
Age		
30-44 years	72	19.25
45-60 years	125	33.42
Above 60 years	108	28.90
Marital status		
Single	88	23.52
Married	219	58.56
Widow/separated	67	17.91
Educational level		
No formal education	23	6.15
Primary education	134	35.82
Secondary education	129	34.49
Higher education	88	23.53

Social related factors for kidney diseases among patients attending renal clinic and dialysis clinics.

This study assessed a number of social related factors among patients with kidney disease that attend renal clinic and dialysis clinics. Among patients with kidney disease, about 63.6% were male and 36.4 were female. In this study, more than 33.4% were patients aged between 45-60 years. About 28.9% of participants had age of above 60 years. And about 19% of participants had age below 45 years old. With regard to marital status, almost more than 58% were married and the rest were either, were single, widowed or separated. The study also assessed participants' education status and presence of kidney disease. About 35.8% had primary education followed by 34.5% who had secondary education. The rest was either had higher education (23.5%) or not have any education (6.1).

Based on occupation status of participants, majority of them were working (77.0 %) and about 12.6 % were not working .About 10.6% of the participants were students. With regards to type of work the participants were involved with, about 54% of participants indicated to be involved with some light work and 45.2% were involved in heavy work.

Study participants were also assessed on existence of previous chronic disease. Among the participants recruited in this study, 25.9% reported to have diabetes mellitus prior to development of kidney disease.10.42% reported to have hypertension before diagnosed to have kidney diseases and others reported to have diabetes and hypertension (8%); HIV (7.2%) and heart diseases (6.7%). Surprisingly, more than 40% reported to have no existing disease prior to development of kidney disease.

Participants were also assessed on their medication use history before being diagnosed with kidney disease. About 45.6 % indicated to have a long standing use of medicines before being diagnosed with kidney disease, and 8.5% indicated to have long standing use of herbal medicines before being diagnosed with kidney disease. More than 37?%, however, reported to have no history of prolonged use of any medication before being diagnosed with kidney disease Other variables representing social factors included presence of other family members who have kidney diseases. Most participants indicated to have no family member who has history of kidney diseases. (See the table 2 below).

Table 2: Social related factors for kidney diseases (no. 374)

(N=374)	Frequency(N)	Percentage (%)
Gender		
Male	238	63.63
Female	136	36.36
Age		
30-44 years	72	19.25
45-60 years	125	33.42
Above 60 years	108	28.90
Marital status		
Single	88	23.52
Married	219	58.56
Widow/separated	67	17.91
Educational level		
No formal education	23	6.15
Primary education	134	35.82
Secondary education	129	34.49
Higher education	88	23.53
Occupational status		
Working	288	77.00
Not working	47	12.56
Student	39	10.43
Types of work		
Light work	205	54.81
Heavy work	169	45.19
Previous chronic diseases		
Diabetes mellitus	97	25.93
Hypertension	39	10.42
Heart diseases	25	6.70
Injury	2	0.53
HIV	27	7.21
Diabetes and hypertension	31	8.29
No History of diseases	153	40.90
History of long standing treatment use prior kidney diseases		
Herbal	32	8.50
Hospital drugs	170	45.45
Both herbal and hospital drugs	33	8.80
No history	139	37.16
Any family member having kidney diseases		
Yes	82	21.92
No	292	78.07

Lifestyle related factors among kidney diseases' patients attending renal clinics

The study also assessed lifestyle related factors among patients with kidney disease attending renal clinics at MNH. The lifestyle related factors assessed include smoking, alcohol use, dietary habits, and physical activity or exercising habit.

In this study only 27.00% only reported to exercise daily while 53.7% of participants reported to not exercise at all. In the study, the participants were also assessed their monthly income and the results has shown difference in terms of income among the participants. Majority of participants were having income range between 100,000 Tshs-500,000Tshs per month (44.38%).

The eating habits as one of the risk factor for development of kidney disease, in this study most participants indicated that they use balance diet (83) and only 17% indicated to use fast food .and more than 94% of participants indicated to eat more than three meals per day while about 62% indicated to skip some and about 84% indicated to have their meals after 8pm in the night. More 50% of participants indicated to eat their food prepared at home.

Alcohol consumption is also contributed with the development of kidney diseases. In this study n more than half of the participants who had kidney disease were also taking alcohol (55 %). Number of drinks per day also increases risk of kidney disease. About 34.49% of participants with kidney disease indicated to drink more than 3 drinks per day.

Weight of an individual on the other hand has shown to be risk of kidney disease. In this study, about 44.38%of participants were overweight. About 17% of participants were obese.

Smoking habit of an individual has also been considered to be other risk factors for kidney disease. In this study, more than 67% indicated that they don't smoke and only 33% indicated to smoke cigarettes.

Lastly, the participants sleeping pattern was also assessed. Majority of the participants (89%) indicated that they slept for more than 6 hours per day**.** See table 3 below.

Table 3: Lifestyle related factor for kidney diseases (no 374)

Lifestyle factors	Frequency	Percentage (%)
Physical activity		
Yes	173	46.26
No	201	53.74
Frequency of doing physical exercise		
1-3 times a week		
3-6 times a week	38	10.16
Daily	34	9.09
No physical exercise	101	27.00
	201	53.74
Monthly income (Tshs)		
<100,000	77	20.59
100,000-500,000	176	47.06
500,000-1,000,000	67	17.91
>1,000,000	52	13.9
Type of food mostly eaten		
Fast food	64	17.11
Balanced diet	310	82.88
Meal frequency		
1-3 times	21	5.61
More than 3 times	353	94.38
Meal skipping habits		
Yes	230	61.50
No	144	38.50
Time for the last meal		
Usually before 8pm	59	15.77
Usually after 8pm	315	84.22
Place of eating		
Home	193	51.60
Outside home	15	4.01
Both home and outside	166	44.74
Type of drinks commonly taken		
Plain water	95	25.40
Soft drinks (soda etc)	45	12.30
Mixed drinks	234	62.57
Alcohol consumption		
Yes	207	55.34
No	167	44.65
Number of drinks per day		
1-3 drinks	78	20.86
More than 3 drinks	129	34.49
No consumption	167	44.65
Weight		
Underweight	3	0.80
Normal	142	37.98
Overweight	166	44.38
Obesity	62	16.58
Smoking habits		
Yes	122	32.63
No	252	67.37
Sleeping pattern		
< 6hours	40	10.78
>6 hours	334	89.30

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter begins with a discussion of study findings. This is then followed conclusion, recommendations and area of further studies.

5.1 Discussion

The main objective of this study was to assess lifestyle and social related factors in kidney diseases patients in Tanzania. Specifically, the study included social related factors of age of the participants', marital status, education level, income and occupation. The lifestyle risk factors included were smoking, eating and drinking habits, eating pattern, sleeping pattern and physical activity.

Social related factors

All participants who were attending nephrology clinic and dialysis were diagnosed to have kidney disease. A total of 374 participants who agreed to participate into the study were interviewed.

Results have shown that higher proportion of participants (63.6%) who had kidney disease were male, 36.4% were female. Sex of the participants was also associated with presence of kidney disease. Chances for an individual to have kidney disease are much higher in male than female. Although female gender has been reported as a risk factor for kidney diseases as reported in other studies (Stack et al., 2014). But the severity of the diseases is higher in men, who also suggest a high prevalence of end stage of renal diseases(Goldberg and Krause 2016). Also it seems there are several factors that lead the men prevalence to be high, men are more good economically than women which lead them to afford the high cost treatment and the men are the most group who seek medical service very late compare to women which increase the severity of the diseases and increase number of male admission to the hospital.

Age is one of the factors for development of kidney disease. In this study age distribution of the participants were found to be associated with the presence of kidney disease Significant difference was observed between the age of participants, high proportion of them 125 (33.4%) aged between 45-60 years followed by 108 (28.9%) who had above 60 years, This confirms the previous findings which indicated the risk of developing kidney disease were

increased as the age increased. Findings also proved that existence of other age related factors such as chronic diseased increased chances for kidney disease (Okwuonu et al., 2017; Su et al., 2015). In this study it was found that some of patients who had kidney disease had also history of other chronic diseases. Diabetes mellitus comprised of high proportion (25.9%), indicating that the chance for participants who had diabetes mellitus to have also kidney disease is high. This implies that, there is need to intensify screening strategies for kidney diseases among patient with diabetic disease to detect early stages of the disease for more effective intervention. Also specific health education tool can be developed and used during hospitalization of patients as a way to empower patients for preventive measures that can be adopted to prevent kidney disease. Nurse's working with such patients can play a considerable educative role rather than just waiting for patients to develop complications which are not only costly to manage but also have poor outcome.

In other studies, marital status was found to be associated with risk of having kidney disease (Kahamba, 2016). In this study there were difference in proportion of those who were single, and those who were widowed or separated. Married participants with kidney disease constituted of high proportion (58.6%). This could imply that chances for married patients to develop kidney diseases are higher comparing with widowed or separated patients (17.91%). Similar findings were reported by Kahamba (2016) in Dar es Salaam who found that 88% of the study populations having kidney disease were married. The same were reported by Su et al., (2017) in Taiwan. Further research should be to explore the association of being married and development of kidney diseases. However, in this study it was found that, most of patients with kidney disease have either primary education (36%) or secondary education (35%) Few patients in this study were either had informal education and higher education. Same finding has been reported by (Adjei et al. 2017a)

Occupational status on the other hand, has contributed in the presence of kidney diseases (Adjei et al. 2017b). Majority of the participants in this study were working which means they were employed or self employed for their daily income generating (77.0%) and about 10.4% were students and the rest were not working, meaning that they were depending on other family member for their survival. Based on type of work of participants who responded to questionnaire; those who were doing light work were 115 (52%), while participants who

have been doing hard or heavy work status were 169 (45.19%). Meanwhile incomes of the individual are reported in other studies to be another determinant for kidney disease (Amano, et al., 2017). Income was associated with increased mortality for both blacks and whites with CKD. In this study, majority of participants had moderate income ranging between 100,000 Tshs-500,000Tshs per month that equivalent to 50 to 250USD. Similarly, low income was reported by Su et al., (2015) where they found that low income of the participants was the risk for kidney diseases development. Amano et al., (2015) found that low income group was associated with an approximately 30% increase in the for kidney diseases.

Furthermore, the study found long standing use of treatment drugs in majority of participants who had kidney diseases was (45.45%)., this study found that majority of patients do not have family member who had history of kidney disease or other chronic diseases.

Lifestyle related factors among kidney diseases' patients attending renal clinics

Also participants were assessed on lifestyle and finding from other studies has shown that physical activity has a positive effect on any chronic diseases conditions (Hawknins, 2010). In this study it was found that almost half of the patients who had kidney disease they are physically inactive (53.4%) and among those who found to be active (173), only 111 was found to exercise daily. . Similar to the findings of this study, a study by Jafar, et al., (2015) showed that physically inactive individuals had over twice the prevalence of kidney diseases compared to very active individuals. These results were also reported by Tsai, et al., (2017) and Su et al., (2015).

A growing body of evidence suggests that eating patterns may affect body weight (Wachukwu, et al., 2015). Eating habits is one of the risk factor for development of kidney disease and in this study the results have shown that many participants eat balanced diet (82.88%). In this study it was found that, many patients (84.25%) used to take their meal after 8pm in the night. Also the study has found considerable number of participants with meal skipping habits.

Alcohol consumption is also associated with the development of kidney diseases. In this study, the results have shown majority of the participants' who had kidney disease were also taking alcohol (55.34%).Those who were found drinking alcohol about 129 indicated to

drink more than 3 drinks per day. This is in line with the findings reported by Wakasugi, et al., (2013), who reported that heavy alcohol consumption is associated with an increased risk of kidney diseases. Similar findings were reported by Amano et al., (2017) that indicate that excess alcohol consumption is also a risk factor. Abdominal obesity is a major driver of the current epidemic of kidney disease. In this study, individual weight status and chances for having kidney disease, was 166 (44.38%) were overweight while just 142 (37.98%) were having normal weight. This was also reported in previous studies (Zoccali, et al., 2012; Okwuonu et al., 2017; Amano et al., 2017). Orantes et la., (2011) in their study found that obesity was associated with vascular and renal damage, and this was pointing to the need for prevention.

In this study, it was found that more than 67% of participants were not smoking and for those who were smoking however, number of cigarette smoked in a day were less than 20 cigarettes per day (23.52%). Similar findings were reported by Pinto-Sietsma, et al., (2000). Sleeping pattern and development of chronic diseases such as kidney disease in this study also not measured, majority of participants (89%) were sleeping more than 6 hours per day.

Study strength and limitations

In this study lifestyle related behaviors included physical activities and pattern of physical exercise, eating and drinking habits; smoking and heavy alcohol drinking were assessed using a standardized self-administered questionnaire which was developed by (Dunkler, et al., 2014). These factors were grouped into the following; habits of doing physical exercise (time, frequency per week and intensity of physical exercise, active and inactive physical exercise); Responses of drinking and smoking habits were assessed using the following questionnaire items (with “yes” or “no” responses): drinking habit (not drinking every day, number of drinks per week (one drink equaling 1.5 ounces of hard liquor, or one glass of beer/wine), stratified by World Health Organization criteria; nutritional status, (BMI). This adds the strength to the findings of the current study. In addition, the study has involved a much diversified number of respondents as the Muhimbili National Hospital receives patients from different parts of Tanzania.

However, there are several limitations; convenient sampling technique might limit the representative for the population of kidney disease patients and the capacity to generalize the

findings to the whole population but the participants are of similar characteristics like all were diagnosed as kidney disease patients. Furthermore, previous studies have indicated that risk factors for kidney diseases and its classification of kidney disease are often mixed up depend on the researchers' interest. In this study data were relied to the doctor's diagnosis of kidney disease and mostly who were on dialysis and those who have been confirmed to have kidney problem and are attending renal clinics.

Implication of the study

Several implications arise based on the results of this study.

. Findings of the study have shown both social and lifestyle related factors influence development of kidney diseases. This indicates high burden for the government of Tanzania and health insurance companies, even individual families. There is a need for the government to emphasize on the prevention measures of the kidney diseases and more research is needed on this. The community awareness on factors that influence kidney diseases need to be emphasized so as to reduce the burden of the problem. The emphasis on prevention of kidney disease throughout the country need to be prioritized to avoid unreasonably human death.

It was observed that some diseases were associated with kidney disease. Therefore, the government of Tanzania through Ministry of health should provide education on prevention of diabetes and hypertension as major co-morbid of kidney disease. Furthermore, the policy has to be put in place for community sensitizations screening for early detection of the diseases and prevention of the progression to kidney diseases to more serious complication.

5.2 Recommendations

1. Findings of this study suggest for the government through the ministries of health, community development, gender, elderly and children to promote healthy lifestyles which are modifiable for the community as it can have a major impact in reducing the risk of kidney diseases and its related complications and high costs associated with treating these conditions.

2. Nurses are needed to develop the tools for continuing daily health education to their clients during clinics of their beloved relatives who are having kidney diseases and on matters relating with life style and social factors affecting health.

3. To develop poster and leaflets containing information on life style and social related factors which will be available at the every health institution for everyone to access easily and read so as to sensitize the community in general on the effects of those factors.

4. The development of early screening for other chronic diseases like diabetics' mellitus and hypertension is important to reduce the burden of developing kidney diseases and it will reduce the burden patients who need critical care due to that condition.

5. More preventive education effort is needed to be made at the primary school level.

5.3 Conclusion

From the findings of the study it can be concluded that both social and lifestyle related factors identified in this study have showed association with the kidney disease. The association of these risk factors was proved in this study analysis. These findings supplement the previous findings which were reported by other studies conducted in different parts of the world. More studies are needed and community mobilization in Tanzania to prevent the consequences of these factors that can be modified by the healthy lifestyle practices.

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APPENDICES

Appendix I: Informed Consent (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS

CONSENT FORM

ID NO

Consent to participate in a study:

Greetings!

My name is Paschal Bartholomew Buay and I am a 2nd year Student pursuing a Master of Science in Nursing Critical care and Trauma at Muhimbili University of Health and Allied Sciences (MUHAS).I am conducting the research titled **"A*SSESSMENTS OF LIFESTYLE AND SOCIAL RELATED FACTORS IN KIDNEY DISEASES IN TANZANIA''***

Purpose of the Study

The purpose of this study is to generate data which is required to gain insight on lifestyle and social factors related to increased number of patients who develops chronic kidney diseases and to determine the future direction of the interventions on prevention of non-communicable diseases in Tanzania.

What Participation Involves

If you agree to join the study, you will be interviewed in order to answer a series of questions in the questionnaire prepared for the study.

Confidentiality

All information recorded will be entered into computers with only the study identification number. However no participant's name will be published.

Risks

For this study we do not expect any risk while participating.

Rights to withdraw and alternatives

Taking part in this study is completely your choice. You are free to choose either to participate in this study or not. You can decide to stop participating in this study any time you wish even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits to which you are otherwise entitled.

Benefits

If you agree to take part in this study there are no direct benefits that you will get from this study but we believe the information you will provide will help in improving health of other Tanzanian friends and our relatives.

Compensation

There will be no compensation of any form for participation in this study.

Who to contact: In case of any questions about the study contact the principal investigator **Paschal Bartholomew Buay** Muhimbili University of Health And Allied Sciences School of Nursing Department of clinical Nursing Po. Box.65004, Dar es Salaam, through Mobile **0673992788 & 0787992788.**

Director of Research and Publication Muhimbili University of Health and Allied Sciences.

Dr. Joyce Masalu P.O. BOX 65001 Dar es salaam Tel +255222150302-6/2152489.

I _____ have read and understood the contents of this form, my questions have been answered, and I consent to participate in this study.

Signature of participant_____

Signature of researcher_____

Date of signature _____

Appendix II (A) Questionnaire (Interview guide)

Introduction

Dear respondents.

My name is Paschal Bartholomew Buay I am a student pursuing Master of Critical Care and Trauma in Nursing. I am conducting study titled "Assessment of lifestyle and social related factors and chronic kidney disease patients in Tanzania"; the research study is one of the requirements for the fulfillment for the award of my Master of Nursing in Critical Care and Trauma at MUHAS.

You are kindly requested to fill this questionnaire. This study is for academic purpose. You are chosen to participate in this study because of your valuable knowledge and information. The information will be treated with highest level of confidentiality. For that case your name will not appear on any page of this questionnaire.

A: Social demographic information

1. Gender a. Male ( ) b. Female ( )

Age: ……

2. Marital status a. Single ( ) b. Married ( ) c. Separated/divorced ( ) d. Widow ( )
3. Education level a. No formal education ( ) b. Primary education ( ) c. Secondary education ( ) d. Higher education ( )
4. Occupation status a. Employed ( ) b. Self-employed ( ) c. Famer ( ) d. None of the above (specify)……
5. Do you have CKD Yes ( ) No ( )
6. Do you have history of family chronic kidney disease? a. Yes ( ) b. No ( )

Physical exercise

7. Do you usually exercise frequently? a. Yes ( ) b. No ( )
8. What type of physical exercise do you perform? …….
9. How do you rate the level of physical exercise per week? a. 1-3 times ( ) b. More than 3 times ( ) c. daily exercise ( )
10. What is the duration of physical exercise? a.<30 minutes ( ) b. >30 minutes ( )

11. What physical activity do you engaged?
    a. Jogging
    b. Football
    c. Basket ball
    d. Evening walk
    e. Others specify _____
12. Which means of transport do you use to facilitate your daily activities?
    a. Private car
    b. Motorcycle
    c. Daladala
    d. Bicycle
    e. On foot
13. What are you doing after the working hours always?
    a. Playing drama
    b. Playing cards
    c. Drinking
    d. Playing board
    e. Playing football
    f. Sleeping
    g. Watching TV
    h. Others specify _____
14. Are there any recreation places in your area of resident?
    a. Yes
    b. No
15. Do you engage in any recreation clubs available in your area of resident?
    a. Yes
    b. No
16. How often does your family do something active together?
    a. Daily
    b. Sometimes
    c. Rarely

d. Never

17. What type of physical activities, is the family doing together?

a. _____

b. _____

c. _____

18. What is your monthly income? (Just circle the right answer)

PARAMETER 1 2 3 4

MONTHLY INCOME

1	2	3	4
<100,000/= Tshs	100,000/= to 500,000/= Tshs	501,000/= to 1,000,000/= Tshs.	> 1,000,000/= Tshs

Eating and drinking habits

19. How many meals do you take a day? A.1-2 meals ( ) b. 3 meals and more ( )
20. Do you usually take snacks between meals? a. Yes ( ) b. No ( )
21. At what time do you usually take your last meal? a. Before 8pm ( ) b. After 8pm ( )
22. Do you have habits of skipping meals? a. Yes ( ) b. No ( )
23. Where do you usually eat your meals? a. At home ( ) b. Outside home ( )
24. Which type of foods do you usually prefer? a. Fast foods ( ) b. Healthy foods ( )
25. Which type of drinks do you usually drink? a. soft drinks ( ) b. Alcohol ( )
26. What type of soft or alcohol do you drink? …….
27. How many bottles do you usually drink per day and week? a. 1-3 drinks ( ) b. More Than 3 drinks
28. Nutritional status: weight (kgs) …… Height (m) ……..
29. BMI: a. <18.5 kg/m^2 ( ) b. 18.5–24.9 kg/m^2 ( ) c. ≥25.0 kg/m^2 ( )

Smoking habits

30. Do you smoke? a. Yes ( ) b. No ( )

32. How many cigarette/ tobacco sticks per day? a. <20 cigarette ( ) b. >20 cigarette ( )

Sleeping pattern

33. How many hours do you sleep at night? a. <6 hours ( ) b. >6 hours ( )

34. Do you get time to rest during the day? a. Yes ( ) b. No ( )

35. How many hours do you rest? a. <1hour ( ) 1-2 hours ( )

THANKS

Appendix II (B) DODOSO

1. Umri me ( ) ke ( )
2. Miaka _____
3. Hali ya ndoa
   a. Umeoa/olewa
   b. Mjane /mgane
   c. Achika
   d. Sijaolewa/olewa
4. Elimu
   a. Sijasoma
   b. Elimu ya msingi
   c. Elimu ya sekondari
   d. Elimu ya juu
5. Kazi
   a. Nimeajiriwa
   b. Nimejiajiri
   c. Mkulima
   d. Kazi zaidi ya hapo juu (elezea)----------
6. Je una ugonjwa figo Ndiyo ( ) Hapana ( )
7. Je katika familia kuna mtu mwenye ugojwa wa figo?
   a. Ndiyo
   b. Hapana
8. Je unafanyaga mazoezi?
   a. Ndiyo
   b. Hapana
9. Aina gani ya mazoezi unafanya?----------
10. Unafanya mazoezi
    a. Kwa wiki mara 1-3
    b. Zaidi ya mara 3
    c. Kila siku
11. Aina gani ya mazoezi unafanya?
    a. Kucheza mpira wa miguuu
    b. Matembezi ya jioni
    c. Kucheza mpira wa kikapu
    d. Kama kuna nyingine eleza ----------
12. Usafiri gani unatumia kila siku?
    a. Kwa miguu
    b. Gari binafsi
    c. Daladala
    d. Baiskeli

e. Pikipiki

13. Baada ya masaa ya kazi uunafanya kazi ganiz?
    a. Kucheza ngoma
    b. Kucheza karata
    c. Kunywa pombe
    d. Unalala
    e. Unaangalia runinga
    f. Nyingine (eleza) ----------
14. Kuna eneo lililotengwa kwa ajili ya mazoezi katika eneo lako la makazi?
    a. Ndiyo
    b. Hapana
15. Je unajiingiza kwenye vikundi vya mazoezi katika eneo lako la makazi?
    a. Hapana
    b. Ndiyo
16. F amilia yako ina tabia ya kufanya mazoezi?
    a. Ndiyo
    b. Hapana
17. Mapatoya familia kwa mwezi

1	2	3	4	
< 100,000/=	100000 – 500000	500000 – 1000,000	➢ 1000,000	

18. Unakula milo mingapi kwa siku?
    a. 1- 2
    b. 3 au zaidi
19. Mda gani nakula mlo wako wa mwisho?
    a. Kabla ya saa mbili usiku
    b. Baada ya saa mbili usiku
20. Una tabia ya kupitiliza baadhi ya milo kwa siku?
    a. Ndiyo
    b. Hapana
21. Wapi unapata chakula chako kila siku?
    a. Nyumbani
    b. Mtaani
22. Je unapendelea chakua gani
    a. Kinachoiva haraka
    b. Chenye mlo kamili
23. Kinywaji gani unatumia ?
    a. Maji
    b. soda

c. Pombe
d. Maji na soda

24. Aina gani ya pombe unakunywa?
    a. Pombe kali
    b. Bia
25. unakuny wa chupa ngapi kwa siku?
    a. 1-3
    b. Zaidi ya 3
26. Uzito ----------kg
27. urefu ----------cm
28. BMI ----------
29. Je unavuta sigara?
    a. Ndiyo
    b. Hapana
30. Unavuta sigara ngapi kwa siku?
    a. < 20
    b. Zaidi ya 20
31. Unalala masaa mangapi usiku
    a. < 6
    b. >6
32. Mchana una muda wa kupumzika
    a. Ndiyo
    b. Hapana
33. Kama yapo masaaa
    a. < 1
    b. >1

ASANTE

Appendix III: Letter for Ethical Clearance

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz

Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. DA.287/298/01A/

2nd May, 2018

Mr. Paschal B. Buray
MSc. Critical Care and Trauma Nursing
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED: "ASSESSMENT OF LIFE STYLE AND SOCIAL RELATED RISK FACTORS AMONG PATIENTES WITH CHORNIC KIDNEY DISEASES DAR ES SALAAM-TANZANIA"

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has, on behalf of the Senate, approved ethical clearance for the above-mentioned study. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from 30th April, 2018 to 29th April, 2019. In case you do not complete data analysis and dissertation report writing by 29th April, 2019, you will have to apply for renewal of ethical clearance prior to the expiry date.

Dr. Emmanuel Balandya
ACTING: DIRECTOR OF POSTGRADUATE STUDIES

cc: Director of Research and Publications
cc: Dean, School of Nursing

Appendix IV: Permission Letter

MUHIMBILI NATIONAL HOSPITAL

Cables: "MUHIMBILI"
Telephones: +255-22-2151367-9
FAX: +255-22-2150534
Web: www.mnh.or.tz

Postal Address:
P.O. Box 65000
DAR ES SALAAM
Tanzania

In reply please quote: MNH/TRC/Permission /2018/317 14th May, 2018

Block Manager,
Kibasila Annex,
Muhimbili National Hospital

RE: PERMISSION TO COLLECT DATA AT MNH

Name of Student	Mr. Paschal B. Buray
Title	"ASSESSMENT OF LIFESTYLE, SOCIAL RELATED RISK FACTORS IN CHRONIC KIDNEY DISEASES PATIENTS IN TANZANIA"
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Dr. Dickson Mkoka
Period	14/05/2018 to 30/11/2018 (6 months)

Permission has been granted to **Mr. Paschal B. Buray** collect data for the above title.
Please ensure that the researcher abide to the ethical principle and other conditions.

Sincerely,

HEAD. TEACHING RESEARCH & CONSULTANCY UNIT
MUHIMBILI NATIONAL HOSPITAL
P. O. BOX 65000
DAR ES SALAAM

Dr. Faraja Chiwanga
Head of Teaching, Research and Consultancy Coordination Unit

c.c. DSS
✓ c.c. Mr. Paschal B. Buray

All Correspondences to be addressed to the Executive Director

MUHIMBILI NATIONAL HOSPITAL

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Telephones: +255-22-2151367-9
FAX: +255-22-2150534
Web: www.mnh.or.tz

Postal Address:
P.O. Box 65000
DAR ES SALAAM
Tanzania

In reply please quote: MNH/TRC/Permission /2018/317 16th May, 2018

Head,
Internal Medicine Department (Renal)
Muhimbili National Hospital.

RE: PERMISSION TO COLLECT DATA AT MNH

Name of Student	Mr. Paschal B. Buray
Title	"ASSESSMENT OF LIFESTYLE, SOCIAL RELATED RISK FACTORS IN CHRONIC KIDNEY DISEASES PATIENTS IN TANZANIA"
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Please ensure that the researcher abide to the ethical principle and other conditions.

Sincerely,

HEAD, TEACHING RESEARCH & CONSULTANCY
MUHIMBILI NATIONAL HOSPITAL
P. O. BOX 65000
DAR ES SALAAM

Dr. Faraja Chiwanga
Head of Teaching, Research and Consultancy Coordination Unit

c.c. DMS
c.c. Mr. Paschal B. Buray

All Correspondences to be addressed to the Executive Director