Health related quality of life and its determinants among elderly patients with chronic kidney disease attending at Muhimbili National Hospital, Dar Es Salaam, Tanzania

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HEALTH RELATED QUALITY OF LIFE AND ITS DETERMINANTS AMONG ELDERLY PATIENTS WITH CHRONIC KIDNEY DISEASE ATTENDING AT MUHIMBILI NATIONAL HOSPITAL, DAR ES SALAAM TANZANIA

By

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A Dissertation Submitted in (Partial) Fulfilment of the Requirement for the Degree of Master of Public Health of

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CERTIFICATION

The undersigned certifies that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences dissertation entitled: **''Health related Quality of Life and its Determinants Among elderly patients with Chronic Kidney Diseases Attending at Muhimbili National Hospital, Dar es Salaam, Tanzania'',** in (partial) fulfillment of the requirement for the degree of master of Public Health of Muhimbili University of Health and Allied Sciences.

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Prof. Phare G.M. Mujinja (Hons), CIH, MA (Econ), MPH, PhD

(Supervisor)

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Date

DECLARATION AND COPYRIGHT

I, **Bernard Kepha David**, declare that this **dissertation** is my own original work, and that it has not been presented to any other university for similar or any other degree award.

Signature…… **Date**…….

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DEDICATION

To my parents, Mr. & Mrs. Kepha, and my beautiful and lovely wife Mrs. Anastazia, and my lovely sons Bryant and Bill, who have always felt proud of me, and supported me through-out difficulties and happiness times. God bless you always.

ABSTRACT

Background: In Tanzania like the rest of the world, there is increase of the elderly population in recent years. Studies have showed the elderly are prone to chronic illness like Chronic Kidney Disease (CKD), which is a health-related quality of life (HRQoL) deteriorating disease. HRQoL is not only a public health but also a social economic problem and in CKD patients; can represents a functional impact of the disease or its treatment. In spite of recent improvement of CKD patient care in Tanzania, information regarding HRQoL of elderly patients with CKD accessing this service is limited.

Objective: To assess health related quality of life and its determinants among elderly patients with CKD attending follow up clinic at Renal Unit Muhimbili National Hospital (MNH).

Methodology: This was a descriptive cross-sectional research design, conducted on March and April 2019 at renal Unit MNH, a public tertiary care hospital in Dar es Salaam with about 420 patients visits per week at Renal unit. Convenience sampling technique was used to select 151 elderly patients with CKD. Interviewer administered questionnaire technique was used for data collection. Assessment of HRQoL was done by using adapted SF-36. Descriptive and inferential statistics was used for data analysis and determinants were established by using multivariate analysis and their means were comapred using t-test.

Results: A total of 151 elderly patients with CKD were interviewed. Data were complete on 139 and these were included in final analysis. Among the respondents 104 (74.8%) were men and majority of the participants 101 (72.7%) were in the age group between 60-69 years. The overall HRQoL was 46.5. The Role Physical and Role Emotional domains scored lowest, 17.5 and 21.7 respectively. Place of residence, duration of illness and Stage of CKD was found to be statistically significant ($p < 0.05$) associated with HRQoL in this study.

Conclusion: The overall quality of life of elderly patient with CKD seen at Renal Unit at MNH was significantly poor. More alternative advised to improve the HRQoL among elderly patients attending MNH with a focus on relieving emotional and physical symptoms is recommended.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AIDS	Acquired Immuno Deficiency Syndrome
CKD	Chronic Kidney Disease
ESRD	End Stage Renal Diseas
HAART	Highly Active Antiretral Viral Therapy
HD	Hemodialysis
HIV	Human Immuno Viruses
HRQoL	Health Related Quality of Life
IQOLA	International Quality of Life Assessment
MNH	Muhimbili National Hospital
NAP	Nation Aging Policy
NGO	Non-Government Organizations
PD	Peritoneal Dialysis
RRT	Renal Replacement Therapy
RA	Research Assistant
SF 36	The Short Form (36) Health Survey
SPSS	Statistical Package for Social Science
UN	United Nations
URT	United Republic of Tanzania
US	United States
WHO	World Health Organization

DEFINITIONS OF TERMS

Quality of life: The World Health Organization (WHO) definition is used in this study; quality of life (QOL) as the individual's perception of their position in life taken in the context of the culture and value systems where they live and in relation to their goals, expectations, standards and concerns.

Health Related Quality of Life (HRQOL): HRQOL is a concept in measuring wellbeing using a self-reported satisfaction with the domains that measure physical and mental health. In this study HRQOL is confined to medical conditions and its consequences on physical and mental health of an individual. In this document, HRQOL is measured using Quality metric health outcome instrument called SF-36 as a self-reported measure on satisfaction with the individual's wellbeing.

Elderly person: In this study an elderly is an elderly of 60 years of age and above.

Patient with Chronic Kidney Disease (CKD): It refers to person who has progressive loss of kidney function over a period of months or years. In this study it refers to the patients who are diagnosed by the physician to have had chronic kidney disease of any stage and undergoing follow up clinic.

End Stage Renal Disease (ESRD): Is a degree of renal failure that would cause death unless some form of renal replacement therapy (RRT) is initiated.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Ageing refers to the normal progressive and irreversible biological changes that occur over and individual's lifespan (1). Sixty (60) years of age is the official retirement age in Tanzania, and is regarded by United Nations (UN) as the beginning of old age. Recent scientific achievements and medical advancements have resulted in increasing life expectancy in ageing population, both in developed and developing countries (2,3,4).

It is estimated that, the population over 60 years of age grows at 3% each year, suggesting that the number of elderly people (over 60 years in developing countries and 65 years in developed countries) is expected to be 1.4 billion by 2030, and 2.1 billion by 2050, and could reach 3.1 billion by 2100 (2). Similarly, in Tanzania there is a steady increase of elderly population; person aged 60 years and above constituted about one percent of total population in 1961, four percent in 1988 and six percent of total population in 2012 (3).

Ageing is an inevitable developmental phenomenon bringing along several changes in the physical, psychological, hormonal and social conditions. With the advancement of the age, morphological, functional, physiological and psychological changes occur that cover the whole organism; determine the progressive loss of functional capacity and adaptation of the individual to the environment, causing greater vulnerability and hindering their work capacity. These conditions may result in decreasing family incomes(5). It is been known for decades that, there is gradual loss of kidneys functions parallel with age (6).

Chronic kidney disease (CKD) is a condition characterized by a gradual loss of kidney functions over time (7). The progression of CKD leads majority of cases into End Stage Renal Disease (ESRD), which is a degree of renal failure that would cause death unless some form of renal replacement therapy (RRT) is initiated. There is a high prevalence of CKD in the elderly, for instance, in US Renal Data System 2018, the prevalence of CKD increases with age, reaching 32 % in general population of above 60 years old (6). For this elderly

population, there is a rising prevalence of comorbidities and risk factors such as hypertension and diabetes predisposing the individual to a high burden of CKD in this population. This condition affects wellbeing and quality of life of the elderly people (8).

Quality of life is perception of the patients position in life in the context of the culture and value system; where they live, and in relation to their goals, expectations, standards and concerns (9). The aged population face the problem of poor health, social cut off, economic dependence, and loss of emotional support affecting their quality of life. As people age, their quality of life is largely determined by their ability to maintain autonomy and independence (4).

A patient's perception of his/her wellbeing and patient-reported outcomes, and the assessments of the impact of therapeutic intervention are an integral part of evaluation of the cost of chronic illnesses. Measures of HRQOL have not only become popular investigative tools, but have been used to define and alter models of health care delivery and is mostly used to assess a patient with chronic illness. In clinical care of CKD patients, providers are increasingly realizing the importance of HRQOL assessment. This study's HRQOL scores provide additional information on the individual patient wellbeing beyond the information from the patient's clinical and laboratory assessments. This study used SF- 36 tool to measure HRQOL (9,10) .

This study investigated the HRQoL of the elderly patient with CKD attending Renal Unit at MNH. The main finding of the study is that the overall quality of life among elderly CKD patients was relatively poor. This implies that physical and mental symptoms should be considered during patient care. The subsequent sections of this dissertation addresses the problem statement, research questions, objectives, conceptual framework, methodology, results, discussion, conclusion and recommendations.

1.2 Problem Statement

According to World Health Organization (WHO) - 2018 fact sheet, elderly population is the fastest growing age segment of population globally. Currently, there are about 2.7 million Tanzanians - the equivalent of 6% of the total population aged 60 and above (12). Aging is associated with increase in the prevalence of chronic non-communicable disease like high blood pressure (HBP), diabetes mellitus (DM) which consequently lead to CKD. A population-based survey done in 2014 at Northern Tanzania showed almost quarter of all elderly who were aged 60 years and above had CKD. Anxiety from diagnosis and treatment, lack of autonomy, incurability, frequent clinic visit and lack of family and friend comprehension can impact negatively HRQoL of the patient with CKD (11,12).

The important role of HRQL in measuring the impact of CKD is increasingly acknowledged globally. Physiological measures provide important information to clinicians, but are of limited interest to patients and often correlate poorly with functional capacity and well-being; the areas in which patients are most interested (13). In elderly patients with CKD, for instance, differences studied laboratory like creatinine level and hemoglobin level are only weakly related to differences in the capacity to perform day-to-day activities. It has also been observed that two patients with the same CKD stage often have dramatically different responses. For example, two patients with the same CKD stage as measured in the laboratory, may have different role functions and emotional well-being, while one patient may continue to work without depression, another patient may quit his/her job and experience major depression (13,14,15).

There are very few published studies assessing 8 domains of HRQoL and its determinants among elderly population with CKD in developing countries (15,46). Therefore, this study was conducted to assess 8 domains of health related quality of life and its determinants among elderly patients with Chronic Kidney Disease attending follow up clinic at Renal Unit Muhimbili National Hospital. Health related quality of life information is important for guiding clinician and councilors to providing care to these patients.

1.3 Rationale of the study

The findings of this study will provide information on HRQL and its determinants. Finding from this study will help nurses and clinicians at MNH to gain relevant knowledge to consider beyond laboratory findings in planning care of elderly patient with CKD attending MNH. The knowledge on HRQoL and CKD will assist in designing further actions to be taken in order to meet patients' satisfaction with the care provided by nurses and clinicians.

1.4 Conceptual Framework

This study focused on the quality of life among elderly patients with CKD attending to Muhimbili National Hospital. Wilson & Cleary developed a causal model of HRQoL which was further revised by Ferrans et al (16,17). According to this model, there are four main determinants of overall quality of life: biological function, symptoms, functional status, and general health perceptions.

In this study physical, emotional, social, cognitive symptom are elicited using SF-36. We assume that the SF-36 domains are affected by characteristics of the individual and characteristic of the environmental influence.

We therefore associate what eventually impact on quality of life as a person's sense of wellbeing and what stems from individual cognitive and perceived satisfaction or dissatisfaction with areas of life that are significant to him/her in relation to his/her current health status.

We picked physical and mental function as conceived and perceived by individual patient, to assess the quality of life of patients seeking care for CKD. We assume that the individual health related quality of life, is not only affected by the treatment one receives, but also how she/he feels about the physical and mental functions in the process of obtaining health care for CKD.

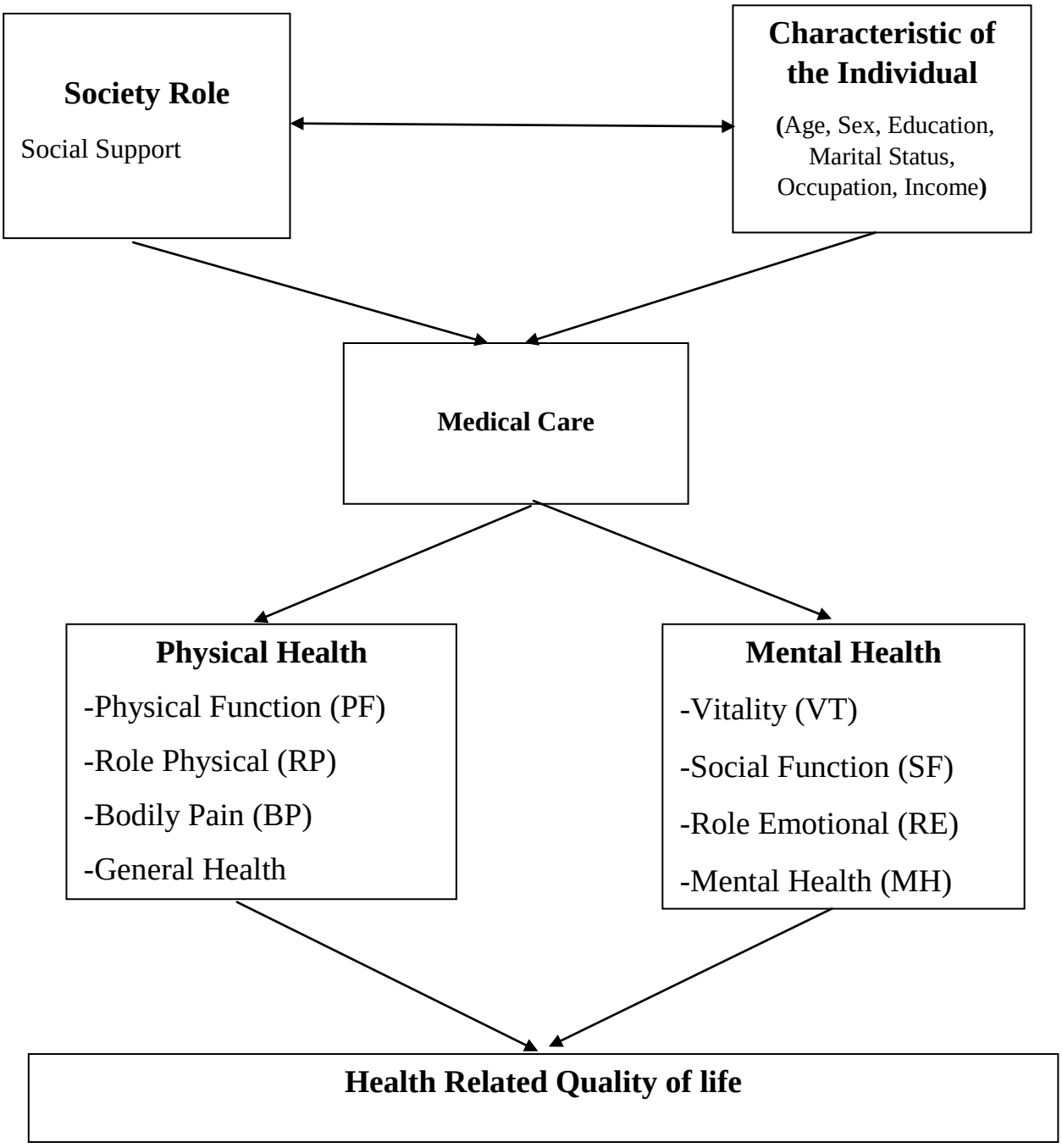


Figure 1: Conceptual Framework

Source: Modified and adapted from Wilson and Cleary Model of Health-Related Quality of Life

1.5 Research Questions

1.5.1 Broad Research Question

What is the health-related quality of life and its determinants among elderly patients with Chronic Kidney Disease attending to Muhimbili National Hospital?

1.5.2 Specific Research Questions

1. What is the health related quality of life among elderly patients with Chronic Kidney Disease attending to Muhimbili National Hospital?
2. What are the socio-demographic-economic factors associated with health related quality of life among elderly with Chronic Kidney Disease attending at Muhimbili National hospital?
3. What is the association between stages of Chronic Kidney Disease and health related quality of life among elderly patients attending at Muhimbili National Hospital?
4. What is the association between modalities of treatment of Chronic Kidney Disease and health related quality of life among elderly patients attending at Muhimbili National Hospital?

1.6 Objectives

1.6.1 Main Objective

To assess health related quality of life and its determinants among elderly patients with Chronic Kidney Disease attending at Muhimbili National Hospital.

1.6.2 Specific Objectives

1. To assess the overall health related quality of life among elderly patients with Chronic Kidney Disease attending at Muhimbili National Hospital.
2. To identify socio-demographic and economic factors associated with health-related quality of life among elderly with Chronic Kidney Disease attending at Muhimbili National hospital.
3. To identify association between stages of Chronic Kidney Disease and health related quality of life among elderly patients attending at Muhimbili National Hospital.
4. To identify association between modalities of treatment of Chronic Kidney Disease and health related quality of life among elderly patients attending at Muhimbili National Hospital.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Literature Review

In recent years, assessment of health related quality of life among patients with chronic illness has gained popularity, due to the fact that it can help to assess efficacy of medical intervention, to improve process of making clinical decision, to assess quality of care, and to estimate the health need of the population (18). The concept of health-related quality of life (HRQoL) encompasses a wide range of aspects in human life. It consists of physical, mental, emotional and social functions. It goes beyond direct measures of population health, life expectancy, and reasons of death, and focuses on the effect health status has on quality of life (13).

Improving the quality of life among elderly people has become the global priority (14). Aging and aging-related disease can impact on both HRQoL and health-related costs. Due to limited financial resources in the health sector, and the increased demand for health care services, HRQoL measurement in elderly people can provide both researchers and stakeholders with appropriate information for an optimal management of physical and mental conditions (15). Chronic kidney disease (CKD) is a very common clinical problem in elderly patients and is associated with increased morbidity and mortality (19). It is now widely accepted that HRQoL is significantly compromised in patients with CKD and decreased HRQOL has been associated with increased mortality and morbidity (18).

Globally, most of the time CKD is considered comorbidity of diabetes or hypertension, however chronic kidney disease has numerous complex causes. Outstandingly, such disease has an indirect impact on global morbidity and mortality by increasing the risks associated with at least five other major killers: cardiovascular diseases, diabetes, hypertension, infection with human immunodeficiency virus (HIV) and malaria (20).

Prevalence of CKD is estimated to be 3-4 times more common in Africa than in developed countries. Hypertension affects about 25% of the adult population and is the cause of chronic kidney disease in 21% of patients on renal replacement therapy in the South African Registry. The prevalence of diabetic nephropathy is estimated to be 14%-16% in South Africa, 23.8% in Zambia, 12.4% in Egypt, 9% in Sudan, and 6.1% in Ethiopia (21).

2.2. Health quality of life among elderly with Chronic Kidney Disease

CKD is a condition which by its nature has a great effect on Health-Related Quality of Life (HRQOL). From the early stages of the disease to its end stage, symptoms, restrictions, especially food and its management, touch everyday life of these patients. The compromised HRQoL among patients with chronic kidney disease is well recognized in developed countries (22).

The recent mandate by the Center for Medicare Services in the United States (US) require all dialysis units to monitor HRQOL as a condition of coverage; this has focused attention on the importance of these measures (23). In the Dialysis Outcomes and Practice Patterns Study, conducted in US using SF-36, have indicated that reduced scores in CKD patient on hemodialysis are associated with significantly higher hospitalization rates and mortality. For example, reduced physical component summary scores (< 25) on the SF-36 Health Survey have been associated with nearly twofold greater chance of death and a 60% greater chance of hospitalization than patients (after corrections for a variety of standard variables) with scores 446 in studies involving several thousand hemodialysis (HD) patients (24)

A study which was done in Brazil looking on quality of life of the elderly patients with CKD, Physical was the most affected domain with an average of 44 score using SF 36 tool.. It was found a significant statistical difference between quality of life of the elderly chronic kidney disease patients and years of formal education in the following domains: Social Relationships (p=0.001), Environment (p=0.029) and General Quality of Life (p=0.013). A significant statistical difference was also reported between quality of life of elderly chronic kidney

disease patients and family income in the Environment (p=0.006) and General Quality of Life domains (p=0.031) (25).

2.3. Socio-economic and demographic determinants of quality of life among patients with Chronic Kidney Disease

Some studies have shown that there is significant association between social, demographic and economic factors, such as age, sex, marital status, individual income and health related quality of life (30,31,32). A study conducted in Iran looking at Socio-Demographic determinants of HRQoL showed that males had significantly higher scores compared to females in both the physical and mental domains of HRQoL ($P < 0.001$). In males, statistically significant determinants of poor physical HRQoL were older age, being married, being unemployed yet having other sources of income, having literacy levels below high school diploma, and having chronic diseases ($P < 0.05$). In females, however older age and being housewives were significant determinants of poor physical HRQoL ($P < 0.05$) (27).

There are multiple pathways by which socioeconomic factors determine health. It is argued that comprehensive analysis must include macroeconomic contexts and social factors as well as more immediate social environments, individual psychological and behavioral factors, and biological predispositions (28). Socioeconomic constellations influence not only access to quality care for CKD risk factors and CKD treatment, but also may mediate many of the cultural and environmental determinants of health (29).

In a study done in Greece among those with CKD, on hemodialysis (HD) and peritoneal dialysis (PD), 9.3%, 17.8% and 23.1%, respectively, had 'some/a lot' difficulties in copying with financial problems. The physical component summary score was significant lower in HD, while the summary score of the mental component showed no differences between the groups. In multiple linear regression analysis, age and dialysis had significantly negative correlations with physical functioning scores. Those who were divorced or widowed tended to perform worse in physical scores compared with those who were married. Mental scores were affected only by coping with financial difficulties (30).

2.4. Stages of Chronic Kidney Disease and health related quality of life among elderly patients

There are five stages of kidney damage, from very mild damage in Stage one to complete kidney failure in Stage five. The stages are based on how well the kidney can filter waste and extra fluid from the body (31). There is variability in findings; some studies have shown quality of life of CKD patient is not influenced by stage of CKD, while other studies show contrary (37,38).

A study done in Stockholm region in Sweden showed that, all HRQoL dimensions deteriorated significantly with CKD stages with the lowest scores in CKD stage five. The largest differences between the patient groups were seen in 'physical functioning', 'role physical', 'general health' and in physical summary scores (PCS). The smallest disparities were seen in mental health and pain (33).

2.5. Treatment modalities and quality of life among elderly patient with chronic kidney disease

The aims of treatment of CKD in developed nations have evolved over time from just survival to achievement of a certain level of well-being (34). From the latest nephrology guidelines, it is recommended an age-neutral approach to chronic kidney disease (CKD) management based upon the level of estimated glomerular filtration rate (eGFR) and the presence of proteinuria (35). CKD in elderly can be managed by using conservative management or some form of renal replacement therapy (RRT) like maintenance dialysis or renal transplant, HRQoL is a fundamental measure of outcome (36) . In patients with CKD evaluation of HRQoL involves determining the efficiency and effectiveness of the different forms of RRT like (hemodialysis, peritoneal dialysis and kidney transplantation) and evaluating the efficiency and effectiveness of the different types of other treatments applied to patients with Chronic kidney disease (such as rh-EPO treatment, or the different types of immunosuppressive treatments(37). In a study done in Italy among elderly patient age greater than 75 years assessing HRQoL using SF-36 showed conservative treatment patients' HRQoL seemed to be

much the same as in the RRT group, apart from the physical functioning and emotional role scales, where patients on conservative treatment scored lower (36).

Currently no single tool or method has been shown to be ideal to measure HRQoL in all circumstances. It has been shown that very different HRQoL results can be obtained from the same population if different tools are used (38). One of the most widely used tool in HRQoL is SF-36, it has more than 2000 publications (38). It is survey tool for HRQoL containing 36 items. It includes one multi item scale that asses 8 health domains. These includes 1. Physical functioning - limitation of physical activities due to health problems. 2. Role physical – limitation in usual role activities because of physical health problem. 3. Social Functioning – limitation of social activities because of physical or emotion problems. 4. Bodily pain – limitation of activities due to pain. 5. General Mental Health. 6. Role Emotion - limitation in usual role activities because of emotion problems. 7. Vitality. 8. General Health perception (39).This domains are measured on Likert scale with scores transformed between zero (worst) to one hundred (best) (38).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Design

A cross-sectional desciptive study was conducted among elderly patients with Chronic Kidney Disease (CKD) attending to Renal Unit at Muhimbili National Hospital (MNH) in March and April 2019.

3.2 Study Area

This study was conducted at the Renal Unit in MNH, a national referral hospital, in Dar es salaam City, Tanzania. MNH is a public tertiarry hospital, currently with 1,500 bed capacity and attending 1,000 to 1,200 outpatients per week and admitting 1,000 to 1,200 inpatients per week. At the Renal Unit, clinics are operated daily from Monday to Friday. Saturdaysare reserved for dialysis patient and Sundays for emergency dialysis only.Wednesdays are reserved for CKD exempted patients. About 420 CKD patients are attended in different clinics of the Renal Unit every week, whereby more than 70 patients are elderly. During the study period there were 272 patients on dialysis and most of them were attended two to three times a week. Apart from providing health care service for patients from all parts of Tanzania, MNH is also a Teaching Hospital for medical students and residents from Muhimbili University of Health and Allies Sciences (MUHAS).

3.3 Target and Sample population

3.3.1 Target Population

The target population were all elderly patients aged 60 years and above with CKD.

3.3.2 Sample Population

The sample population were all elderly patients aged 60 years and above with CKD, visiting follow up clinics at Renal Unit in Muhimbili National Hospital in Dar es Salaam, during the study period.

3.3.3 Inclusion Criteria

All elderly patients diagnosed to have CKD by attending physician and visiting renal unit clinic at MNH were eligible for enrolment in this study if they meet the following criteria;

- At least 60 years or above willing to participate and signed informed consent.
- By the time of the study, have been followed up for period of three months and above at the Renal Unit as CKD patient.

3.3.4 Exclusion criteria

Patients who meet the above criteria were excluded from enrolment if;

- Patient who was very sick and need urgent medical care
- Patient who was unable to communicate in Kiswahili or English language.

3.4 Sample size and Sampling Technique

3.4.1 Sample Size

The Sample size was determined using the prevalence of CKD among elderly population in Tanzania which is 25% (11). Therefore, the sample size for this study was calculated using prevalence of 25%, with standard normal deviate of 1.96 for 95% confidence interval and 8% margin of error.

Therefore, minimum sample size was calculated as follows;

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

Where

n= required sample size

Z= Critical value of the standard normal distribution for the 95% confidence interval around the true proportion which is 1.96

P= expected prevalence of interest to be studied which is 6%, which is the prevalence of elderly Population in Tanzania.

ε= accepted margin of error which is set at 8%

Substituting in the above formula

$$n = \frac{1.96 \times 1.96 \times 25 (100-25)}{64} = 240$$

N= 113

Therefore, the minimum required sample for this study was 113 participants. However, a total of 151 patients were recruited for the study.

3.5 Sampling Technique

Convenience sampling technique was used to select study respondents among elderly patients with CKD attended to MNH. The convenient sampling technique was used due to the limited number of patients' daily attendance. Elderly patients with Chronic Kidney Disease were approached at MNH Renal Unit the six weeks of the study period. A total of 151 patients were interviewed. All elderly CKD patients visiting the clinic during the study period were asked, and upon acceptance were recruited to join the study.

3.6 Study Variable

Health Related Quality of Life is the variable measured in this study

3.7 Data Collection Intruments

A quantitative data collection method was used to collect information from the elderly patients with CKD who were visiting MNH Renal Unit clinic during the study period. Two instruments were used to collect data; questionnaire with closed ended questions and adapted SF 36 questionnaire.

The Short Form Health Survey (SF-36) questionnaire was used to collect data on health-related quality of life (HRQoL) data. The SF- 36 is a generic HRQoL instrument that has been used in different studies in developed and developing countries. It was developed in United States between 1985 and 1992 during medical outcome survey and it has been translated into more than 55 languages. Its reliability and validity have been approved, not only in multiple populations in several studies, but also for elderly people in some surveys (40).

The SF-36 includes eight domains: Physical functioning (PF), Role physical (RP), Bodily pain (BP), General health (GH), Vitality (VT), Social functioning (SF), Role emotional (RE), and Mental health (MH). It also provides two summary scales, Physical Component Summary (PCS) and Mental Component Summary (MCS). Scores range from 0 to 100 for each subscale with higher scores indicating a better condition (41).

The SF- 36 was translated from English into Kiswahili language. The Kiswahili form of SF - 36 has been validated by various studies in Tanzania using different methods like group validation method. Forward and backward translation procedures produced a Kiswahili SF-36 that was considered conceptually equivalent to the US English SF-36. Therefore, the Kiswahili version of SF-36 was used to asses quality of life of the elderly patient CKD as used in other studies (42,43).

3.8 Training of Research Assistants and Pretesting of Data Collection Intruments

Two Research Assistants, who were nurses by profession were recruited to assist in data collection for this study. The questions were pretested at the diabetic clinic at MNH . A total of 20 patients were randomly selected for the pretesting. Pre testing was done to check if the questions were understood by the respondents. Pretesting helped the adjusting and refining of the questions, on the first part of the tool, the SF – 36 was adapted and no content changes were made. The Kiswahili version of the questionnaire was pretested by the Research Assistants under the supervision of the Principal Investigator, in order to familiarize with the process, methodology and technique of data collection. The research assistants were trained on how collect to data using quantitative tools, how to maintain good rapport with the study

participants, how to ask participants to consent and voluntarily participate in the study. The training of Research Asssistants was conducted by principal researcher on informed consent, data collection tools and sampling techniques.

3.9 Validity and Reliability of the Intruments

The English version of the questionnaire was translated into Kiswahili using the International Quality of Life Assesment (IQOLA) method of forward and backward translation, because Kiswahili was the spoken language by the study respondents. Pretesting of the questionnaire was done to improve contents and contruct validity, and furthermore to improved the relevance of the tool.

3.10 Data Collection Procedure

Convenience sampling technique was used in this study. Research assistant (RA) under guidance of treating doctor and nurse reviewed the patient eligible for the study. If a patient meet the inclusion criteria, RA introduced himself and developed rapport and asked the patient to join the study. Informed written consent was obtained from the patient prior to interview, after the patient had been explained the nature and purpose of the study [Appendix-III]. Research assistants approched a patient for interview when a patient was awaiting to be seen by a doctor or after been seen by a doctor. Others were approached when undergoing dialysis. The RA asked the closed ended questions and then recorded the response in the questionnaire [Appendix I]. The data was collection procedure lasted for per patient on average. Data collection procedure did not hind or disturb patient care. Confidentiality was maintained during data collection. For every respondent, the RA ensured there was no unauthorized person around who would hear the participant's responses. Furthermore, the participants were assured of confidentiality of the information collected. At the end of the data collection the researcher or research assistant thanked each participant.

3.10.1. Data Management, Scoring and Analysis

The quality of data was assesed during data collection , coding, entry and analysis. During the data collection time adequate supervision was provided to Research Assistants. All questionnaires were checked by the Principal Researcher. Data was entered using Statistical Package for Social Scientists (SPSS) softwareversion 25. Data analysis was done according to the specific objectives using descriptive and inferential statistics.

The SF-36 items and scales were scored, a higher score indicates a better health state. For instance, functioning scales were scored and a higher score indicated better functioning and the higher score in pain scale indicated freedom from pain.

4 Scoring and Interpretation

The scoring procedure for the SF – 36 was done by first checking the items from all the 8 recorded. Final value was calculated according to guideline of interpreting SF -36 (41), with higher final values always reflecting better quality of life (Table 3.9).

After final value was obtained a raw score which is simple algebraic sum of all responses (final value) in that scale was computed.

The next step involed transforming each raw scale into a 1 to 100 scale using the following formula:

Transformed scale = (Actual raw score – lowest possible raw score) then was divided by possible raw score range and multiply by 100.

Table 3.9: The process of scoring and interpretation of original responses

Item	Response choice	Original response	Final Value	Lowest and Highest possible raw score	Possible range
General Health Status (GH) 1 and 11a to 11d	Excellent Very good Good Fair Poor	1 2 3 4 5	5.0 4.4 3.4 2.0 1.0	5, 25	20
Physical Functioning (PF) 3a to 3j	Yes, limited a lot Yes limited a little No, not limited at all	1 2 3	1 2 3	10, 30	20
Role Physical (RP) 4a to 4d	Yes No	1 2	1 2	4, 8	4
Role Emotional (RE) 5a,5b, 5c	Yes No	1 2	1 2	3,6	3
Social Functioning (SF) 6 and 10	**For 6** Not at all Slightly Moderately Quite a bit Extremely	 1 2 3 4 5	 5 4 3 2 1	2,10	8
	For question 10 Not at all Slightly Moderately Quite a bit Extremely	 1 2 3 4 5	 1 2 3 4 5		
Bodily Pain (BP) 7 and 8	None Very mild Mild Moderate Severe Very severe	1 2 3 4 5 6	6 5 4 3 2 1	2, 12	10

Mental Health (MH) 9b, 9c, 9d, 9f and 9h	**For 9b, 9c and 9f** All of the time Most of the time A Good bit of the time Some of the Time A little of the time None of the time	 1 2 3 4 5 6	 1 2 3 4 5 6	5, 30	25
	For 9d and 9h All of the time Most of the time A Good bit of the time Some of the Time A little of the time None of the time	 1 2 3 4 5 6	 6 5 4 3 2 1		
Vitality (VT) 9a, 9e, 9g, 9i	**For 9a and 9e** All of the time Most of the time A Good bit of the time Some of the time A little of the time None of the time	 1 2 3 4 5 6	 6 5 4 3 2 1	4, 24	20
	For 9g and 9i All of the time Most of the time A Good bit of the time Some of the time A little of the time None of the time	 1 2 3 4 5 6	 1 2 3 4 5 6		

For 34 of the SF-36 items , research have shown there is a strong evidence they follow linear realtionship between item scores and the underlying health concept defined by the their scales, while General Health (GH) scale and the Bodily Pain Pain (BP) scale was recalibreted in this study (41).

3.11 Ethical considerations

The ethical clearance to conduct the study was obtained from the Institution Review Board (IRB) under directorate of Research and Publication of Muhimbili University of Health and Allied Sciences. Permission to conduct the study was also obtained from The Executive Director, Director of Research and Training, and from Head Renal Unit - Muhimbili National Hospital. Voluntary participation was encouraged, and the participants were assured confidentiality. Privacy and confidentiality were highly maintained by avoiding unauthorized persons from accessing study information. The study data were saved in a password protected computer by restricting unauthorized personnel from accessing study data. Anonymity was maintained by using participant identification number. No names of the respondents were recorded in the questionnaire.

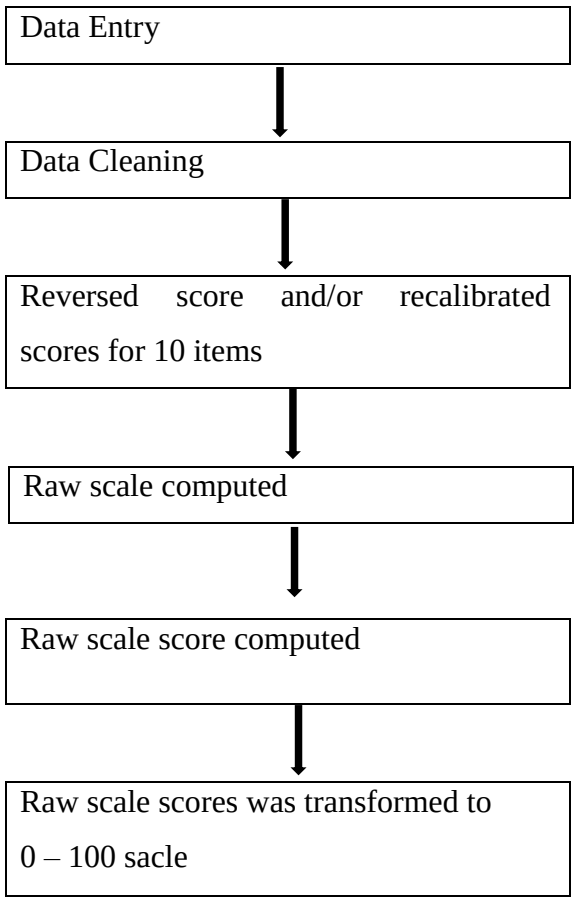
The detail of the study was clearly explained to the participants, which included purpose of the study with respect to the benefits of the finding of the study to society. No harm was imposed by this study.

CHAPTER FOUR

4.0 RESULTS

Flow chart 4 summarizes step by step process of data entry to data scoring in this study.

Flow Chart 4.3 Step by step process of data entry to data scoring in this study for the SF - 36.



4.1 Respondents Characteristics

A total of 151 elderly patients with CKD stage I to V were selected and interviewed. Data were complete for 139 patients who are included in final analysis. A total of 12 respondents could not complete interview due to personal or medical care related reasons.

The mean age and standard of the study participants were 66.50 (SD=5.034). The majority of the participants (72.7%) were in the age group between 60-69 years (Table 4.1).

About three quarters (74.8%) of all respondents were males. Majority of respondents (94.2%) were residing in Dar es Salaam City, and slight above half (54%) of respondents had primary school education. Most of the participants were married (78.4%) and 85.6% had retired from employment. Among all participants, 77% were using health insurance to cover cost of care, and only two (1.4%) reported to had been exempt from paying for care while 21.6% pay fee for service they received (Table 4.1).

Table 4.1: Socio-demographic characteristics of the respondents (n=139)

Variable category	Number(Percent)
Age group (years)	
60-69	101 (72.7)
70-79	34(24.5)
≥80	4 (2.9)
Sex	
Male	104(74.8)
Female	35(25.2)
Place of Residence	
Dar es Salaam	131 (94.2)
Outside Dar es Salaam	8 (5.8)
Education Status	
Primary	75 (54)
Secondary	10 (7.2)
College and above	49 (35.3)
Informal education	5 (3.6)
Marital status	
Never married	4(2.9)
Married	109 (78.4)
Divorced/Widowed	17 (12.2)
Cohabiting	9 (6.5)
Occupation Status	
Full time	9 (6.5)
Part time	9 (6.5)
Sick leave	2 (1.4)
Retired	119 (85.6)
Number of Dependants	
1-2	45(32.4)
3-4	60 (43.2)
≥5	24.5(24.5)
Main source of income	
Employed	4 (2.9)
Self Employed	9 (6.5)
Relatives	95(68.3)
Other Sources	31(22.3)
Fee for service	
Exemption	2 (1.4)
Cost Sharing	30 (21.6)
Insurance Company	107 (77)

4.2 Clinical profile of the respondents

Table 4.2 shows majority of respondents (72.7%) had experienced illness for 3 months to 1 year since diagnosis. Two thirds (67.6%) of the respondent were on CKD treatment for 3 three months to one year. More than half (56.1%) were in stage V of CKD, 23% were in stage III, 11.5% were in stage IV, 7.2% were in stage II and 2.2% were in stage I. About 40.3% of respondents were on dialysis treatment. All reported to be on hemodialysis; no one reported to be on peritoneal dialysis.

Table 4.2: Clinical profile of the respondents (n=139)

Variable category	Number(Percentage)
Duration of illness since diagnosis (years)	
0.25 – 1	101(72.7)
1 – 3	31 (22.3)
3 – 5	5 (3.6)
> 5	2 (1.4)
Duration of illness since treatment (years)	
0 – 1	94(67.6)
1 – 3	33(23.7)
3 – 5	8 (5.8)
> 5	4 (2.9)
Stage of Chronic Kidney Disease (CKD)	
I	3(2.2)
II	10(7.2)
III	32(23)
IV	16(11.5)
V	78(56.1)
Type of treatment	
Conservative	53 (38.1)
Hemodialysis	56(40.3)
Renal transplant	30(21.6)

4.3 Health Related Quality of Life

Table 4.3 show the summarizes mean scores and their corresponding score in 0 to 100 scale of all 8 domains and overall health related quality of life among respondents. The mean and standard deviation scores on the health related quality assessment parameters were recorded as follows: The highest score recorded in 0 to 100 scale was Mental Health 68.0, Bodily Pain 60.3, Social Functioning 58.5, Vitality 54.4, General Health Status 46.0 and Physical Functioning 45.5

The lowest score was recorded at Role Physical and Role Emotional domains which were 17.5 and 21.7 respectively. The overall health related quality of life was 46.5 (Table 4.3).

Table 4.3: Trend of Health Related Quality of Life (n=139)

Domain	Functional Scale	Mean	SD	0 TO 100 SCALE
GH	General Health Status(GH)	2.84	0.54	46.0
PF	Physical Functioning (PF)	1.91	0.61	45.5
RP	Role Physical (RP)	1.19	0.03	17.5
RE	Role Emotional (RE)	1.22	0.03	21.7
SF	Social Functioning (SF)	3.34	0.01	58.5
BP	Bodily Pain (BP)	4.01	0.63	60.3
MH	Mental Health (MH)	4.40	0.34	68.0
VT	Vitality (VT)	3.72	1.34	54.4
Overall Health Quality of Life Scores		**2.82**	**1.26**	**46.5**

4.4 Social-demographic and economic determinants associated with the health related quality of Life

The multivariate analysis between the independent variable (some socio-demographic characteristics) and dependent variable (Health related quality of life), show that demographic determinants significantly associated with overall quality of life was Place of residence (P value =0.042). In this study age group, sex, education status, marital status, occupation status, main source of income and fee for service; was not statistically significant associated with mean HRQoL (Table 4.4.1).

Table 4.4.1: Socio-demographic determinant of health quality of Life (n=139)

Variable category	Mean	SD	P-value
Place of residence			
Dar es Salaam	3.11	0.806	0.042
Outside Dar es salaam	2.50	0.926	

Table 4.4.2: Clinical determinant of health quality of Life (n=139)

Variable category	Mean	SD	P-value
Place of residence			
0.25 – 1	3.60	0.548	
1 – 3	3.29	0.864	0.006
≥ 3	3.01	0.781	
Stage of CKD			
I	3.26	0.746	
II	2.69	0.704	
III	2.97	0.897	0.020
IV	2.80	1.033	
V	2.33	0.577	

4.5 Association between stages of Kidney Disease and health quality of life

The multivariate analysis between the independent variable (stage of CKD) and dependent variable (mean Health related quality of life), The association between mean scores for the Chronic Kidney Disease stage and health related quality of life among elderly was statistical significant ($p < 0.002$).

Also, the multivariate analysis between the independent variable (duration of illness since diagnosis) and dependent variable (mean Health related quality of life), showed duration of illness since diagnosis was significantly associated (p value =0.06) with overall quality of life (Table 4.5).

Table 4.5: Relationship between stages of Chronic Kidney Disease and health related quality of life (n=139)

Dependent Variable: Health related quality of life			
Stage of Chronic Kidney Disease (CKD)	**Mean**	**Std. Deviation**	**P-Value**
Stage I	2.33	0.577	0.02
Stage II	2.80	1.033	
Stage III	2.97	0.897	
Stage IV	2.69	0.704	
Stage V	3.26	0.746	
Duration of illness since diagnosis (years)			
0.25 – 1	3.60	0.548	0.006
1 – 3	3.29	0.864	
≥ 3	3.01	0.781	

4.6 Association between modalities of treatment of Chronic Kidney disease and health related quality of life

Table summarizes HRQoL and the modalities of treatment of CKD. Findings show that, patients were in two major groups, Conservative treatment which is stage I to IV (38.1%) and renal replacement therapy (Dialysis and Transplant) group (61.9%). This study showed there was statistically significant difference (P <0.05) on mean HRQoL among CKD patients on dialysis, conservative treatment or kidney transplant.

Table 4.6: Relationship between modalities of fee for service of Chronic Kidney Disease patients and health related quality of life

Dependent Variable: Health related quality of life			
Modality of treatment	**Mean score**	**Std. Deviation**	**P-Value**
Conservative	2.50	0.707	
Dialysis	3.01	0.845	0.020
Renal transplant	3.13	0.814	

CHAPTER FIVE

5.0 DICUSSION

5.1 Health related quality of life

This study assessed 8 domains of health related quality of life. The overall HRQoL in this study was found to be significantly low. These results corroborates other is similar findings reported by Perlman et al, which showed lower (below 50%) overall health related quality of life in patients with moderate to advanced CKD (44). Although it is well documented that, naturally even without any chronic illness, elderly will have some impairment in their 8 domains assessed by SF-36 but studies have shown that their HRQoL is relatively high for those without chronic illness like CKD. Study done by Lima, et al in Brazil among population of elderly who were not sick their overall quality of life was 74.5 (25). This study demonstrates that CKD affect negatively the HRQoL among elderly attended to the clinic.

Low overall HRQoL among elderly with CKD may due to elderly this patients encounter many physical, mental and social problems. Symptoms such as fatigue, cramp, pain, sleep disorder, dyspnea, itching, depression, nausea, vomiting, constipation and food restrictions; which in results negatively influence all the areas of daily living and quality of life of individuals. Restriction in social life and physical activity difficulties occur together with these symptoms that are frequently experienced by CKD patients (45).

The Role Physical and Role Emotional had the lowest respectively. These findings is are corroborated with study done by Kisanga, in Dar es Salaam among kidney transplant patients, where the lowest domain was Role Physical and Role Emotional as well. Low scores in RP and RE reflect excessive burden of CKD in physical and emotion symptoms among the patients. These findings demonstrate that, management of patients with CKD should focus on relieving role physical and role emotional as a part of strategy to improve health of elderly patient with CKD attending clinic (46)

5.2. Socio-demographic, economic and clinical determinants of health related quality of life

HRQoL is a multi-dimensional model that is affected by diverse variables. Findings of this study the independent variables the place of residence, duration of illness since diagnosis and stages of Chronic Kidney disease were statistically significant (p-value < 0.05) by difference in affecting overall quality of life. This corroborates with to another study done in Greece to evaluate determinants of HRQoL among CKD patients, it shows that there is strong association between HRQoL and socio-demographic and economic characteristics of respondents(47). How this factors influence quality of life, there is mixed picture from one study to another wile in one study one determinant may show to have statistical significance, in another study it may be contrary (30,49).

In this study it was shown that there is no statistical difference (P value > 0.05) between mean HRQoL and the following socio-demographic characteristics; age group, sex, education status, marital status, occupation status, number of dependents, main source of income and fee for service. This corroborated with study done by Suet et al who found no association with age or marital status (48). Also, another study done by Elliot et al in Ghana found that HRQoL was not associated with age, sex, educational status, employment status and marital status (49). This is contrary to another study done by Czyzewski et al and one done by Bakewell et al which they showed sex, increasing age and unemployment to be associated with poor HRQoL (50,51).

Only two (1.4%) respondents in this study were exempt from paying for the care. Three quarters used health insurance to pay for the service. Although National Aging Policy (NAP) in Tanzania allow all elders to receive free medical services in this study most of them were not benefiting with this provisions of the elderly policy (3). Surprisingly, in this study those who paid for the service using health insurance were 77%, while health insurance coverage in Tanzania was about 16 % in general population in 2018 (55). This difference may be due to an arrangement of the clinic which is more welcoming health insured patient than those who are paying out of the pocket or exempted to pay fee for the service by policy.

Addressing this determinants of HRQoL among elderly with CKD attended to MNH clinic by health care providers and family will assist in holistic management of this patients.

5.3. Stages of Chronic Kidney Disease and health related quality of life

This study showed significant difference ($p < 0.05$) between the average mean scores for the Chronic Kidney Disease stage I,II,III, IV and V in relation to the HRQoL among participants in this study.

A study done by Pagels et al, to asses HRQoL in different stages of CKD, they found, all HRQoL dimensions deteriorated significantly with CKD stages with the lowest scores in CKD stage V (52). Another study done by Salim et al shows that Physical functioning score declined progressively with more advanced stages of CKD, and so did the score for role-physical (24).

Deteriorating HRQoL as patient move from stage I to V may be explained the fact that as patient kidney function deteriorate they show more physical, emotional and cognitive symptoms which affect functional status of the patient, this negatively affect general health perception, and finally HRQoL of the patient.

5.4 Relationship between modalities of treatment of Chronic Kidney disease and health related quality of life

There was significant statistical difference ($P<0.05$) between HRQoL and whether the patient was treated with conservative or renal replacement. In this study HRQoL among those on conservative treatment was slight low compared to those on renal replacement therapy. This findings is similar to the finding from the study done by Loon et al where they found quality of life slight low among those on conservative treatment compared to those elderly CKD patient on renal replacement treatment (53). Another study done by De Biase et al, in Italy among elderly patients age greater than 75 years where it was found there was no significant difference between those on conservative management and renal replacement therapy (dialysis or kidney transplant) (36) . The difference between this study and the one done by De Biase et

al, may be due to the fact that, the one done by De Biase involved elderly, age greater than 75 years who were frail.

5.5 Limitation

MNH is a tertiary national referral hospital, so respondents might not be representative of the entire population of elderly with CKD in Tanzania. Also this study was only recruiting patient who were able to answer questions, their feeling might not be representative of entire population of CKD elderly attended at the renal unit MNH.

This study focused on patient subjective responses, there was no way to verify the information given so there is a possibility of reporting bias. Questions in SF 36 are arranged in Likert scale to try to minimize bias and it has been tested in different patient population and cultural background and its reliability has been more than 0.78 in all the domains(54).

Some patients had more than one health problem therefore it was difficult ascertain to what extent other illness had contributed to their current status of HRQoL.

Convenience sampling was used in this study. This might have introduced sampling bias which limits the generalization of the results to the entire population of elderly with CKD at MNH and in the country. Review of the Renal Unit routine data was done after data collection, age and gender distribution was almost similar like in this study.

This was a psychometric study, therefore it’s difficult to compare across cultures. Effort was done during discussion to include previous studies done in Tanzania.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Elderly patient with Chronic Kidney Disease seen at Renal Unit at Muhimbili National Hospital their overall quality of life was significantly poor with more burden on physical and emotional symptoms. The place of residence, duration of illness since diagnosis and stages of Chronic Kidney disease was statistically significant associated with quality of life in this study.

6.2 Recommendation

More alternative are advised to improve the HRQoL among elderly patients attending MNH with a particular focus on the burden of role emotional and role physical symptoms. Further study using a qualitative approach to explore how place of residence, duration of illness since diagnosis and stages of CKD influence HRQOL among elderly patients with CKD attending MNH renal unit is recommended.

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APPENDICES

Appendix I: Questionnaire (English Version)

Questionnaire Number…….

Date……..Month…….Year……

Demographic Characteristics, Clinical Characteristics and Biochemical

1. Age _____ years.
2. Sex (1) Male (2) Female.
3. Place of Residence (1) Dar es Salaam (2) Outside Dar es Salaam
4. Living in (1) Rent house (2) Own house (3) Relative house (4) Others (Specify)……..
5. Education (1) Primary (2) Secondary (3) College/University (4) Informal education.
6. Marital Status (1)Single (2) Married (3)Divorced / Widowed / Separated
7. Occupation (1) Full time (2) Part time (3) Sick leave (4) Retired (5) self-employed (VI) Others ……..
8. Number of Dependants ……..
9. What is the main source of income (1) Employment (2) Self-employed (3) Relative (4) Others (specify).....
10. Mode of payment (1)Exemption (2)Cost sharing (3) Insurance/Company (4) IPPM (5) Others (Specify) _____
11. Duration of illness since diagnosis (1) < 3months (2) 3 months – 1 year (3) 1 years – 3 years (4) 3 years – 5 years (5) > 5 years

12. Duration of illness since treatment a) < 3months b) 3 months – 1 year c) 1 years – 3 years d) 3 years – 5 years e) > 5 years

13. Stage of CKD (1). - I (2). - II (3) - III (4) – IV (5) - V

14. Type of treatment (1) conservative treatment. Specify …… (2) Dialysis _____ (3) Renal transplant (4) others (Specify)……

SF 36 - ENGLISH VERSION

Instructions: This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

1. In general, would you say your health is: (circle one)

Excellent	1
Very good	2
Good	3
Fair	4
Poor	5

2. Compared to one year ago, how would you rate your health in general now? (Circle one)

Much better now than one year ago	1
Somewhat better now than one year ago	2
About the same as one year ago	3
Somewhat worse now than one year ago	4
Much worse now than one year ago	5

3. The following questions are about activities you might do during a typical day. Does <u>your health now limit you</u> these activities? If so, how much? (Circle one number on each line)

ACTIVITIES		**Yes, Limited A Lot**	**Yes Limited A Little**	**No, Not Limited At All**
a.	Vigorous activities, such as running, lifting heavy objects, participating in strenuous sport	1	2	3
b.	Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
c.	Lifting or carrying groceries	1	2	3
d.	Climbing several flights of stairs	1	2	3
e.	Climbing one flight of stairs	1	2	3
f.	Bending, kneeling or stooping	1	2	3
g.	Walking more than a mile	1	2	3
h.	Walking half a mile	1	2	3
i.	Walking one hundred yards	1	2	3
j.	Bathing or dressing yourself	1	2	3

4. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health? (Circle one number on each line)

		YES	**NO**
a	Cut down on the amount of time you spent on work or other activities	1	2
b	Accomplished less than you would like	1	2
c	Were limited in the kind of work or other activities	1	2
d	Had difficulty performing the work or other activities (for example, it took extra effort)	1	2

31. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)? (circle one number on each line)

		YES	**NO**
a.	Cut down on the amount of time you spent on work or other activities	1	2
b.	Accomplished less than you would like	1	2
a.	Don't do work or other activities as carefully as usual	1	2

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups? (Circle one)

Not at all	1
Slightly	2
Moderately	3
Quite a bit	4
Extremely	5

7. How much bodily pain have you had during the past 4 weeks (circle one)

None	1
Very mild	2
Mild	3
Moderate	4
Severe	5
Very severe	6

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)? (Circle one)

Not at all	1
A little bit	2
Moderately	3
Quite a bit	4
Extremely	5

9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closet the way you have been feeling. How much of the time during the past 4 weeks – (circle one number on each line)

		All of the Time	Most of the Time	*A Good bit of the* Time	*Some of the Time*	*A little of the Time*	None **of the** Time
a.	Did you feel full of life?	1	2	3	4	5	6
b.	Have you been a very nervous person?	1	2	3	4	5	6
c. d. e.	Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
f.	Have you felt calm and peaceful?	1	2	3	4	5	6
g.	Did you have a lot of energy?	1	2	3	4	5	6
f.	Have you felt downhearted and low?	1	2	3	4	5	6
g.	Did you feel worn out?	1	2	3	4	5	6
h.	Have you been a happy person?	1	2	3	4	5	6
i.	Did you feel tired?	1	2	3	4	5	6

10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)? (Cicle one)

All of the time	1
Most of the time	2
Some of the time	3
A little of the time	4
None of the time	5

11. How TRUE or FALSE in each of the following statements for you? (Circle one number on each line)

		Definitely **True**	Mostly True	Don't Know	Mostly False	Definitely **False**
A	I seem to get ill more easily than other people	1	2	3	4	5
B	I am as healthy as anybody I know	1	2	3	4	5
C	I expect my health to get worse	1	2	3	4	5
D	My health is excellent	1	2	3	4	5

Appendix II: Dodoso - Kiswahili

Namba ya dodoso _____

Tarehe……..Mwezi…….Mwa

1. Umri_____ miaka.
2. Jinsia (1) Mwanaume (2) Mwanamke
3. Sehemu anakoishi (1) Dar es Salaam b) Nje ya Dar es Salaam
4. Unaishi kwenye nyumba ya (1) kupanga

   (2)Ya kwako mwenyewe (3) Ndugu (4) Nyingine (taja)…….
5. Elimu (1) Msingi (3) Sekondari (3) Chuo (4) Hakusoma
6. Hali ya ndoa (1)Hajao (2) Ameoa (3) Talaka / mjane / wameachana
7. Ajira (1) Ya kudumu (2)Kibarua (3)Likizo ya ugonjwa (4) Mstaafu (5)Amejiajiri (6) Nyingine (taja)……
8. Idadi ya wategemezi …….
9. Njia kuu ya kipata (1) Kuajiriwa (2) Nimejiajiri (3) Msaada wa Ndugu (4) Nyingine (Taja)_
10. Njia ya malipo ya matibabu (1) Msamaha (2) Changia matibabu (3) Bima/Kampuni (4) IPPM (5) Nyingine (Taja) ……..
11. Muda tangia ugonjwa wa figo julikana (1) chini ya miezi 3 (2) miezi 3 – mwaka 1 (3) mwaka 1– miaka 3 (4)miaka 3– miaka (5) zaidi ya miaka 5
12. Muda tangia kuanza matibabu ya figo (1) chini ya miezi 3 (2) miezi 3 – mwaka 1 (3) mwaka 1– miaka 3 (4)miaka 3– miaka (5) zaidi ya miaka 5
13. Ngazi ya ugonjwa sugu wa figo CKD (1). - I (2). - II (3) - III (4) – IV (5) - V

14. 14. Aina ya matibabu (1) matibabu kwa kutumia dawa (Taja) ……(2) Kuchujwa tamu (3) kuwekewa figo nyingine (4) Nyingine taja_____

SF 36- Kiswahili Version

Habari hii itamuwezesha mtoa huduma ya afya kuweka rekodi ya jinsi unavyojihisi na ni kwa vizuri kiasi gani unaweza kufanya shughuli za kawaida. Jibu kila swali kwa kuweka alama juu ya mstari mbele ya swali husika. Endapo huna hakika kuhusu kujibu la swali, tafadhali toa jibu bora utakavyoweza na weka maoni kwa maandishi pembezoni mwa jibu

1. Kwa KAWAIDA, unaweza kusema afya yako ni:

Nzuri mno	1
Nzuri sana	2
Nzuri	3
Inaridhisha	4
Dhaifu	5

2. UKILINGANISHA NA MWAKA MMOJA ULIOPITA, afya yako kwa ujumla unaweza ukaiweka katika kiwango gani? (Zungushia moja)

Nzuri sana ukilinganisha na mwaka mmoja uliopita	1
Kiasi nzuri kuliko mwaka mmoja uliopita	2
Vivyo hivyoas kama mwaka mmoja uliopita	3
Mbaya kiasi ukilinganisha na mwaka mmoja uliopita	4
Mbaya sana ukilinganisha na mwaka mmoja uliopita	5

3. Maswali mawili yanayofuata ni kuhusu shughuli unazoweza kufanya katika siku za kawaida. Je, AFYA YAKO SASA INAKUZUIA katika shughuli hizi? kama ndio, kwa kiasi gani?

KAZI		Ndio, ukomo sana	Ndio, ukomo kidogo	Hapana, hakuna ukomo kabisa
a.	KAZI ZA KUTUMIA NGUVU, kama kukumbia, kunyanyua vitu vizito au michezo inayotumia nguvu	1	2	3
b.	KAZI ZA KIASI, kama vile kuhamisha meza, kusukuma kizoa vumbi, kuviringisha tufe, au kucheza mpira wa miguu	1	2	3
c.	Kunyanyua au kubeba vitu vizito	1	2	3
d.	Kupanda ngazi KADHAA	1	2	3
e.	Kupanda ngazi MOJA	1	2	3
f.	Kuinama au kupiga magoti	1	2	3
g.	Kutembea ZAIDI YA MAILI MOJA	1	2	3
h.	Kutembea NUSU MAILI	1	2	3
i.	Kutembea HATUA MIA MOJA	1	2	3
j.	Kuoga na kuvaa mwenyewe	1	2	3

4. Katika kipindi cha WIKI 4 ZILIZOPITA je, umekuwa na matatizo yafuatayo na kazi yako au shughuli za kawaida KUTOKANA NA SABABU YA AFYA YAKO YA MWILI?

		NDIO	HAPANA
a	Kupunguza muda unaotumia kwenye kazi na mambo mengine	1	2
b	UMETIMIZA KIDOGO kuliko ambavyo ungependa:	1	2
c	Je, kulikuwa na ukomo kwako wa AINA ya kazi au shughuli nyingine:	1	2
d	Unapata shida kufanya kazi au shughuli nyingine (mfano, inakuchukua nguvu za ziada)	1	2

5. Katika kipindi cha WIKI 4 ZILIZOPITA, ulishindwa kufanya aina yoyote ya kazi au shughuli nyingine za kawaida KUTOKANA NA SABABU YA MATATIAZO YAMSONGO (kama vile kuhisi msongo au wasiwasi)?

		NDIO	HAPANA
a.	Umepunguza MUDA unaotumia kwenye kazi au shughuli nyingine	1	2
b.	UMETIMIZA KIDOGO kuliko ambavyo ungependa	1	2
c.	Sifanyi kazi na shughuli zingine kwa umakini kama kawaida	1	2

6. Katika kipindi cha WIKI 4 ZILIZOPITA, ni kwa kiasi gani hali yako ya kimwili au kimawazo imeweza kuingilia shughuli zako za kawaida za kijamii na kaya yako, marafiki, majirani au vikundi ? (zungushia moja)

Sio kabisa	1
Kidogo tu	2
Wastani	3
Kiasi kidogo	4
Mno	5

7. Umekuwa na maumivu kiasi gani kwa wiki 4 zilizopita (zungushia moja)

Hapana	1
Kidogo sana	2
Kidogo	3
wastani	4
Makali	5
Makali sana	6

8. Katika kipindi cha WIKI 4 ZILIZOPITA, ni kwa kiasi gani MAUMIVU yaliingiliana na kazi zako za kawaida (pamoja na kazi zote za nje na nyumbani)?

Sio kabisa	1
Kidogo tu	2
Wastani	3
Kiasi kidogo	4
Mno	5

9. Maswali matatu yafuatayo ni kuhusu unajihisi vipi na mambo yalikuwaje KATIKA WIKI 4 ZILIZOPITA. Kwa kila swali tafadhali toa jibu moja ambalo linakuja karibu na jinsi ulivyojihisi. Ni kwa kiasi gani cha muda katika WIKI 4 ZILIZOPITA

		Wakati wote	Wakati mwingi	*Kiasi kizuri kidogo cha muda*	*Wakati mwingine*	*Wakati mdogo kiasi*	Hakuna wakati
h.	Je ulihisi utulivu na amani?	1	2	3	4	5	6
i.	Je umekuwa mtu mwenye hasira sana?	1	2	3	4	5	6
j. k. l.	Je umejisikia mnyonge kiasi kwamba hakuna kitu chochote kinachoweza kukufurahisha?	1	2	3	4	5	6
m.	Umejisikia mwenye utulivu na amani?	1	2	3	4	5	6
n.	Je, ulikuwa na nguvu nyingi?	1	2	3	4	5	6
f.	Je, ulihisi kuvunjika moyo au huzuni?	1	2	3	4	5	6
i.	Ulijisikia huzuni?	1	2	3	4	5	6
j.	Umekuwa mtu mwenye furaha?	1	2	3	4	5	6
j.	Umejihisi kuchoka?	1	2	3	4	5	6

10. Katika MIEZI 4 ILIYOPITA, ni kwa kiasi gani cha muda HALI YA MATATIZO YAKO YA AFYA AU MSONGO iliingilia shughuli zako za kijamii (kama kutembelea marafiki, ndugu n.k.)?

Wakati wote	1
Wakati mwingi	2
Kiasi kizuri kidogo cha muda	3
Wakati mwingine	4
Hakuna wakati	5

11. Kuna ukweli au uongo kiasi gani katika kila sentensi zifuatazo kuhusiana na wewe? (zungushia nambari moja katika kila sentensi))

		Kweli kabisa	Ukweli kiasi	Sijui	Uongo kiasi	Uongo kabisa
A	Najisikia kuugua mara kwa marara ukifananisha na watu wengine	1	2	3	4	5
B	Nina afya kama mtu mwingine yeyote	1	2	3	4	5
C	Natarajia afya yangu kuzorota	1	2	3	4	5
D	Afya yangu ipo vizuri kabisa	1	2	3	4	5

Appendix III: Consent Form (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS

INFORMED CONSENT FORM

ID-NO ☐☐☐

Consent to participate in interview

Greetings! My name is Bernard Kepha. I am a student from Muhimbili University of Health and Allied Sciences Pursuing Master degree of Public Health. I'm requesting your permission to collect data that, will lead to successfully conduction and completion of my study titled: ‟Factors affecting the quality of life among elderly patients with Chronic Kidney Disease attending outpatient clinic at Muhimbili National Hospital″

Purpose of the Study

This study is intended to collect information on the factors affecting the quality of life among geriatrics patients attending at Muhimbili National Hospital″. The information collected will help the principal investigator to write a dissertation which is a partial fulfillment of MSc of Public Health of Muhimbili University of Health and Allied Sciences.

What Participation Involves

If you agree to participate in this study, you will be required to answer questions by providing necessary information regarding factors affecting the quality of life among elderly patients attending at Muhimbili National Hospital.

Confidentiality

Privacy and confidentiality will be highly maintained by avoiding unauthorized persons from accessing study information. Anonymity will be maintained using questionnaire ID. No name will be recorded in the questionnaire.

Risks

We do not expect any harm to happen in this interview, as there will be no invasive procedure in this study.

Rights to Withdraw and Alternatives

Participation in this study is completely voluntarily .You can stop participating in this study at any time, even if you have already given your consent. You have also got right to refuse to participate or withdrawal from the study and there will be no penalty or loss of any benefits to which you are otherwise entitled.

Benefits

The information provided will be helpful in providing necessary information in order to address the knowledge gap on the factors affecting the quality of life among geriatrics patients attending at Muhimbili National Hospital. It is hoped that, the results of this study will be utilized by Health care professional, Government and other stakeholders to improve the quality of life among geriatric populations.

In Case of Injury

We do not anticipate any harm to occur by participating in this study since this just interview based study.

Whom to Contact

In case of any questions about this study please don't hesitate to contact Principle Investigator Bernard Kepha of Muhimbili University of Health and Allied Sciences (MUHAS), P.O. Box 65001, Dar es Salaam (Tel. No. +255766461461). And any questions about right to conduct this study, you may call Chairman of University Research and Publication Committee, Dr. Joyce Masalu P.O .Box 65001, Dar es Salaam Tel, 2150302-6, and Prof Mujinja who the supervisor of this study.

Signature: …….

Do you agree? Participant agrees…… Participant does not agree ……

I _____have read/listened the contents in this form.

My questions have been answered. I agree to participate in this study.

Signature of participant _____

Signature of research assistant _____

Date of signed consent _____

Appendix IV: Fomu Ya Ridhaa

CHUO CHA SAYANSI ZA TIBA MUHIMBILI
KURUGENZI YA UTAFITI NA MACHAPISHO

NAMBARI YA SIRI YA FOMU: ☐☐☐

RIDHAA YA USHIRIKI KATIKA UTAFITI

Habari! Jina langu ni: **Bernard Kepha,** ni mwanafunzi wa shahada ya pili ya uzamili katika Chuo Kikuu cha Sayansi za Afya Muhimbili. Ninafanya utafiti kama sehemu ya masomo yangu, kuhusu **"Sababu zinazoathiri ubora wa maisha miongoni mwa wazee wenye ugonjwa sugu wa figo wanaohudhuria matibabu hospitali ya Taifa ya Muhimbili".**

Umuhimu wa utafiti huu

Matokeo ya utafiti huu yatasaidia kuelewa sababu kubwa zinazoathiri ubora wa maisha miongoni mwa wazee wanaohudhuria matibabu hospitali ya Taifa ya Muhimbili. Taarifa zitakazokusanywa zitamsaidia mtafiti mkuu kuandika ripoti yake na kufanikiwa kumaliza masomo yake ya Astashada ya elimu ya afya ya jamii ya chuo kikuu cha afya na tiba cha muhimbili.

Pia matokeo ya utafiti huu yataisaidia serikali,wananchi na wadau wa afya kujua ukubwa wa tatizo na sababu kubwa zinazoathiri ubora wa maisha miongoni mwa wazee wanaohudhuria matibabu hospitali ya Taifa ya Muhimbili na kulitafutia ufumbuzi.

Ushiriki unahusisha nini

Ushiriki unahusisha kukubali kujiunga na utafiti huu kwa hiari na kujibu maswali kama yalivyo katika dodoso la utafiti huu ili kuwezesha utafiti huu kufanyika

Usiri

Taarifa zote utakazo jaza katika dodoso ni siri na wala jina lako halitaingizwa katika kompyuta isipokua nambari pekee ya dodoso tu.Uwezekano wa kutokea jambo la hatari
Sitarajii kama kuna jambo lolote baya linaweza kutokea kwa kushiriki katika utafiti huu.

Haki ya kujitoa na mambo mbadala

Ushiriki wako katika utafiti huu ni wa hiari. Hivyo unayo haki ya kujibu au kutojibu swali lolote katika dodoso. Kukataa kujibu swali lolote hakuna adhabu yoyote wala haupotezi haki zako kama mshiriki na katika kupata huduma za kishule kama wanafunzi wengine.

Faida kwa Mshiriki

Endapo utakubali kushiriki katika utafiti huu unaweza ukapata faida ya moja kwa moja au isiyo ya moja kwa moja. Faida isiyo ya moja kwa moja, ni kwamba majibu yako yatakuwa mchango mkubwa katika matokeo ya jumla ya utafiti huu kwanza kwa kujua ukubwa wa tatizo hili; pili, ambayo yanatarajiwa kuleta mapendekezo kwa serikali na nyombo vingine yatakayosaidia kuongezeka kwa ubora wa huduma za afya miongoni mwa wazee wanaohudhuria matibabu na wengine kwa ujumla wake.

Mawasiliano

Endapo utakuwa na swali lolote kuhusu utafiti huu tafadhali wasiliana na msimamizi wa utafiti huu Prof Mujinja au mtafiti mkuu Bernard Kepha , Chuo Kikuu Kishiriki cha Sayansi za Afya, P.O.Box 65015, Dar es Salaam. (Simu number. +255766461461).

Endapo una swali lolote kuhusu haki zako kama mshiriki katika utafiti huu, wasiliana na Mwenyekiti wa Utafiti na Machapish, Dr Joyce Masalu, SLB 65001, Dar es Salaam. Simu: 2150302-6.

Sahihi.....

Je unakubali kushiriki? Ninakubali kushiriki ☐ Sikubali kushiriki ☐

Mimi _____ nimesoma/nimesomewa na kuyaelewa vyema maelezo yaliyomo katika fomu hii. Maswali yangu yamejibiwa. Ninakubali kushiriki katika utafiti huu.

Sahihi ya Mshiriki _____

Sahihi ya Mtafiti _____Tarehe ya kusaini _____

Appendix V: 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/

29th March, 2019

Dr. Bernard Kepha David
MPH-Distance Learning
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED: "HEALTH RELATED QUALITY OF LIFE AND ITS DETERMINANTS AMONG ELDERLY PATIENTS WITH CHRONIC KIDNEY DISEASE ATTENDING AT MUHIMBILI NATIONAL HOSPITAL, 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 **28th March, 2019 to 27th March, 2020.** In case you do not complete data analysis and dissertation report writing by **27th March, 2020,** 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 Public Health and Social Sciences, MUHAS

Appendix VI: Permission to collect data

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/2019/047 **3rd April, 2019**

Head of Department,
Internal Medicine
Muhimbili National Hospital

RE: PERMISSION TO COLLECT DATA AT MNH.

Name of Student	**Benard Kepha David**
Title	**" health related quality of life and its determinants among elderly pateints with chronic kidney disease attending at ".**
Institution	Muhimbili University of health and Allied Sciences
Supervisors	**Dr. Prof. Phares Mujinja**
Period	3/4/2019 to 30/09/2019 (6 months)

The above named student has been permitted to collect data for the above study.
Please ensure that the researcher abide to the ethical principle and other conditions.

Sincerely,

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

c.c DMS
c.c. **Benard Kepha David**

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