ASSESSMENT OF HEALTH RELATED QUALITY OF LIFE AMONG PATIENTS WITH CHRONIC KIDNEY DISEASE ON MAINTENANCE DIALYSIS

BY

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CERTIFICATE

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"Oh, give thanks to the 'Lord', for He is good!

For His mercy endures forever"

(Psalms – 136:7)

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ABSTRACT

Background: Chronic Kidney Disease (CKD) is a Health Related Quality of Life (HRQOL) deteriorating disease which is not only a public health but also a socio economic problem of a country. This study intended to determine health related quality of life among patients with chronic kidney disease on maintenance dialysis at Lee Kidney Care and Multi Speciality Hospital, Madurai. **Method:** A quantitative approach was used for this study. The design adopted for the study was descriptive correlation research design. Purposive sampling technique was adopted to select 75 patients with Chronic Kidney Disease on maintenance dialysis. The techniques used for data collection were interview and record analysis. Assessment of health related quality of life was done by using the KDQOL-SF 1.3 also includes a 36- item health survey (RAND 36- items Health Survey 1.0 or SF-36). Data were analysed using descriptive and inferential statistics. **Results:** Among 75 patients with chronic kidney disease 73.3% were above the age of 50 years .Males (62.7%) are more affected than female (37.3%). Majority of them were hailed from rural area (72%). Nearly 2/3rd of them (66.7%) have been undergoing dialysis for more than 3 years. Diabetes and hypertension was the leading cause of CKD. The Overall HRQOL of CKD patients on maintenance dialysis is 31.87±3.51, Overall Physical health composite (20.36 5.70), Mental health composite (26.05 6.89), Kidney Disease Problem Composite (30.69 4.56) and Patient satisfaction (50.49 11.87), in which HRQOL related to physical health composite is the worst affected. There is a statistically significant association between overall physical health composite score and serum creatinine (mg/dl) [t= 02.85, p =0.006], overall mental health composite score and selected demographic Occupation [t= 2.03,p = 0.003], overall kidney disease problem composite score and selected biochemical variable like hemoglobin (g/dl) [t= 2.05, p =0.02] and blood urea (mg/dl) [t=2.22, p=0.02],overall patient satisfaction composite score and selected demographic variable education [t= 2, p = 0.04],overall patient satisfaction composite score and selected clinical variable like stay in any hospital overnight or longer (days) [t= 1.91, p = 0.05] and duration of illness [F= 2.65, p = 0.04], overall health related

quality of life and selected demographic variable occupation [t= 2.34, p = 0.04], income [F = 2.71, p = 0.05] and there is positive relationship were found between mental health composite and kidney disease problem composite (r=0.28, p=0.01), overall health related quality of life and mental health composite score (r=0.46.p=0.00), overall health related quality of life and kidney disease problem composite (r = 0.27, p = 0.01), overall health related quality of life and patient satisfaction (r=0.63, p = 0.00). **Conclusion:** CKD has a profound effect on HRQOL and a better understanding of HRQOL issues would enable providers to deliver more patient-centred care and improve overall well-being of the patients.

CHAPTER I

INTRODUCTION

BACKGROUND OF THE STUDY

Chronic Kidney Disease (CKD) has been increasingly recognized as a global health burden. The prevalence of CKD is 10 – 15% in the general adult population in both high and low income countries (Stephanie et al., 2015). CKD is a complex debilitating disease affecting approximately 7% of all people aged 30 years and older, which translates to more than 70 million people in developed countries worldwide. This number is likely to be much higher given the unknown prevalence in underdeveloped countries. The increased prevalence of diabetes, hypertension, and obesity and an aging population will only perpetuate the rise of CKD (Ann et al., 2012).

CKD involves progressive, irreversible loss of kidney function. It is defined as either the presence of kidney damage or GFR < 60 ml/min for three months or longer (Terran, 2008).

According to the 2002 National Kidney Foundation Kidney Disease Outcomes Quality Initiative (NKF – KDOQI) staging system (Table 1) is the predominant system incorporated into published reports. Published statistics for later stages of disease (e.g., stages 4 – 5) were assumed to include only individuals not yet on maintenance renal replacement therapies (Levey et al., 2003).

Table -1: Kidney Function based on 2002 National Kidney Foundation Kidney Disease Outcomes Quality Initiative staging of CKD

STAGE	DEFINITION
I	Albuminuria with GFR $\geq$ 90 ml/min/1.73m^2
II	Albuminuria with GFR 60 - 89 ml/min/1.73m^2
III	Albuminuria with GFR 30 -59 ml/min/1.73m^2
IV	Albuminuria with GFR 15 - 29 ml/min/1.73m^2
V	Albuminuria with GFR 0 - 15 ml/min/1.73 m^2 including dialysis (5D) and transplant (5T) recipients.

CKD is a condition which by its nature has a great impact on Health Related Quality of Life (HRQOL). From the initial stages of the disease to its end stage, symptoms, restrictions (especially dietary) and its treatment affect the daily life of these patients (Rubio et al., 2017).

In 1994 the World Health Organization Quality of Life Group (WHOQOL) was created which defined quality of life as, "an individual's perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (World Health Organisation, 1994).

HRQOL is one of the variable commonly studied in the field of medical outcomes research. It encompasses a wide range of human experience including functioning and subjective responses to illness. In broad terms, HRQOL may be conceived as the ratio of an individual's actual status over expected status (Litwin, 2010).

CKD 1 -3 are not usually considered to impact on the individual's health experience, although some disturbances may already have emerged. However, in CKD stage 4 the individual perceives an increasing amount of symptoms which may

affect the HRQOL. Fatigue, muscle weakness, restless legs, cramps, itching, nausea and loss of appetite are frequently reported symptoms. Conditions like malnutrition, anemia, cognitive dysfunction, sleep disorders, depression, reduced social interaction, physical and sexual functioning, and co-morbidities like diabetes and cardiovascular disease (CVD) also impair HRQOL in CKD patients. Impaired HRQOL is well described among patients on dialysis treatment (Valderrabano etal., 2001). Factors that affect the HRQOL in CKD patients are given in Figure 1.
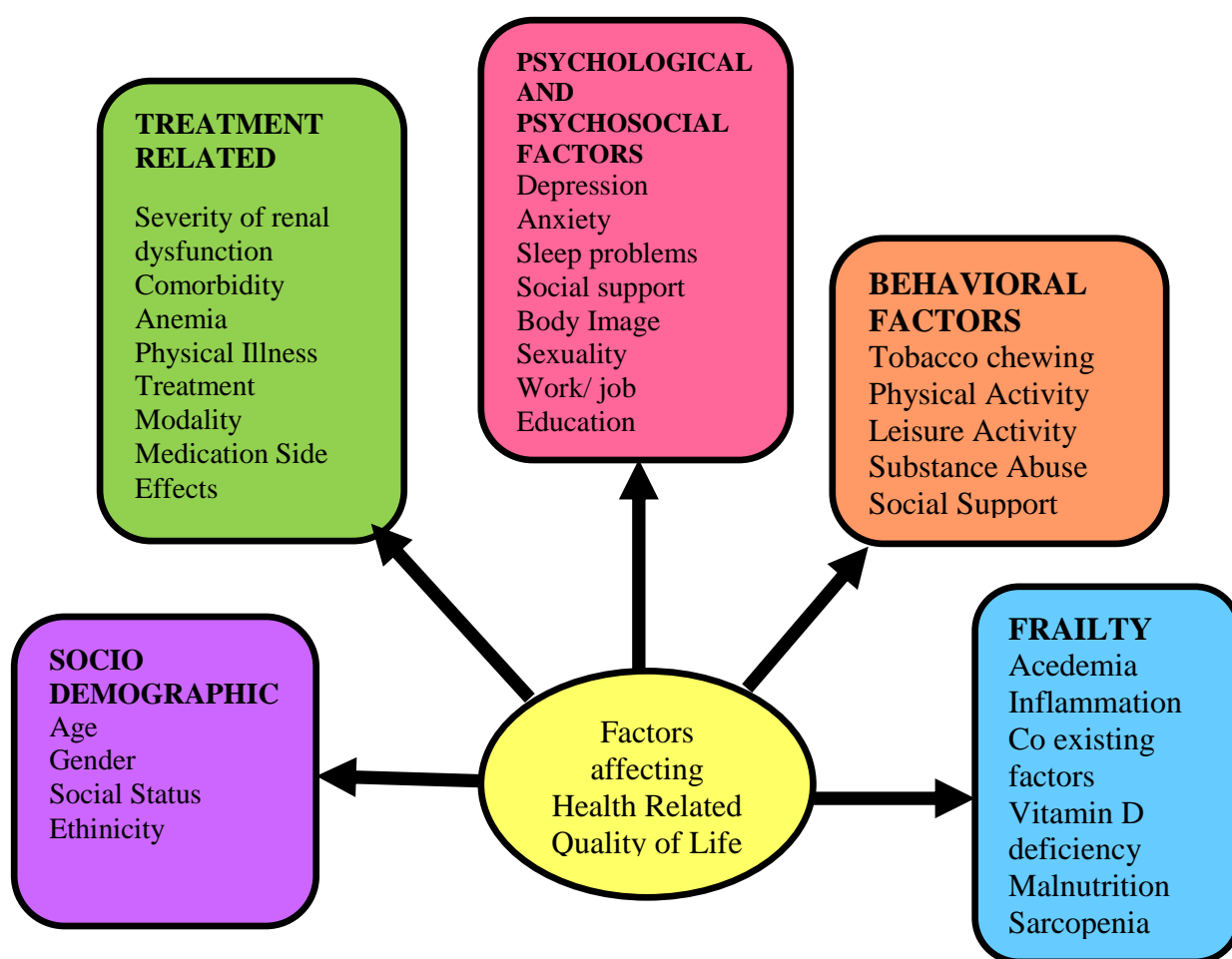
Fig.1: The factors that affect the HRQOL in CKD Patients

Chronic renal failure (CRF) is now recognized as a significant and rapidly growing global health burden, which affects health related quality of life not only for the patient but the family also. (Joshi et al., 2010; Kimmel & Patel, 2006).It is now

widely accepted that lower scores of QOL are associated with higher risk of death and hospitalisation in those on dialysis (Mapes et al., 2003).

A study conducted by Rahimi et al., (2016) assessed the quality of life among Iranian hemodialysis patients. The results revealed that the patients' quality of life score was 54.00+13.33. The results of regression analysis indicated that female gender, unemployment, and higher Charlson's comorbidity index are the predictors of hemodialysis patients' low quality of life. The study says that the relationship between the hemodialysis patients' low quality of life and controllable factors highlights the necessity of special plan to improve patients' quality of life by social support and medical interventions.Similar studies have been conducted by Van et al.,(2012) among Vietnamese patients on hemodialysis and by Veerappan , Arvind & Ilayabharthi (2012) among haemodialysis patients in India.

There are a number of tools available to measure HRQOL in chronic kidney disease patients such as Quality of Life Index-D (QLI-D), Kidney Disease Quality of Life Short Form (KDQOL-SF), Kidney Disease Questionnaire (KDQ), Renal Quality of Life Profile (RQLP), CHOICE Health Experience Questionnaire (CHEQ), Renal Dependant Individualised Quality of Life Questionnaire and many more. Kidney Disease Quality of Life Short Form – 36 (KDQOL-SF) is the most widely used tool to measure HRQOL among CKD patients. (Rahimi et al., 2016, Kuriokose et al., 2012, Khanh et al., 2012, Joshi, 2010)

Patient's perception of their well being and patient-reported outcomes (PROs) and the assessments of the impact of therapeutic intervention are becoming an integral part of evaluation of the human cost of chronic illnesses. Measures of HRQOL have not only become popular investigative tools, but have been used in an effort to define and alter models of health care delivery. (Mujais et al., 2009).

HRQOL is used almost exclusively in clinical studies, with the nephrology community increasingly realizing the potential importance of HRQOL assessment in the clinical care of its patients. HRQOL scores provide additional information on the individual's well being beyond the information gained from the patient's clinical and laboratory assessments. HRQOL of CKD patients is generally poorer than the general population due to the high burden of comorbidity and complications; hence the impact of CRF on a patient's quality of life (QOL) has become increasingly recognised as an important outcome measure (Kim et al., 2012; AL-Jumaih, 2011) and Nurses have an important role in assessing the HRQOL among patients with chronic kidney disease on maintenance dialysis.

SIGNIFICANCE OR NEED FOR THE STUDY

Global Burden of Chronic Kidney Disease:

The Global Burden of Disease (GBD) study 2015 (GBD 2015 Mortality and Causes of Death Collaborators, Lancet 2016) ranked chronic kidney disease 17th among the causes of deaths globally (age-standardized annual death rate of 19.2 deaths per 100,000 population). In many countries, chronic kidney disease is now among the top five causes of death. In India, GBD 2015 ranks chronic kidney disease as the eighth leading cause of death. In the Lancet Global Health, Dare and colleagues present data on the number of deaths due to renal failure in India. These figures come from the Million Deaths Study (MDS), which ascribed cause to all deaths in a nationally representative sample of 1.1 million households using an enhanced verbal autopsy tool between 2001 and 2013(Dare et al., 2016).Deaths due to renal failure constituted 2.9% of all deaths in 2010–13 among 15–69 year-olds, an increase of 50% from 2001–03. Diabetes was the largest contributor to renal failure deaths. Substantial regional differences were noted in renal failure death rates. The reported proportion of

renal failure deaths is close to the GBD 2015 estimate of 3.04%, up from 1.94% in 2000.

Few devastating statistics about CKD are 17% of Indians have some form of chronic kidney disease. This figure was given in a study conducted by Harvard Medical School in partnership with 13 medical centres all over India. One third of the above people have advanced stages of the disease. There are 60 million people with diabetes in India, more than any other nation on the planet. Sadly, the majority of them are either not diagnosed or poorly treated. At least 30% of diabetics will develop chronic kidney disease because of diabetes. People with the last stage of kidney failure (technically called Chronic Kidney Disease Stage 5 or CKD-5) require dialysis and/or kidney transplantation as a life sustaining treatment.40% of such patients would have developed kidney failure because of diabetes.2, 00,000 new patients need dialysis treatment every year in India. But the unfortunate reality is that only 10 to 20% of them get proper treatment. The remaining are either not diagnosed or unable to continue proper treatment. Statistics suggest that there should be almost 20, 00,000 people on dialysis in India as of today. The majority of chronic kidney failure patients are diagnosed in the last stage. Though proper statistics are not available, it is accepted that almost 50% first see a nephrologists (kidney specialist) only in the last stage. There are 0.4 dialysis centres per million populations in India. By contrast, Japan has 20 dialysis centres per million populations. (https://www.practo.com/health feed/some-devastating-statistics-about-chronic-kidneyfailure-in-india-1095/post, 2015).

QOL is an important outcome that is used as a valuable parameter of health and well-being(Joshi , 2014).Research findings have shown that lower scores on QOL were strongly associated with higher risk of death and hospitalization than clinical

parameters such as serum albumin levels in cases of CKD patients (Yang et al., 2005).This is despite the facts obtained from various studies that have shown the patient with CKD had lower QOL compared to the healthy individuals (Hseih, Lee, Huang & Chang,2007; Anees et al.,2011).Therefore, improving CKD patients' life span as well as QOL is of utmost importance (Shafi'Pour, Jafari & Shafi'Pour , 2009). In this way, many factors need to be considered. There is an ever expanding body of literature related to various factors that affect QOL, like genetic, environmental, psychosocial, stress, emotional, and co morbidities. Knowing the quality of life, as well as factors that influence it, may assist clinicians in developing and implementing interventions targeted at improving it (Joshi, 2014).

Chronic renal failure is an irreversible progressive condition responsible for high morbidity and mortality. Because it requires life-long treatment in the form of renal replacement therapy, the quality of life (QOL) of patients may be impaired significantly. The quality of life of CKD patients is a frequently overlooked yet a critical one when evaluating their overall medical care (Kimmel, Cohen & Weisbord , 2008) and improving health care in chronic diseases, symptoms, function in daily life and well-being are important patient outcome (Sullivan & McCarthy,2009).

Hemodialysis, which is one of the end-stage renal failure treatments, is a life-saving treatment for the patients [KDIGO (2013)]. However, important changes occur in lives of the patients who receive hemodialysis treatment despite the developments in this treatment model. Patients encounter many physical, spiritual and social problems (John & Thomas, 2013). Symptoms such as fatigue, cramp, pain, sleep disorder, dyspnea, piruritis, depression, nausea, vomiting and constipation negatively influence all the areas of daily living and the QOL of individuals (Hutuleac, 2012). Restrictions in social life and physical activity difficulties occur together with these

symptoms that are frequently experienced by the hemodialysis patients. It was found that especially fatigue influenced working, spending free time, nutritional habits, and sexual activities, enjoying life, family relations and friendships negatively (Bossola, Vulpio & Tazza ,2011) Some psycho-social difficulties like the deterioration of the working capacity, decrease in the physical activities, problems inside the family and sexual problems in dialysis patients complicate the maintenance of the treatment and influence the disease process and treatment negatively.

Quality of life for persons with ESRD is a growing concern among dialysis professionals for two reasons. First, ensuring the highest acceptable quality of life constitutes ethical care. Second, quality of life measures may assist health care providers to track illness progression, including identification of the end of life. Whereas in, The health-related quality of life (HRQOL) of dialysis patients is lower than that of the general population or patients who undergo kidney transplantation, and a low HRQOL is associated with decreased survival and more frequent hospitalization in dialysis patients (Olivares etal., 2012).Proper evaluation of and intervention for HRQOL are important for improving prognosis in dialysis patients (Leim et al., 2007).

The importance of measuring HRQOL has been underscored by recent studies indicating an association between various HRQOL measures and mortality and hospitalization rates in dialysis patients [Lopes et al .,(2007); Paniagua et al.,(2005); Mapes et al., (2003); Hedayati et al., (2008); Kimmel and Patel,(2006); Kalantar-Zadeh and Unruh, (2005)]. Patients undergoing maintenance dialysis have a high morbidity and mortality (USRDS, 2008). Several studies have also shown that dialysis patients have a poor health-related quality of life (HRQOL) and the HRQOL is an independent predictor for death in these patients (Kimmel and Patel, 2006). The

high burden of co-existing diseases, depression, and a high symptom burden explain, in part, the significant impairment in HR-QOL in dialysis patients (Weisbord et al., 2008).

Abdelghany, Elgohary and Nienaa (2016) conducted a cross sectional descriptive study on assessment of health related quality of life in patients receiving regular hemodialysis. HRQOL of hemodialysis patients was very poor in all domains. The mean total score was below 50 (out of 100 point) with mean Physical Health Composite (PHC) = 35.57 ± 7.34 and mean Mental Health Composite (MHC) = 36.76 ± 10.22.

Health-related quality of life (HRQOL) is a significant key indicator of how a condition affects the patient's life. HRQOL assessments can therefore identify possible problem areas related to health experiences (Peterson, 2009).Various instruments have been developed to allow standardized and reproducible assessment of the patient's health status perceptions beyond that usually possible by taking a conventional history (Unruh and Hess 2007). The Kidney Disease QOL (KDQOL) questionnaire comes highly validated with almost global application (Korevaar et al., 2006).

The importance of HRQOL has been increasingly recognized by health care payers, health care providers, regulatory agencies and researchers, both within and outside the renal community. HRQOL scores have been associated with mortality and hospitalizations in ESRD patients and have been used to assess the effectiveness of ESRD therapies (Paniagua et al., 2005; Mapes et al., 2003; Finkelstein et al., 2007). But, despite the apparent need and potential benefits of HRQOL assessments in CKD patients, few studies have examined the utility of these assessments, in part perhaps because of practical limitations to implementation into the clinical arena (Kalantar-

Zadeh and Unruh, 2005). This, Health related quality of life should be measured and monitored by the health care providers for better understanding of patients condition.

During literature review, the researcher came across only handful of studies that measured HRQOL among CKD patients in India [Khanna, (2009); Kuriokose et al., (2012); Joshi, (2014)]. But no such studies are undertaken in Southern Tamil Nadu. Nurses provide round a clock care for patients and are in the best position to assess HRQOL among patients and the findings would help the health care professionals to plan interventions to improve the QOL (Kuriokose et al., 2012).

The higher burden of CKD in this era of non- communicable disease, the poor HRQOL among patients with CKD reported in the previous studies, death of Indian studies especially in South India on the assessment of HRQOL among CKD patients and the interest of the researcher motivates the researcher to undertake the current study.

STATEMENT OF THE PROBLEM

A descriptive study to determine the health related quality of life among patients with chronic kidney disease on maintenance dialysis in a selected setting of Madurai district.

OBJECTIVES

- To assess the health related quality of life among patients with chronic kidney disease who are on maintenance dialysis.

- To identify the relationship between different domains of health related quality of life among patients with chronic kidney disease on maintenance dialysis.

- To find out the association between demographical, clinical, biochemical variables and health related quality of life among patients with chronic kidney disease on maintenance dialysis.

HYPOTHESES

All hypotheses will be checked at 0.05 level of significance

H₁: There will be significant relationship between the domains of health related quality of life among patients with chronic kidney disease who are on maintenance dialysis.

H₂: There will be significant association between health related quality of life in chronic kidney disease patients on maintenance dialysis with their selected demographical, clinical and biochemical variables.

OPERATIONAL DEFINITION

Health Related Quality of life, Patients with Chronic Renal Failure

1. Health Related Quality of Life

The term quality of life is refers to evaluate the general well being of individuals and societies.

It refers to the general wellbeing of patients with chronic kidney disease undergoing dialysis and the general wellbeing is very specifically elicited related to chronic kidney disease in terms of symptoms/problems, effects of kidney disease on daily life, burden of kidney disease, work status, cognitive function, quality of social interaction, sexual function, sleep, social support, dialysis staff encouragement, patients satisfaction and eight multi items measures of physical and mental health status in terms of physical functioning, role limitation caused by physical health problem, role limitation caused by emotional health problem, social functioning, emotional wellbeing, pain, energy/fatigue, general health perception and overall health as measured by KDQOL-SF 1.3 version.[Appendix -]

Here after, health related quality of life will be referred as 'HRQOL'

2. Patients With Chronic Kidney Disease

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 chronic kidney disease of any stage and undergoing dialysis in a selected setting of Madurai district.

ASSUMPTIONS

- Patients with chronic kidney disease who are on maintenance dialysis will be able to give the relevant information regarding HRQOL.

- Early assessment of HRQOL of patients with chronic kidney disease may help in planning the intervention to improve quality of life.

DELIMITATION

The data collected period was limited to 6 weeks.

PROJECTED OUTCOMES

This study will bring to light the HRQOL among chronic kidney disease patients who are undergoing dialysis and the findings would help the health care personnel to design interventions to improve HRQOL among chronic kidney disease patients.

CONCEPTUAL FRAMEWORK

Revised Wilson and Cleary Model of Health Related Quality of Life

The conceptual framework of the current study was adopted from A revised version of Wilson and Cleary's (1995) model for health-related quality of life (Ferrans et al., 2005).

In 1995, Wilson & Cleary developed a causal model of HRQoL. This was prompted by the need for a model that could be used in planning health care interventions to improve patients' HRQoL, indicating the relations between the determinants as well as identifying them. The Wilson & Cleary model was further revised by Ferrans et al in 2005.

According to this model, there are four main determinants of overall quality of life: biological function, symptoms, functional status, and general health perceptions. Characteristics of the individual and characteristics of the environment influence all of these determinants, as well as quality of life.

According to this model, Biological function includes the physiological processes that support life (Ferrans et al., 2005) and is the most fundamental determinant of health status (Wilson & Cleary, 1995). In this study, under the determinant of biological functions lab test like creatinine, haemoglobin level, hematocrit, blood urea nitrogen, and urine albumin, Medical diagnosis with staging, co-morbid conditions and current treatment of the patients are included. Biological function focuses on the performance of cells and organ systems and can often be measured through lab tests, physical assessment, and medical diagnosis.

Alterations in biological function can impact all the subsequent determinants of quality of life including symptoms, functional status, and general health

perceptions. The focus of medical intervention is often to improve outcomes in this domain.

The model from biological function to symptoms requires a shift from a cellular level to the organism as a whole (Ferrans et al., 2005). Symptoms include "a patient's perception of an abnormal physical, emotional, or cognitive state" (Wilson & Cleary, 1995, p. 61). While symptoms are often related to biological function, they are different. Sometimes biological changes do not produce symptoms, and sometimes symptoms are perceived in the absence of a biological cause. This feature makes symptoms totally unique to the individual and may differ from someone who is experiencing the same disease process. It is important to measure the influence of symptoms on overall quality of life.

In this study, physical, emotional, social, cognitive symptoms are elicited in terms of problem list, effect of kidney disease, and burden of kidney disease with the help of KDQOL – SF, version: 1.3.In line with the theoretical model adopted, it is assumed that the severity of symptoms vary from one patient with chronic kidney disease on maintenance dialysis with other.

The next level of the revised Wilson and Cleary model is functional status, which assesses the ability to perform certain tasks (Wilson & Cleary, 1995) and is often influenced by biological function and symptoms.

It is important to measure functional status as a separate variable because it may not be completely correlated with biological function or symptoms. Four domains of functioning that are often measured are physical, social, role, and psychological (Wilson & Cleary, 1995). Ferrans et al. (2005) use a more traditional approach in their revised model by focusing on the effects of disability on functional status and its impact on daily life.

In this study, under the functional status, role – physical, role – emotional and role –social are measured using KDQOL-SF version 1.3.

The next level is general health perceptions, a representation of all health concepts together, plus others that may not be depicted by the model (Wilson & Cleary, 1995). It is subjective in nature and allows for the individual to summarize all the preceding concepts, placing value on the importance of each variable, to generate a summation of individual health. It is a different concept than simply adding the preceding concepts (Ferrans et al., 2005) because it can include more than those concepts and is heavily subjective. General health perception is most commonly measured with a single global question, indicating an overall health rating on a Likert-type scale from poor to excellent.

Here in this study, the general health subjective perception of the patient with CKD on dialysis is determined using a single global question, indicating an overall health rating on a Likert scale from 0 to 100, using KDQOL - SF^{tm} version 1.3.

According to the model, characteristics of the individual are categorized as demographic, developmental, psychological, and biological factors that influence health outcomes (Ferrans et al., 2005). Common demographic characteristics that have been linked with health include sex, age, and ethnicity. They are usually not modifiable, but provide information regarding who to target for health interventions.

In this study, an individual refers to a patient with Chronic Kidney Disease on maintenance Dialysis. In this study the demographic characteristic of individual includes Age, sex, Education, Marital status, occupation, and income provide information regarding the patient undergoing dialysis.

Characteristics of the environment are either social or physical (Ferrans et al., 2005). Social characteristics include the influence of significant others, such as

marriage partners, as well as the social milieu, such as the specific culture of a hemodialysis clinic on health behaviour. Physical characteristics include the distinctive attributes of settings which may influence health outcomes, such as neighbourhood pollution or workplace exercise facilities.

Here in this study the environmental characteristics included are social support, work status, dialysis staff encouragement, and satisfaction with care.

All of these concepts ultimately impact overall quality of life which is a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/ her (Ferrans et al., 2005). Due to the subjective nature of many of the antecedents, overall quality of life is subjective and individualized. It may also be conceptualized as complex and multidimensional. The health and functioning domain has a significant influence on the perception of the quality of one's life. In fact, the concept "quality of life" is often referred to as "health-related quality of life" by health care providers and researchers. The model depicts a unidirectional flow of factors toward overall quality of life. However, these arrows only represent the typical causal pathway (Ferrans et al., 2005). It is conceivable and probable that any arrow could point in the opposite direction, representing the complexity of the interactions among the various factors impacting quality of life.

Fig:2 Conceptual Framework – Revised Wilson and Cleary Model of Health Related Quality of Life

Characteristic of the Individual

(Age, Sex, Education, Marital Status, Occupation, Income)

Biological Function

*Laboratory Test
(Hemoglobulin, Serum
Urea, Creatinine, Urine
Albumin)
*Medical Diagnosis with
staging
*Co- morbid Disease
Condition
*Current Treatment

**Symptoms (Physical,
Emotional, Social,
Cognitive)**

*Problem List

*Effect of Kidney
Disease

*Burden of Kidney
Disease

Functional Status

*Role – Physical

*Role – Emotional

*Role – Social

**General

Health

Perception**

**Health

Related

Quality of

Life**

Characteristic of the Environment
(Social Support, Work Status, Dialysis, Staff Encouragement, Satisfaction with Care)

CHAPTER II

REVIEW OF LITERATURE

Review of literature is traditionally understood as a systematic and critical view of most important scholarly literature on a particular topic. Researchers almost never conduct a study in a intellectual vacuum .Their studies are undertaken within the context of an existing base of knowledge. Researchers generally undertake a literature review to familiarize them about the topic under study. (Polit and Hungler, 2016)

In this study, the literature review is presented under the following sections.

1.   Review related to burden/ prevalence of Chronic Kideny Disease

2.   Review related to Health Related Quality Of life

3.   Review related to health related quality of life among clients with chronic kidney disease on maintenance Dialysis

1.   Review related to Burden/ Prevalence of CKD:

The pattern of disease burden in the 21st century has significantly shifted towards Chronic Diseases (CDs) (World Health Organisation [WHO], 2008). Population aging and lifestyle-modifiable risk factors, accompanied by a decline in early-life infectious diseases, have resulted in the emergence of CDs as a major global health threat (WHO, 2005.). Both morbidity and mortality of CDs are rising, escalated by the increasing prevalence of pandemic health problems such as Diabetes Mellitus (DM) and cardiovascular disease (CVD). The expected increase in the burden of CDs is likely to have profound socioeconomic and public health consequences, especially in developing countries (World Bank, 2005.).

CDs are often considered to be a health problem endemic to the developed world, but the etiological link between infectious diseases and CDs and the global rise

of DM, CVD, and nondiabetic chronic renal diseases have made CDs a primary health burden in developing countries (Murray & Lopez, 1996). Advances in medical innovation, focus on nutritional health, economic improvement, and urbanization have resulted in a major surge in life expectancy and improvement in quality of life. These advances are countered by increased exposure to risk factors associated with CDs, such as unhealthy diets and lack of physical activity (WHO, 2002).

Among CDs, chronic kidney disease (CKD) is of particular significance and contributes heavily to the global CVD and end-stage renal disease (ESRD) (Codreanu et al, 2006; Levey et al, 2007). CKD ultimately progresses to ESRD, the rate of which is dependent on coexisting pathologies and risk factors (Codreanu et al, 2006). The increase in CKD and its progression to end-stage renal failure worldwide are mainly a result of the rising global diabetes and HT pandemics (Yach et al,2004; Beaglehole & Yach ,2003).

A survey across 10 Asian countries showed that the most common cause of ESRD in 9 out of 10 countries was diabetic nephropathy. Diabetic nephropathy develops in 1 out of 3 diabetics worldwide, and is considered the leading cause of ESRD. The remaining 66% of patients, mostly in developing countries, die from CVD prior to reaching ESRD, which contributes heavily to the burden of CVD (>30% of the global CD burden) (Hossai et al,2009). However, estimated burdens of CKD in developing countries, most of which lack national renal disease registries, are often highly conservative representations of the overall national health burdens (Arogundade & Barsoum, 2005).
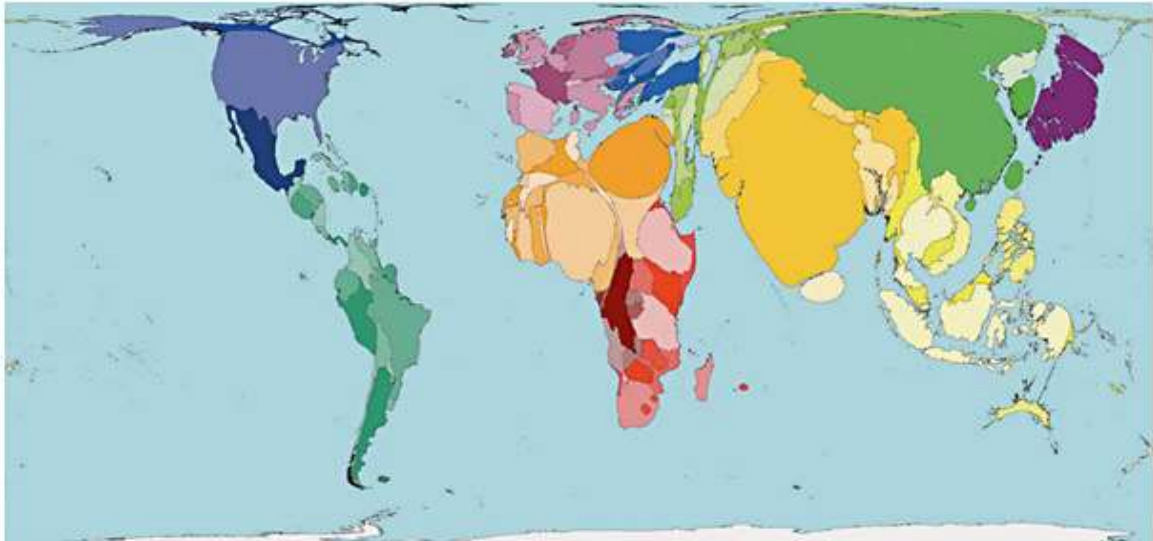
Fig.3: Burden of mortality from kidney disease illustrated by relative country size (source: www.worldmapper.com). Territories are sized in proportion to the absolute number of people who died from kidney disease in 1 year. Copyright: SASI Group (University of Sheffield) and Mark Newman (University of Michigan).

A study in Southern China showed CKD in 27.3% of patients with DM and HT, and 26.4% of patients with metabolic syndrome or CVD (Chen et al, 2009). A 2009 study conducted in the Congo showed that CKD was present in 44% of hypertensive patients and in 39% of diabetics. The same study also showed a 16% CKD prevalence among obese patients and 12% prevalence among HIV+ patients (Rogundade & Barsoum , 2008).

Chronic kidney disease (CKD) is becoming a major global health problem. It increases patient mortality and morbidity and puts a major economic strain on the health care system. It is estimated that 1, 00,000 new patients of end stage renal disease (ESRD) enter renal replacement programs annually in India (Kher, 2002). In the absence of any registry in our country these figures were based on estimates from rest of the world, tertiary care centre data and collective experience of nephrologists (Modi & Jha, 2006). In an initial survey conducted (Mani et al., 2003), in the rural

population of Chennai from South India, the evidence of CKD short of renal failure was 0.7%. In a population based study from Bhopal in Central India (Modi & Jha , 2006) have reported the average crude and age adjusted incidence rates of stage 5 CKD (ESRD) as 151 and 232 per million population. In a community based study (Agarwal et al., 2005) from Delhi in Northern India the prevalence of earlier stages of CKD was reported to be 7852 per million populations. There are no published studies from India on the prevalence of covert renal disease (stage 1 and 2). Data from United States suggests that for every patient with ESRD there are more than 200 patients with overt CKD in stage 3 and 4 and almost 5000 patients with covert renal disease (stage 1 and 2)(Udayakumar ,2006). The National Health and Nutrition Examination Survey (NHANES III) in a population based survey in USA estimated that 11% of the adult population may have some stage of CKD (Coresh & Ashor, 2003). If these figures are applied to our country of one billion plus people, the sheer enormity of numbers would overwhelm our health care system.

In India there is a rising burden of chronic diseases like hypertension and diabetes. The increase in number of CKD patients can be partially attributed to the epidemic of chronic diseases and the aging population. India has the largest number of diabetics in the world with a prevalence of 3.8% in rural and 11.8% in urban adults. The prevalence of hypertension has been reported to range between 20-40% in urban adults and 12-17% among rural adults .It is estimated that 25-40% of these patients are likely to develop CKD, with a significant percentage requiring renal replacement therapy. The health care system in our country is not designed to provide the required level of care for CKD at the primary or secondary level (Reddy, Shah, Varghese, & Ramadoss, 2005).

Anupama & Uma (2015) conducted a cross sectional survey to determine the prevalence and risk factor profile of CKD among 2019 adults aged 18 years and above in a rural population near Shimoga, Karnataka and to study the risk factor profile. Glomerular filtration rate was estimated (eGFR) using the 4-variable modification of diet in renal disease (MDRD) equation and Cockcroft-Gault equation corrected to the body surface area (CG-BSA). The result shows that mean age was 39.88 ± 15.87 years. 45.57% were males. The prevalence of proteinuria was 2.8%. CKD was seen in 131 (6.3%) subjects when GFR was estimated by MDRD equation. The prevalence of CKD was 16.54% by the CG-BSA method. There was a statistically significant relationship of CKD with gender, advancing age, abdominal obesity, smoking, presence of diabetes and hypertension. The prevalence of CKD is higher compared and is comparable to that in the studies from the urban Indian populations.

Rai et al. ,(2014) conducted a screening of general population for CKD on the World Kidney Day, among 547 Indians aged more than or equal to 18 years of age in Varanasi. The result revealed that CKD was found in 191 (34.91%) subjects. Significant relationship was found between CKD and age, diabetes mellitus, urine protein, serum creatinine. No significant relationship was found between serum creatinine level and urine protein ($P = .001$).

Gallieni et al., (2013) conducted a cross sectional survey to investigate hypertension and chronic kidney disease among 2536 people aged above 18 years from West Bengal. The results showed that stage 1& 2 hypertension were present in 39.4%. Proteinuria was present in 7.7% of the participants and Stage 3 CKD was found in 4.2%

Rajapurkar et al., (2012) conducted a cross sectional study to various aspects of CKD in 52273 people aged above 18 years from 4 regions of India –East, North, South and West. The result showed that commonest cause of CKD was Diabetes Mellitus (31%). Other causes were undetermined etiology (16%), chronic glomerulonephritis (14%) and hypertension (13%). About 48% of participants presented in End Stage Renal Disease (ESRD); Patient with Diabetic nephropathy was older, and presented in earlier stages of CKD. Low income group patients presented with advanced CKD. Patients attending the Government hospitals were low income group, young, and the cause of CKD was unknown etiology.

Singh et al., (2013) from Screening and Early Evaluation of Kidney Disease, a cross-sectional study to determine epidemiology and risk factors of CKD in India screened 6120 Indian subjects from 13 academic and private medical centres all over India. The results showed that the total cohort included in this analysis is 5588 subjects. The mean $\pm$ SD age of all participants was 45.22 ± 15.2 years (range 18–98 years) and 55.1% of them were males and 44.9% were females. The overall prevalence of CKD in the SEEK-India cohort was 17.2% with a mean eGFR of 84.27 ± 76.46 versus 116.94 ± 44.65 ml/min/1.73 m2 in non-CKD group while 79.5% in the CKD group had proteinuria. Prevalence of CKD stages 1, 2, 3, 4 and 5 was 7%, 4.3%, 4.3%, 0.8% and 0.8%, respectively. The researchers concluded that the prevalence of CKD was observed to be 17.2% with ~6% have CKD stage 3 or worse.

2. Review related to Health Related Quality of Life

Life expectancy and causes of death have traditionally been used as key indicators of population health. While these indicators provide critical information about the health status of population, they do not offer any information about the quality of the physical, mental, and social domains of life. Increasing life expectancy

has also highlighted the need for other measures of health; especially those that capture the quality of the years lived. In 1995, the WHO recognized the importance of evaluating and improving people's quality of life (The World Health Organization Quality of Life assessment [WHOQOL], 2005).

WHO defines Quality of Life (QOL) as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concern (http://www.who.int/ healthinfo/survey/whoqol-qualityoflife/en/).

When quality of life is considered in the context of health and disease, it is commonly referred to as Health-Related Quality Of Life (HRQOL) to differentiate it from other aspects of Quality Of Life. Since health is a multidimensional concept, HRQoL is also multidimensional and incorporates domains related to physical, mental and emotional, and social functioning (Ferrans, 2005).

In health care, Health Related Quality of Life (HRQOL) is an assessment of how the individual's well-being may be affected over time by a disease, disability or disorder (Bottomley & Andrew, 2002). The concept of HRQOL takes into account patient well-being as expressed by both the physical and psychologic (or mental) domains of health. HRQOL may be affected by several factors, including the clinical manifestations of diseases, the side effects of treatments, and the quality of the relationships of the patient with family members and health care providers (Valderrabano, Jofre, & Lopez-Gomez,). In addition to providing information about individual well-being at a given moment, the assessment of HRQOL may help identify an individual's risk for certain outcomes. Impaired quality of life may be a cause or a marker of developing cardiovascular disorders and other important outcomes, such as death and hospitalization (Stull, Clough and Van Dussen, 2001).

HRQOL are often multidimensional and cover physical, social, emotional, cognitive, work- or role-related, and possibly spiritual aspects as well as a wide variety of disease related symptoms, therapy induced side effects, and even the financial impact of medical conditions. Although often used interchangeably with the measurement of health status, both health-related quality of life and health status measure different concepts. Hence, the HRQOL includes physical, social, psychological, and therapy-related components, as summarized in Figure 3.
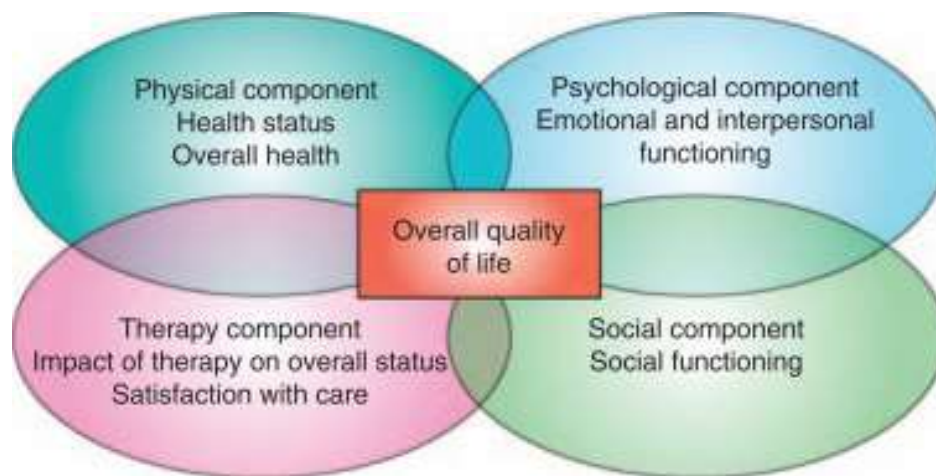
Fig.4:-Factors affecting overall Health Related Quality of Life

Various tools are available to measure HRQOL like the MOS 36 item Short Form Health Survey (SF-36) , the Dartmouth COOP functional health assessment Charts/WONCA (COOP/WONCA Charts) and so on. Similar to other psychometric assessment tools, health-related quality of life questionnaires should meet certain quality criteria, most importantly with regard to their reliability and validity. As such, hundreds of validated health-related quality of life questionnaires have been developed to suit the needs of various illnesses. The questionnaires can be generalized into two categories:

1. Generic instruments- Generic instruments which have the advantages of being applicable to all persons irrespective of their type or disease. [e.g. SF-36, Health Utilities Index HUI), Nottingham Health Profile (NHP)].

2. Disease, disorder or condition specific instruments are available to measure HRQOL like Quality of Life Index-D (QLI-D), Kidney Disease Quality of Life Short Form (KDQOL-SF), Kidney Disease Questionnaire (KDQ), Renal Quality of Life Profile (RQLP), CHOICE Health Experience Questionnaire (CHEQ), Renal Dependant Individualised Quality of Life Questionnaire and so on (Rahimi, 2016; Kuriokose, , 2012; Khanh et al., 2012; Joshi, 2010) .

In CKD patients who are on maintenance dialysis faces serious stressors related to the illness and its treatment. They are often confronted with limitations in food and fluid intake, physical symptoms such as itching and lack of energy, and psychological stressors such as loss of self-concept and self-esteem, feelings of uncertainty about the future, feelings of guilt toward family members, and problems in the social domain. It is worth noting that ESRD is a disease with serious effects on patients' quality of life (QOL), negatively affecting their social, financial, and psychological wellbeing. (Celik et al., 2012).

In United States it is now mandated by the Center for Medicare Services that dialysis facilities perform routine measurements of HRQOL preferentially using the Kidney Disease Quality of Life-36 (KDQOL-36) questionnaire; additional instruments may be used. These measurements are to be done at regular intervals, defined as within 4 months of the initiation of treatment, and then at least annually or more often if indicated by a significant life changing event. (http://www.cms.hhs.gov/cpmproject).

Hence, the initial assessment helps the health care to focuses clearly on strategies to improve the compromised HRQOL of the patient with chronic kidney disease. To address this properly requires that careful assessments be done in a variety of domains and that the interventions use the resources of the entire patient care team (physicians, nurses, social workers, dieticians, psychologists, technicians, physical rehabilitation therapists, family, community resources, religious organizations, and so on). It will be important to document that interventions can positively impact on the HRQOL (Hutuleac, 2012).

Strategies to improve health-related quality of life of the chronic kidney disease patient

- Assessment of patient symptom burden using patient reported measures: formulation of treatment options

- Optimization of medical therapy

- Review social support systems

- Management of anemia: maintenance of hemoglobin levels in 11–12 range

- Treatment of depression: medication, counseling, and/or other strategies

- Modifications in dialysis treatment regimen: more frequent hemodialysis

- Physical functioning: utilization of exercise programs

- Assessment and treatment of sleep disturbances

- Assessment and treatment of pain

- Assessment and treatment of stress and anxiety

- Assessment and treatment of sexual dysfunction

- Assessment of cognitive dysfunction with appropriate support

- Caregiver assessment and support

3. **Review related to health related quality of life among clients with chronic kidney disease on maintenance Dialysis**

Mollaoglu & Deveci (2017) conducted a cross sectional study to determine the quality of life (QOL) and factors affecting the QOL in 104 dialysis patients receiving treatment at a university hospital in Turkey. Data were collected with the Patient Information Form (PIF) and Kidney Disease Quality of Life Form (KDQOL -36). Collected data were evaluated on SPSS. The results showed that the most affected QOL dimensions in the sampling were disease burden based on Kidney disease, SF-12 physical health component and Mental health component SF – 12, respectively. The QOL was found to be lower in higher ages, women with low education level, people living with family and patients undergoing dialysis for a long time ($p < 0.05$), and mental health was low in single people. Moreover, mental health component scores were especially low in people who didn't adherent to their diet. The effect on quality of life was not found statistically important in terms of having a comorbid disease and taking erythropoietin ($p > 0.05$).The researcher concluded that CRF led to an advanced increase in the disease burden of the patients and influenced the areas of physical and mental health negatively. In order to enhance the QOL in patients with CRF, it is necessary to improve the affected areas with a multidisciplinary approach and to handle the factors which influence the QOL with the understanding of effective and holistic health services in line with the individualized need for patient care.

Manavalan, Majumdar, Harichandra, & Priyamvada (2017) in their study to determine HRQOL and its determinants in patient with chronic kidney disease stage 3 to 5 on dialysis using a kidney disease specific tool (Kidney Disease Quality of Life-SF™) in an underprivileged, predominantly rural population with high rates of illiteracy and unemployment. The scores of individual domains were summarized to

three composite scores – physical composite summary (PCS), mental composite summary (MCS), and kidney disease component summary score (KDCS). A total number of 204 participants were recruited from nephrology outpatient clinics. About 68.1% of participants were males. The mean age of the study population was 49.14 ± 13.63 years. There was a high proportion of illiteracy (36.3%) and unemployment (80.9%). KDCS showed a significant decline ($P = 0.01$) from CKD 3 to CKD 5D whereas MCS and PCS showed a nonsignificant decrease. There was no difference in KDCS, PCS, or MCS scores between patients treated by hemodialysis and CAPD. Illiteracy and unemployment were associated with significantly lower KDCS, PCS, and MCS scores. Age ≥50 years were associated with poor PCS (29.49 ± 8.20 vs. 34.17 ± 9.99; $P < 0.001$). Hemoglobin <10 g/dL was associated with poor KDCS (58.93 ± 13.09 vs. 65.55 ± 13.38; $P < 0.001$) and PCS (29.56 ± 8.13 vs. 33.37 ± 9.82; $P < 0.001$). The presence of comorbidities such as diabetes and hypertension had no impact on the composite scores. KDCS, MCS, or PCS scores did not vary among patients having high serum phosphorus (≥4.5 mg/dL), low albumin (<3.5 g/dL), and elevated parathyroid hormone (≥150 pg/ml). On multiple linear regression analysis, the predictors of KDCS were unemployment ($P < 0.001$) and illiteracy ($P = 0.03$). Unemployment ($P < 0.001$) and age ($P < 0.001$) were predictors of PCS whereas literacy level ($P < 0.001$) was predictive of MCS.

Cruz et al., (2017) in a study says that the patients undergoing hemodialysis are frequently troubled by psychiatric disorders and coping problems, which can pose a serious threat to their physical and mental well- being. This study was performed to explore the influence of religiosity and spiritual coping (SC) on the Health Related Quality Of Life (HRQOL) of Saudi patients receiving Hemodialysis. A total of 168 Hemodialysis patients from three hospitals in Saudi Arabia found a convenient

sample for this descriptive, cross sectional hospital – based study. Data collection was done via questionnaire – guided interviews using the Muslim Religious Index as well as the Arabic Versions of Spiritual Coping Strategies Scale and Quality Of Life Index Dialysis. Regression analysis enabled identification of the factors influencing HRQOL. The study revealed that older patients were found to reveal higher levels of religiosity, whereas the younger ones expressed a lesser degree of religious and nonreligious coping. Unemployed patients reported greater involvement in religious practices and more frequently used religious coping than those employed. The latter showed lower intrinsic religiosity and non religious coping usage than the unemployed. The respondents reported the greatest satisfaction scores on their psychological / spiritual dimension and the least scores on the social and economic dimension. Therefore, the factors that could influence the HRQOL of the respondents were identified as involvement in religious practices, intrinsic religious beliefs, religious coping usage and age. This study revealed significant findings regarding the importance of religiosity and spiritual coping on the HRQOL of the Saudi Hemodialysis patients. Therefore, it has been highly recommended to integrate religiosity into the health – care process for such patients to facilitate the achievement of overall optimum health levels.

Masina et al., (2016) conducted a study to measure HRQOL of adult patients in Malawi treated with haemodialysis for end stage kidney disease. The researchers performed a cross-sectional study of patients receiving haemodialysis for end stage kidney disease at 4 dialysis centres in Malawi between 24/10/2012 and 30/11/2012. Patients were included if they were >18 years of age and had been receiving haemodialysis for >3 months.Using the Kidney Disease Quality of Life Instrument Short Form to assess health related quality of life. The researchers recruited 22 of 24

eligible patients (mean age 44.8 ± 16.0 years, 59.1 % male, median duration on haemodialysis 12 months (Inter-quartile range 6–24 months)). Overall health related quality of life was low (mean score 59.9 ± 8.8, maximum possible score 100) with the lowest scores recorded for physical health component summary score (50.4 ± 22.8) compared to mental health component summary (61.3 ± 23.0) and kidney disease component summary (67.9 ± 13.2). Low household income (<\$4000 per year) was associated with lower mental health component scores (adjusted $r^2 = 0.413$, $p = 0.033$). The researcher concluded that Quality of life of haemodialysis patients in Malawi can be easily measured using a validated questionnaire and provides an alternative and important measure of the efficacy of haemodialysis therapy. Physical health scores were particularly low and this may affect income generating capacity. Increased efforts are required to improve the quality of life of haemodialysis patients in Malawi with a particular focus on the burden of physical symptoms.

Aggarwal, Jain, Pawar &Yadav ,(2016) conducted a study to determine HRQOL in patients in different stages of CKD and to explore possible correlating and influencing factors. Cross sectional design with 200 patients from India in CKD stages 1-5 assessed for HRQOL through 36-item short-form together with biomarkers. Patients were divided into four groups according to their estimated Glomerular Filtration Rate (eGFR); group A with GFR range > 90 ml/min/1.73 m ^{2}, group B with GFR range 30-59 ml/min/1.73 m ^{2}, group C with GFR range 15-29 ml/min/1.73 m ^{2} and group D with GFR < 15 ml/min/1.73 m ^{2} . HRQoL scores in all dimensions impaired progressively and significantly across renal function levels and CKD stages. A statistically significant decreasing trend in physical composite summary and mental composite summary scores was found in patients from group A to D (P< 0.001).

Patients with eGFR $<$ 30 ml/min/1.73 m ^{2}, Diabetes Mellitus, Cardio vascular disease (CVD), C-reactive protein (CRP) $\geq$ 5 mg/l, Hemoglobin $\leq$ 90 g/l, erythrocyte sedimentation rate $\geq$ 20 and mean arterial pressure $\geq$ 100 mm Hg had significantly lower scores on all HRQOL dimensions. Among these CRP, reduced GFR and CVD were the most important predictors of impaired HRQOL. The researcher concluded that considering the worldwide growing prevalence of CKD and increasing importance of HRQOL in chronic diseases, improving our knowledge about HRQOL and its predictors in CKD patients is important. Assessment of HRQOL early in disease course will help to identify high risk patients in whom modifying these factors may help them lead an active and healthy life.

Rubio et al., (2015) conducted a literature review to offer a contrasted vision of the HRQL assessment tools that are most often used on Spanish ACKD population, also analysing how this population perceive their quality of life. A review was carried out on literature published on studies undertaken in Spain that had used some kind of instrument, either generic or specific, in order to measure HRQL in patients with different stages of ACKD. Studies in kidney transplant patients were excluded when they were independently reviewed. The research was carried out in CINAHL, CUIDEN, DOCUMED, EMBASE, ERIC (USDE), IME, LILACS, MEDLINE, Nursin@ovid, PubMed, Scielo, Web of Science and TESEO.53 articles published between 1995 and May 2014 have been included in this review. Renal replacement therapy is the variable that is most often associated with the study of HRQL, with haemodialysis being the most studied. Most of the studies found are cross-sectional and the Short Form-36 Health Survey is the most used instrument. The majority of the studies show how HRQL is significantly affected in patients who receive renal replacement therapy. These results are independent from the instrument used to

measure health-related quality of life and other associated variables throughout the various studies. HRQL has been particularly analysed in patients on haemodialysis, using mainly observational methods and the Short Form-36 Health Survey. There is a need for more studies that address aspects such as HRQL in the pre-dialysis phase, as well as studies with larger samples and longitudinal, analytical and experimental designs.

Murali, Sathyanarayana and Muthusethupathy (2014) in their study measured the quality of life (QOL) among the chronic kidney disease patients undergoing hemodialysis and peritoneal dialysis. The study is observational and prospective, multicentered in an ambulatory setup located in Chennai, South India conducted during November and December 2013. A total of 50 patients were observed by using kidney disease QOL short form (KDQOL – SF) questionnaire. Among that 56% and 44% subjects were on hemodialysis and peritoneal dialysis, respectively. 58% were of male subjects and 76% of them were married. About 78% of subjects had diabetes mellitus as single comorbid, the study assessed all the four domains of KDQOL. Physical Health (PH) was significantly affected among all the four domains of the KDQOL and an average score was found to be 25.45 ± 11.85 (p<0.0015). An average score of 34.50 ± 13.95 was observed for MH and was found to be better than the PH and it was statistically significant (p=0.018). Issues related to kidney disease were having an average score of 40.75 ± 17.65 (p=0.0024), which is comparatively affected domain. The average value of $71.93 \pm 12.35\%$ (p<0.029) subjects were having satisfaction with dialysis care, which is lower than the recommended value of <65%. And the present study revealed that ESRD patients have a poor QOL and most the affected domains is PH, hence measuring and monitoring these aspects of QOL could

lead to a more patient centered care and improve the health and wellbeing among patients with chronic renal failure.

Van, Duangpaeng, Deenan & Bonner (2012) sought to examine the association between monthly income, comorbidity, length of time on dialysis, social support and Health Related Quality Of Life (HRQOL) among Vietnamese ESKD patients, using a descriptive design. Ninety Five patients, who were receiving hemodialysis (HD) and peritoneal dialysis (PD) from a hospital in Hanoi, were conveniently smpled. The research revealed that End Stage Kidney Disease (ESKD) patients reported having a moderate level of HRQOL. Factors associated with QOL were social support (r= 0.268, p <0.05), comorbid health conditions (r=-0.185, p <0.05), and length of time on dialysis (r = -0.182, p< 0.05).However, monthly sincome was not significantly related to HRQOL (p>0.05). The result seemed to indicate that End Stage Kidney Disease (ESKD) patients in Vietnam have a high level of support from family members, friends and significant others. There was also a negative impact of comorbid conditions on the QOL of these patients.

Kuriokose et al., (2012) conducted a study to determine the reliability and validity of KDQOL – SF in CRF patients on hemodialysis (CRF-D) and not on dialysis (CRF – ND) in Bangalore, India. Data was gathered from 101 participants from the nephrology department of age > 18 years having CRF. The patients who had undergone renal transplant were excluded in this study. KDQOL-SF, 1.3 composed of 43 kidney – specific items and 36 general health items was used, excluding three questions relating to dialysis staff encouragement and patient satisfaction, sexual function as they were not relevant to our study population comprising of CRF patients on dialysis and not on dialysis. Percentage of floor, percentage of ceiling and internal consistency reliability (Cronbach's alpha coefficient) were calculated. Complete

information was collected from 101 participants with 40 CRF patients undergoing dialysis and 61 CRF patients not on dialysis with the mean age of 50.88 ± 14.22 years (CRF- D) and 53.6 ± 13.03 years (CRF – ND). Comparison of KDQOL-SFTM mean score values between CRF patients on dialysis and not on dialysis group revealed that quality of social interaction, role emotional, emotional well- being had a significant difference ($p < 0.05$), but the overall health score was almost same. All sub- scales had a Cronbach's alpha above the recommended minimum value of 0.7 to indicate good reliability (range 0.7) except quality of social interaction (CRF-D and CRF-ND) and sleep, role physical and emotional well being in CRF-D group. Comparison of mean score values revealed that participants <40 years had a better QOL that these who were >40 years. The results supported that the KDQOL-SF is an validity and reliability of KDQOL as a measure of QOL in dialysis and not on dialysis patients in a tertiary care hospital in Bangalore, South Indian Population. Hence, measuring and monitoring these aspects of quality of life could lead to a more patient centered care and improve the health and wellbeing among patients with CRF.

In a study conducted by Cruz et al., (2011) to assess the quality of life in patients with chronic kidney disease on conservative treatment and the relationship between the quality of life and glomerular filtration rate. A total of 202 patients were randomly selected, of that 155 patients in stages 1-5 of chronic kidney disease and 36 on hemodialysis were studied. Quality of Life was rated by the Medical Outcomes Study Short Form 36 – Item (SF – 36) and functional status by the Karnofsky Performance Scale. Clinical, laboratory and sociodemographic variables were investigated. The study revealed that QOL decreased in all stages of Kidney Disease. A reduction in physical functioning, physical role functioning and in the physical component summary was observed progressively in the different stages of Kidney

disease. Individuals with higher educational level who were professionally active displayed higher physical component summary values (47.7±9.7,p<0.05), whereas men and those with a higher income presented better mental component summary values. Older patients performed worse on the physical component summary and better on the mental component summary (40.3±12.7). Hemoglobin levels correlated with higher physical component summary values and the Karnofsky Scale. Three or more comorbidities had an impact on the physical dimension. The researcher concluded that the Quality Of Life is decreased in renal patients in early stages of disease. No association was detected between the stages of the disease and the quality of life.

According to Tel & Tel (2011) conducted a study to determine the quality of life and social support of hemodialysis patients among 164 patients receiving hemodialysis. Data were collected with a personal information form, the Medical Outcomes Study 36 – items Short Form and the Multidimensional Scale of Perceived Social Support Questionnaire. It was found that the quality of life of hemodialysis patients is low. Women and married patients had high Physical Composite Summary (PCD) and retired patients had high friends support. The study concluded that hemodialysis patients have a low QOL and there is a close relationship between quality of life and social support. Enabling hemodialysis patients to identify and make effective use of the sources of social support will help them to increase their quality of life.

Gayle et al., (2009), conducted a multicentre comparative study to assess the quality of life in end stage renal disease in 200 patients with End Stage Renal Disease (ESRD. Seventy patients were from a tertiary hospital based outpatient dialysis centre, the University Hospital of the West Indies (UHWI), and 40 patients from a

private centre, Diabetes Association Renal Unit (DARU) both in Kingston, Jamaica. Ninety patients were consecutively recruited from a tertiary hospital based outpatient dialysis centre in Panama City, Panama. The Kidney Disease Quality of Life - Short Form Questionnaire was administered. Each QOL domain was scored from 0 - 100 with higher scores representing better rating. The results showed that the Mean age was 50 +/- 4 years, with no difference between the cohorts. Panama, however, had significantly higher parameters than the Jamaican cohorts: mean haemoglobin (Hb) 12.4g/dL (p = 0.004), mean serum albumin 45g/dL (p = 0.03) and Urea Reduction Ratio (URR) 78% (p = 0.004). Diabetes Association Renal Unit recorded mean Hb 11.4 +/- 1.3g/dL, mean serum albumin 42.1 +/- 2.3g/dL and URR 72%. The University Hospital of the West Indies (UHWI) documented mean Hb 11.2 +/- 2.4g/dL, mean serum albumin 41 +/- 4.5g/dL and URR 68%. All three cohorts had good overall QOL scores when compared with the reference population. Patients from Panama had higher overall QOL scores than Jamaican patients (p = 0.02). By centre, UHWI had higher overall QOL scores than DARU (p = 0.04). Burden of Kidney Disease domain recorded the lowest overall scores [Reference Population 49, DARU 19.0 (p = 0.001), UHWI 24.0 (p = 0.002), Panama 32.9 (p = 0.03]. Patient Satisfaction scores were also significantly reduced across all cohorts [Reference population 72, DARU 52, UHWI 54, Panama 58]. The University Hospital of the West Indies had significantly decreased dialysis staff encouragement (p = 0.003). The Diabetes Association Renal Unit noted significant reductions in general health (p = 0.04), physical functioning (p = 0.001), physical role (p = 0.001) and emotional role (p = 0.005) domains. Panama had the lowest overall physical functioning (p = 0.01), pain (p = 0.01) and social support (p = 0.04) scores. The researcher concluded that the over

QOL is good in patients with ESRD. Domains of highest concern include Burden of Kidney Disease and Patient Satisfaction.

Veerappan, Arvind and Ilayabharthi (2008) stated in Predictors of quality of life of hemodialysis patients in India .A cross-sectional study included 78 patients on HD for ≥ two months. Demographic, nutritional, functional subjective global assessment and Kidney Disease Quality of Life (KDQOL-36) assessments were done. Predictors of QoL were assessed by regression analysis. The mean calorie and protein intake were 1245 ± 116.9 kcal and 0.86 ± 0.19 g/kg/day respectively. Male gender (OR = 9.68), serum parathyroid hormone PTH <150 pg/ml (OR = 0.03), age ≤65 years (OR = 1.25), no catheter use (OR = 1.9) and hospitalizations (OR = 0.11), were independent predictors of total score ≥50. Independent predictors of physical component summary (PCS) >25 were male gender (OR = 5.06) and urine output at start of dialysis (OR = 1.05). Independent predictors of mental component summary (MCS) ≥25 were male gender (OR = 11.02), serum PTH > 150 pg/ml (OR = 0.15), daily protein intake of >0.8 g/kg and caloric intake >20 K.cal/kg (OR = 10.8). Patients with urine output >1 liter per day had more hypotensive episodes during dialysis (r = 0.56, P = 0.045), more headaches (r = 0.63, P = 0.006) but that did not affect the PCS significantly. Low PTH (<150 pg/ml) (OR = 1.29), multiple access failures (OR = 3.36) and total score ≤50 (OR = 0.09) were independently associated with increased hospitalization. Males, patients with serum PTH >150 pg/ml and those not on catheter had better total score. Though patients with higher urine output had better PCS, those with output >1 litre had higher incidence of hypotension and dialysis-related headache. Protein-energy malnutrition affected the MCS significantly. Dialysis noncompliance seen in one-fourth of the population did not affect the scores significantly.

CHAPTER III

METHODOLOGY

The research methodology indicates the general pattern of organizing the procedure of gathering valid and reliable data for the investigation. This chapter provides a brief description of the method adopted by the investigator in the study.

This chapter includes the research approach, research design, the setting, sample, and sampling technique, development of the tool, procedure for data collection and plan for data collection.

RESEARCH APPROACH

Quantitative approach was used for this study.

According to Polit and Beck (2016), "Quantitative approach is the investigation of phenomena that lend themselves to precise measurement and quantification, often involving a rigorous and controlled design".

RESEARCH DESIGN

Descriptive correlation design was adopted for the study.

A descriptive correlation design, a type of non- experimental research is to describe relationships among variables rather than to support inferences of causality (Polit and Beck 2016).

RESEARCH VARIABLES

Variable is an attribute that varies, that is, it takes on different values. Health Related Quality of Life is the variable measured in this study.

SETTING OF THE STUDY

The study was conducted at Lee Kidney Care and Multi Speciality Hospital, Madurai, which is a private hospital. It is about 8 km away from Sacred Heart Nursing College. It is a 40 bedded hospital of which 16 beds are available for dialysis.

The working hours of this hospital was between 7.30am to 8pm and it functions for 6 days a week. The dialysis unit functions as follows: 1st session is from 7.30am to 12.30pm, 2nd session is from 1pm to 4.30 pm and 3rd session is from 5pm to 8 pm. For each day a minimum of 24 patients undergoing dialysis. Each patient undergoes dialysis twice a week. Only emergency cases are taken on Sundays.

STUDY POPULATION

In this study, the target population were the clients with chronic kidney disease who were on maintenance dialysis in Lee Kidney Care and Multi Speciality Hospital of Madurai.

SAMPLE

Samples of the study were the patients with chronic kidney disease on maintenance dialysis in Lee Kidney Care and Multi Speciality Hospital hospitals of Madurai, who fulfilled the inclusion criteria.

SAMPLE SIZE

Total sample comprised of 75 clients with chronic kidney disease on maintenance dialysis.

SAMPLING TECHNIQUE

As per Polit and Beck (2016), "Convenient sampling technique is the selection of the most readily available persons as participants in a study; sometimes it may also called as accidental sampling" Thus in this research, convenient sampling technique was used to select the samples.

CRITERIA FOR SAMPLE SELECTION

The samples were selected based on the following criteria:

INCLUSION CRITERIA

* Patients with chronic kidney disease who were on maintenance dialysis in a selected hospital at Madurai.

* Patients who were more than 18 years of age.

* Patients of both genders

* Patients who were able to speak/ understand Tamil or English.

EXCLUSION CRITERIA

* Patients not willing to participate

* Patients who were critically ill

* Patients who were unconscious

RESEARCH TOOLS &TECHNIQUES

Research tool had 2 sections.

SECTION A

Section A co]nsists of 3 sub sections:

1) DEMOGRAPHICAL VARIABLE

This consists of demographic characteristics of patients with chronic kidney disease which includes age, gender, marital status, income level, educational status of patients, and occupation [Appendix -IX]

2) CLINICAL PROFILE

This consists of duration of illness, type of dialysis, duration of treatment, history of comorbid conditions, previous hospitalization, cause of kidney disease, number of hospitalization for treatment of chronic kidney disease, number of medications taken currently [Appendix -IX].

3) BIOCHEMICAL PROFILE

This consists of haemoglobin level, blood urea nitrogen and creatinine of patient with chronic kidney disease who are on maintenance dialysis [Appendix -IX]

SECTION B

Section B consists of Kidney Disease Quality of Life Short Form (KDQOL – SF), Version 1.3 [Appendix -XII].

This tool was developed by RAND industries of Ron D Hays, Joel D Kallich, Donna L Maper, Stephen Joel Coons, Naseem Amin, William B Carter (1994)

The KDQOL-SF 1.3 disease- targeted items focus on particular health- related concerns of individuals with kidney disease and on dialysis. It includes Symptoms/problems(12 items),Effect of kidney disease on daily life(8 items), Burden of kidney disease(4items),Work status(2 items), Cognitive function(3items), Quality of social interaction(3 items),Sexual function(2 items),and Sleep(4 items). Also included are three additional quality of life scales: Social support (2 items), Dialysis staff encouragement (2 items) and Patient satisfaction (1 item).

The KDQOL-SF 1.3 also include a 36- item health survey (RAND 36- items Health Survey 1.0 or SF-36) as the generic core (Hays, Sherbourne, &Mazel, 1993; Ware & Sherbourne, 1992) consisting of eight multi- item measures of physical and mental health status: Physical Functioning(10 items),Role limitation caused by physical health problems(4items), Role limitation caused by emotional health problems(3items), Social functioning (2items), Emotional well being(5 items), Pain (2 items), Energy/fatigue (4 items),and General health perceptions(5 items). The final item, the overall health rating item, asks respondents to rate their health on a 0- 100 response scale ranging from "worst possible (as bad or worse than being dead)" to "

best possible health". The 80 KDQOL-SF 1.3 items take about 16 minutes to complete.

ESRD targeted domains are divided into 4 and each domain is further subdivided as follows:

1. **Physical Health Composite (PHC):** (a) Physical functioning, (b) work status,(c) role limitation due to physical function, (d) general health,(e) pain, (f) energy/fatigue and (g) social function

2. **Mental Health Composite (MHC):** (a) Emotional well-being, (b) quality of social interaction,(c) burden of kidney disease, (d) social support and (e) role limitation due to emotional function

3. **Kidney Disease Problems Composite (KDPC):** (a) Cognitive function, (b) symptoms/problems, (c) effects of kidney disease, (d) sexual function and (e) sleep

4. **Patient Satisfaction Composite (PSC):** (a) Patient Satisfaction and (b) staff encouragement.

The 80 KDQOL-SF 1.3 items take about 60 minutes to complete.

SCORING AND INTERPRETATION

The scoring procedure for the Kidney Disease Quality Of Life Short Form (KDQOL-SF) first transforms the raw precoded numeric values of items to a 0- 100 possible range, with higher transformed scores always reflecting better quality of life .Each item is put on a 0 to 100 range so that the lowest and highest possible scores are set at 0 to100, respectively. Scores represent the percentage of total possible score achieved.

Table 2: Recoded Items (step 1)

ITEM NUMBER	ORIGINAL RESPONSE CATEGORY(a)		RECODED VALUE
4a-d,5a-c,21	1	------→	0
	2	------→	100
3a-j	1	------→	0
	2	------→	50
	3	------→	100
19 a,b	1	------→	0
	2	------→	33.33
	3	------→	66.66
	4	------→	100
10,11 a,c,12a-d	1	------→	0
	2	------→	25
	3	------→	50
	4	------→	75
	5	------→	100
9b,c,f,g,i,13 e,18b	1	------→	0
	2	------→	20
	3	------→	40
	4	------→	60
	5	------→	80
	6	------→	100
20	1	------→	100
	2	------→	0

1-2,6,8,11b,d,14a-m, 15a-h,16a-b,24a-b	1	- - - - - →	100
	2	- - - - - →	75
	3	- - - - - →	50
	4	- - - - - →	25
	5	- - - - - →	0
7,9a,d,e,h,13a-d,f 18a,c	1	- - - - - →	100
	2	- - - - - →	80
	3	- - - - - →	60
	4	- - - - - →	40
	5	- - - - - →	20
	6	- - - - - →	0

Four of the KDQOL_SF items not listed in this table (item 16, 17, 22, 23) require additional instruction.

Item 17 and 22 need to be multiplied by 10 to put them on a 0-100 possible range. Item 23 is on a 1-7 precoded range. To recode this item, subtract 1 (possible minimum) from the precoded value, divide the difference by 6 (difference between possible maximum and minimum). And then multiply by 100. Item 16 needs to be considered with creating sexual function scale, if the answer to item 16 is "no", the sexual function scale score should be coded as missing.

Table 3— Averaging items to form scales (Step 2)

SCALE	NUMBER OF ITEMS	AFTER RECODING, AVERAGE THE FOLLOWING ITEMS
ESRD- targeted Areas		
Symptom/ problem list	12	14a-k,l(m)
Effect of kidney disease	8	15 a-h
Burden of kidney disease	4	12 a-d
Work status	2	20.21
Cognitive function	3	13 b,d,f
Quality of social interaction	3	13a,c,e
Sexual function	2	16 a,b
Sleep	4	17, 18 a-c
Social support	2	19 a,b
Dialysis staff encouragement	2	24 a,b
Patient satisfaction	1	23
36- items health survey (SF-36)		
Physical Functioning	10	3a-j
Role---physical	4	4a-d
Pain	2	7,8
General health	5	1,11a-d
Emotional well being	5	9b,c,d,f,h
Role---emotional	3	5a-c
Social function	2	6,10
Energy/fatigue	4	9a,e,g,i

The SF-36 change in health and 0-10 overall health rating items are scored as single items.

*14 L is answered by those on haemodialysis; 14m is answered by those on peritoneal dialysis. Higher the score indicates better quality of life and lower the score indicates the poorer quality of life.

TESTING OF THE TOOL/INTERVENTION:

CONTENT VALIDITY

Content validity of the tool and interventions was established by submitting it to five experts (2 in the field of Nephrology, 2 experts in the field of Nursing, 1 in the field of Bio-statistics for their expert opinion. Since it was a highly standardized tool, no further suggestions were given to reframe the tool. The tool was translated into Tamil and retranslated into English to assess the translation validity.

RELIABILITY

According to Polit and Beck (2016), "Reliability is the degree of consistency or dependability with which an instrument measures an attribute". Reliability was assessed by checking internal consistency. Kidney Disease Quality of Life Short Form (KDQOL – SF^{tm}), Version 1.3 is a highly validated tool used worldwide and the internal consistency of the tool is as below.

Table – 4: Internal Consistency of KDQOL – SF^{tm} Scale.

Scale	Internal Consistency Reliability
ESRD- targeted Areas	
Symptom/ problem list	0.84
Effect of kidney disease	0.82
Burden of kidney disease	0.83
Work status	0.83
Cognitive function	0.68
Quality of social interaction	0.61
Sexual function	0.89
Sleep	0.90
Social support	0.89
Dialysis staff encouragement	0.90

36- items health survey (SF-36)	
Physical Functioning	0.92
Role---physical	0.87
Pain	0.78
General health	0.78
Emotional well being	0.80
Role---emotional	0.86
Social function	0.87
Energy/fatigue	0.90

PILOT STUDY

Pilot study was conducted a week before the actual study at Lee Kidney Care and Multi Speciality Hospital, Madurai. Pilot study was conducted in the same manner as of the main study to check appropriateness and quality of instrument, suitability of statistical method, feasibility, relevance and practicability of the study and was conducted among 10 patients with chronic kidney disease on maintenance dialysis. The pilot study samples were not included in the original study. It revealed that the study is feasible.

Problems encountered and solutions framed during pilot study

As per the proposal of the study, the investigator planned to collect the data from the samples soon after the dialysis, once the patients are out of dialysis room. But during the pilot study, the investigator found that the patients were not willing to stay after dialysis for data collection. After suggestion from the experts, it was decided to do the data collection when the patient is undergoing dialysis.

During the pilot study, the samples found it difficult to score each of the items/statement presented to them from the tool. Hence after discussion with experts, the investigator used bowl method [Appendix-VIII] to make scoring easier for the patients.

The investigator also encountered problems in collection of data from the patients in one stretch since they experienced physical and emotional exhaustion. So rest periods had to be given in between to make data collection successful.

DATA COLLECTION PROCEDURE

The pilot study and the main study were conducted after the approval of the ethical committee of the Sacred Heart Nursing College [Appendix -I]. Before starting the study, the researcher obtained formal permission from Lee Kidney Care and Multi Speciality Hospital, Madurai. The data collection period was for 6 weeks. A descriptive correlation design was adopted for this study. The patients were selected conveniently on the basis of inclusion criteria. Informed written consent was obtained from the patient prior to the data collection procedure after explaining the nature and purpose of the study [Appendix-VII].The techniques used for data collection were interview and record analysis. The data was collected individually and it took 1.5 hrs to 2hrs on an average to do the same. Each day data was collected from 2 – 3 samples. The investigator introduced herself and developed rapport with the patients. Data was collected without causing hindrance to patient care. The data collection procedure for each patient was interspersed with rest periods to make it comfortable for patients. The data was collected individually in unhurried manner. Each 2 to 3 samples were administered HRQOL. The scoring for each of the item was made easier using bowl method [Appendix-VIII]. Confidentiality of the study was maintained by just mentioning the serial number and not the name of the patient. Assurance was given on maintaining confidentiality of the data. At the end of the data collection the researcher thanked each participant and did not experience any problem during the data collection process.

Table – 5: Schematic representation of the data collection procedure

DAY	SHIFT 1 (7.30 AM – 12 PM)	SHIFT 2 (12.30 PM – 4.30PM)	SHIFT 3 (5PM– 8.30 PM)
Day 1	1	1	
Day 2	1	1	
Day 3	1	1	
Day 4	1	1	
Day 5	1	1	
Day 6	1	1	
Day 7		1	1
Day 8	1	1	1
Day 9		1	
Day 10	1	1	
Day 11	1	1	1
Day 12	1	1	
Day 13		1	1
Day 14	1	1	1
Day 15	1	1	1
Day 16	1	1	
Day 17	1	1	1
Day 18		1	
Day 19	1	1	1
Day 20	1	1	
Day 21	1	1	1
Day 22		1	
Day 23		1	
Day 24		1	1
Day 25	1	1	
Day 26	1	1	
Day 27	1	1	1
Day 28	1	1	
Day 29	1	1	1
Day 30	1	1	

DATA ANALYSIS

After the data collection, data was organized, tabulated, summarized & analysed using descriptive statistics and inferential statistics according to the objectives of the study. Descriptive statistics like frequency, percentage, mean, standard deviation were calculated to describe the data. Inferential statistic like Independent t- test, ANOVA and correlation were calculated to infer the data.

PROTECTION OF HUMAN RIGHTS

The pilot study and main study were conducted after the approval from the ethical committee of the college. Permission was obtained from the authority of the hospitals. Purpose and detail of the study was explained to the samples and written consent was obtained from them. Assurance was given to the samples on the maintenance of anonymity and confidentiality.

CHAPTER - IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected and achievements of the objectives of the study.

The data were collected from 75 samples of patients with chronic kidney disease on maintenance dialysis in a selected setting of Madurai district in order to determine the health related quality of life. This is described in the following sections.

Section I

This section deals with the demographical characteristics, clinical characteristics and bio chemical characteristics.

Section II

This section deals with the mean and standard deviation of overall HRQOL and its domains.

Section III

Relationship between overall HRQOL and its domains

Section IV

This section deals with the association between overall HRQOL and its demographical characteristics, clinical characteristics and bio chemical characteristics.

SECTION I

Table -6: Distribution of samples according to Demographic Characteristics

N = 75

S.No	Demographic Variable	F	%
1	**Age**		
	a) < 50 years	20	26.7
	b) > 50years	55	73.3
2	**Gender**		
	a) Male	47	62.7
	b) Female	28	37.3
3	**Education**		
	a) Literate	36	48.0
	b) Illiterate	39	52.0
4	**Occupation**		
	a) Employed	6	08.0
	b) Unemployed	69	92.0
5	**Income**		
	a) < Rs 5000	25	33.3
	b) Rs 5000 – Rs 10,000	40	53.3
	c) > Rs 10,000	10	13.3
6	**Marital Status**		
	a) Single	9	12.0
	b) Married	58	77.3
	c) Divorced / Widowed / Separated	8	10.7
7	**Place of Residence**		
	a) Rural	54	72.0
	b) Urban	21	16.0

Table 6 depicts that majority (73.3%) were less than 50 years of age. A little less than 2/3rd (62.7%) were males. Nearly half of them were literates (48%) and illiterates (52%). An overwhelming majority (92%) were unemployed. A little over half of them (53.3%) had a monthly income of Rs 5000 – 10,000. Majority of the samples were married (77.3%) and 3/4th of them were hailing from a rural area (72%).

Table -7: Distribution of samples according to their Clinical Characteristics

N= 75

S.No	Clinical Variable	F	%
1	**No of medications**		
	a) < 5 medications	38	50.7
	b) >5 medications	37	49.3
2	**Received care at a hospital, but came home the same day**		
	a) < 4 times	71	94.7
	b) > 4 times	4	5.3
3	**Stay in any hospital overnight or longer (days)**		
	a) < 5 days	70	93.3
	b) >5 days	5	6.7
4	**Duration of illness**		
	a) < 6 months	10	13.3
	b) 6 months – 1 year	21	28.0
	c) 1 years – 3 years	28	37.3
	d) 3 years – 5 years	13	17.3
	e) > 5 years	3	4.0
5	**Years of illness on Dialysis**		
	a) < 3 Years	25	33.3
	b) > 3 years	50	66.7
6	**Cause of CKD (N= 75 for each component)**		
	a)Don't Know	8	5.8
	b) Hypertension	49	35.3
	c) Diabetes Mellitus	53	38.1
	d) Polycystic kidney disease	6	4.3

	e) Chronic Glomerulonephritis	6	4.3
	f) Chronic Pyelonephritis	5	3.6
	g) other causes	12	8.6
7	**Comorbid Conditions (N= 75 for each component)**		
	a) Hypertension	53	29.9
	b) Diabetes Mellitus	49	27.1
	c) Respiratory Disease	24	13.6
	d) Rheumatologic Disease	20	11.3
	e) Peptic Ulcer	27	15.3
	f) other causes	5	2.8

Table - 7 depicts that one half of them (50.7%) took less than five medications and the other half (49.3%) took more than 5 medications. Majority (71%) of them reported that they received care in a hospital without overnight stay for less than 4 times in the past 6 months. Most of them (93.3%) had received less than 5 days of treatment by staying in a hospital in the past six months. Majority (78.6%) had been suffering from for less than 3 years with CKD. Nearly 2/3rd of them (66.7%) have been undergoing dialysis for more than 3 years. Diabetes (53 out of 75) was the leading cause of CKD followed by hypertension (49 out of 75).

Table -8: Distribution of samples according to their Biochemical Characteristics

N=75

S.No	Biochemical Variable	F	%
1	**Hemoglobin (g/dl)**		
	< 8	56	74.7
	> 8	19	25.3
2	**Blood Urea (mg/dl)**		
	< 100	24	32
	> 100	51	68
3	**Serum Creatinine (mg/dl)**		
	< 8	34	45.3
	> 8	41	54.7

Table 8 shows that nearly 3/4th of the samples (74.7%) had a haemoglobin level of less than 8 g/dl; 68% had more than 100 mg/dl of blood urea and nearly half of them (54.7%) had more than 8 mg/dl of serum creatinine.

SECTION II

Table -9: Mean and Standard Deviation of Different Domains and Overall HRQOL of Patients with Chronic Kidney Disease on Maintenance Dialysis

.   **N=75**

Components of HRQOL	No of questions	Mean	Standard Deviation
Physical Health Composite	29	20.36	5.70
Mental Health composite	17	26.05	6.89
Kidney Disease Problem Composite	29	30.69	4.56
Patient Satisfaction Composite	3	50.49	11.87
Overall HRQOL	78	31.87	3.51

Table 9 depicts that the overall HRQOL of CKD patients on maintenance dialysis is 31.87±3.51.The HRQOL related to physical health composite is the worst affected (20.36±5.70) followed by mental health composite (26.06±6.89), kidney disease problem composite (30.69±4.56) and patient satisfaction (50.49±11.87).
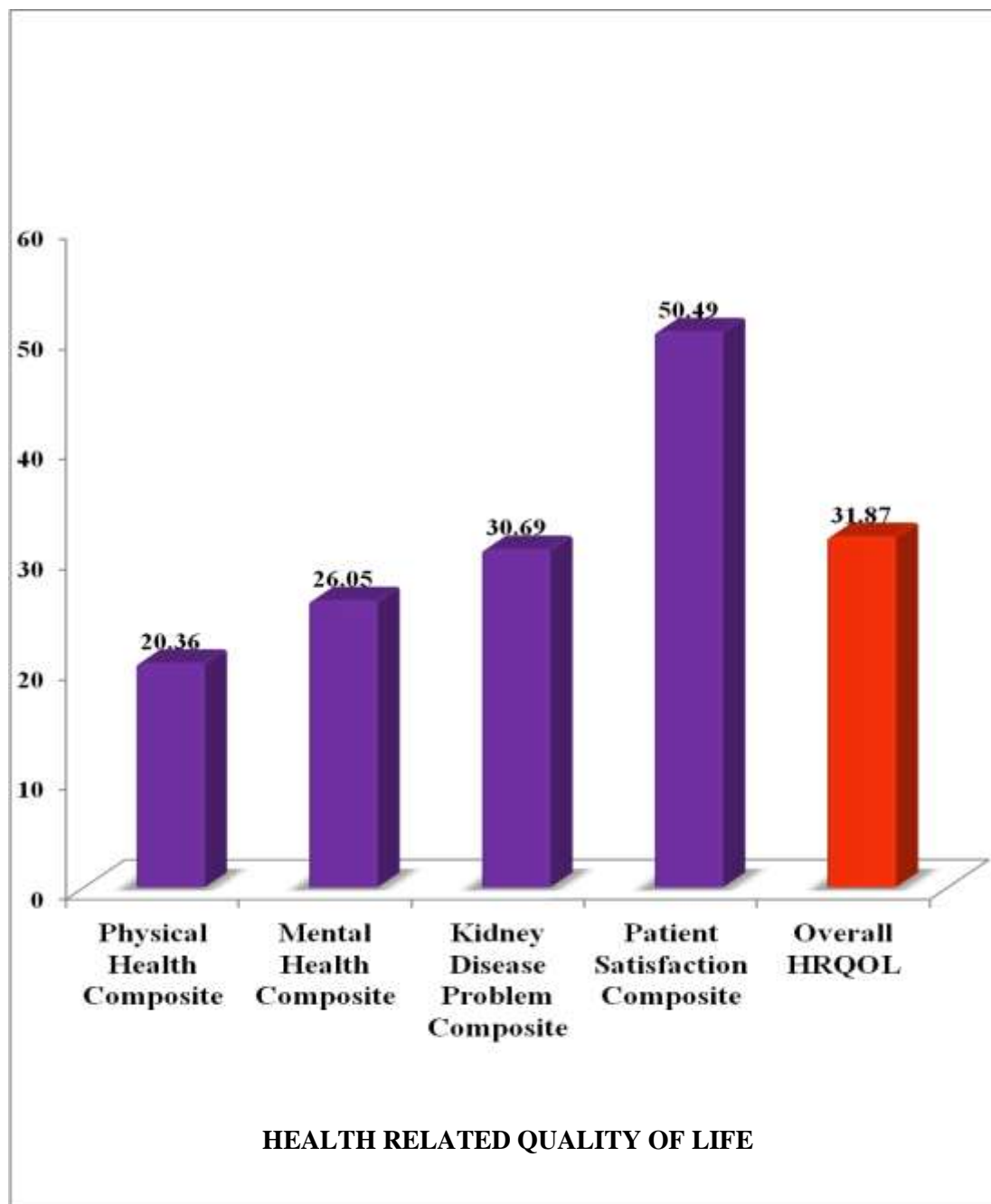
Fig: 5 Mean of overall HRQOL and its composites

Table -10: Mean and Standard Deviation of HRQOL based on Overall Physical Health Composite Score and it's Sub Components Score of Patients with Chronic Kidney Disease on Maintenance Dialysis.

N = 75

Domain	Sub-components of Physical Health Composite	No of questions	Mean	Standard Deviation
Physical Health Composite	Physical Functioning	10	18.73	9.50
	Role Limitation due to physical health problem	4	15	15.37
	Pain	2	22.36	14.01
	General Health	5	21.7	9.3
	Social Function	2	30.33	15.53
	Energy / Fatigue	4	27.73	9.70
	Work Status	2	6.66	17.11
	Total Score	29	20.36	5.70

Table 10 depicts that the HRQOL in terms of overall physical health is 20.36±5.70. Under the physical health sub components, the HRQOL related to work status (6.66±17.11) was the worst affected followed by role limitation due to physical health problem (15 ±15.37), physical functioning (18.73 ±9.5), general health (21.7± 9.3), pain (22.36 ±14.01), energy/fatigue (27.73 ±9.70), and social function (30.33 ±15.53).
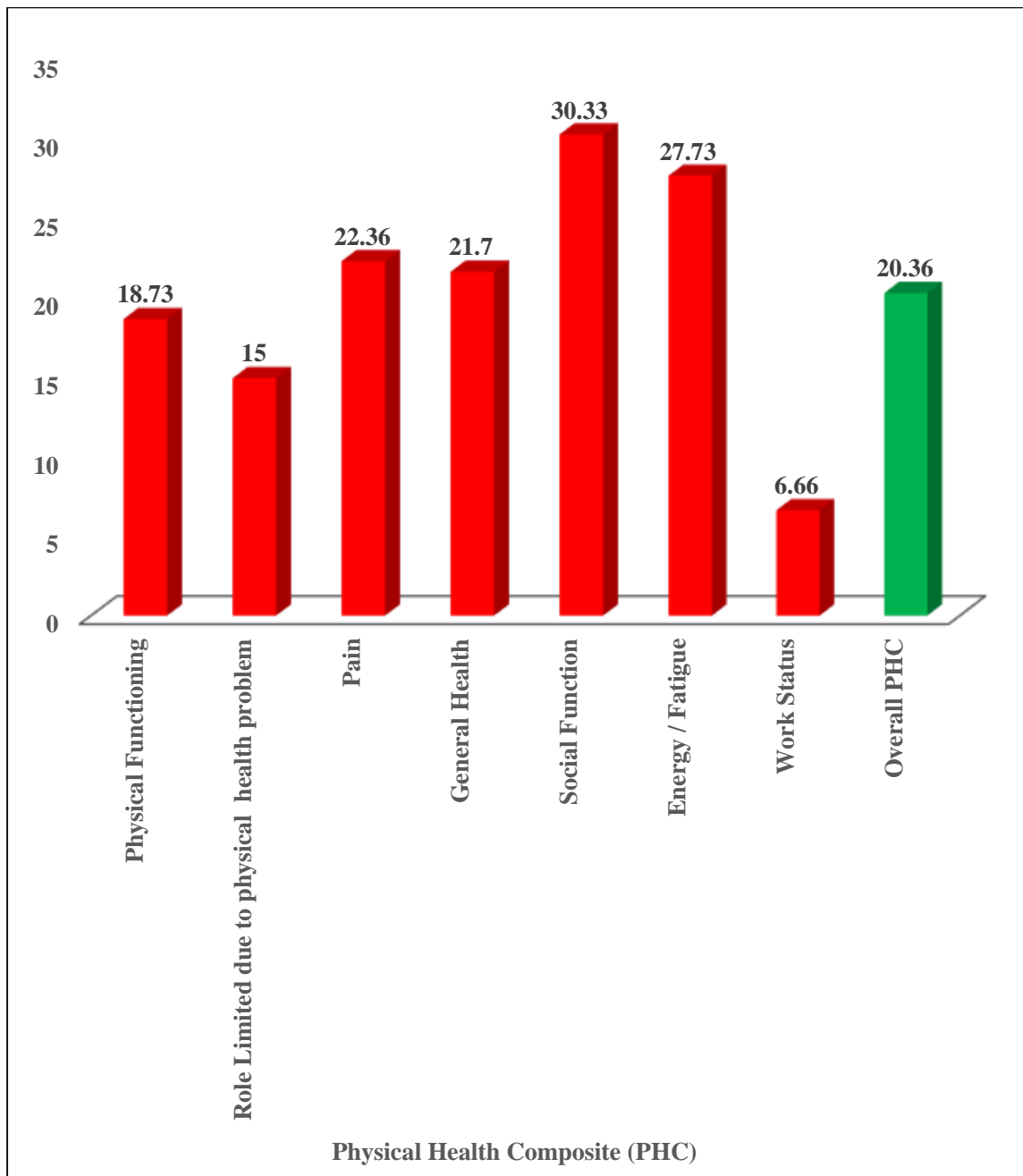
Fig: 6 Mean of the Sub components of PHC and Overall Physical Health Composite Score

Table 11 -: Mean and Standard deviation of HRQOL based on Overall Mental Health Composite Scores and it's Sub Components Scores of Chronic Kidney Disease Patients on Maintenance Dialysis.

N = 75

Domain	Subcomponents of Mental Health Composite	No of questions	Mean	Standard Deviation
Mental Health Composite	Quality of Social Interaction	3	44.26	11.7
	Social Support	2	28.22	22.81
	Emotional Wellbeing	5	27.9	6.15
	Role Limited due to emotional health	3	17.33	16.76
	Burden of Kidney Disease	4	11.84	9.82
	Total Score	17	26.05	6.89

Table 11 depicts that the HRQOL in terms of overall mental health is 26.05±6.89. Burden of kidney disease affected the overall mental health more (11.84 ± 9.28) followed by role limitation due to emotional health (17.33 ± 16.76), emotional wellbeing (27.9 ± 6.15), social support (28.22 ±22.81), and quality of social interaction (44.26± 11.7).
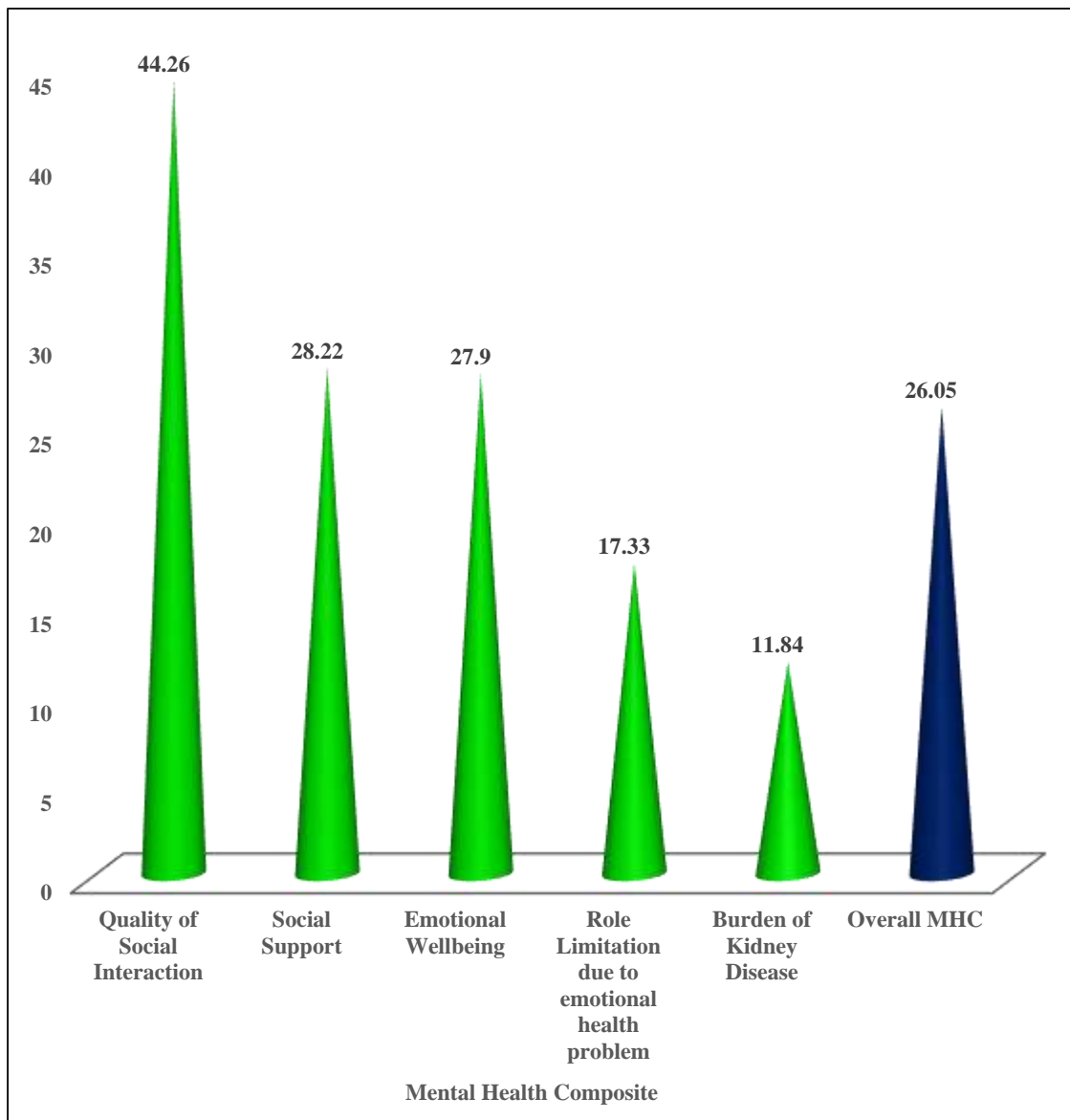
Fig: 7 Mean of Sub Components of MHC and overall Mental Health Composite

Score

Table - 12: Mean and Standard Deviation of HRQOL based on Overall Kidney Disease Problem Composite scores and it's Sub Components Scores of Chronic Kidney Disease Patients on Maintenance Dialysis

N = 75

Domain	Subcomponents of Kidney Disease Problem Composite	No of questions	Mean	Standard Deviation
Kidney Disease Problem Composite	Cognitive function	3	47.95	12.60
	Problem/Symptoms List	12	41.42	12.68
	Sleep	4	34.16	11.39
	Effect of Kidney Disease	8	27.95	8.25
	Sexual Problems	2	2	9.8
	Total Score	29	30.69	4.56

Table 12 depicts that the HRQOL in terms of overall kidney disease problems is 30.69±4.56. Sexual problem affects the overall kidney disease problem more (2.0±9.8) followed by effect of kidney disease (27.95±8.25), sleep (34.16±11.39), problem /symptoms list (41.42±12.68) and cognitive function (47.95±12.60).
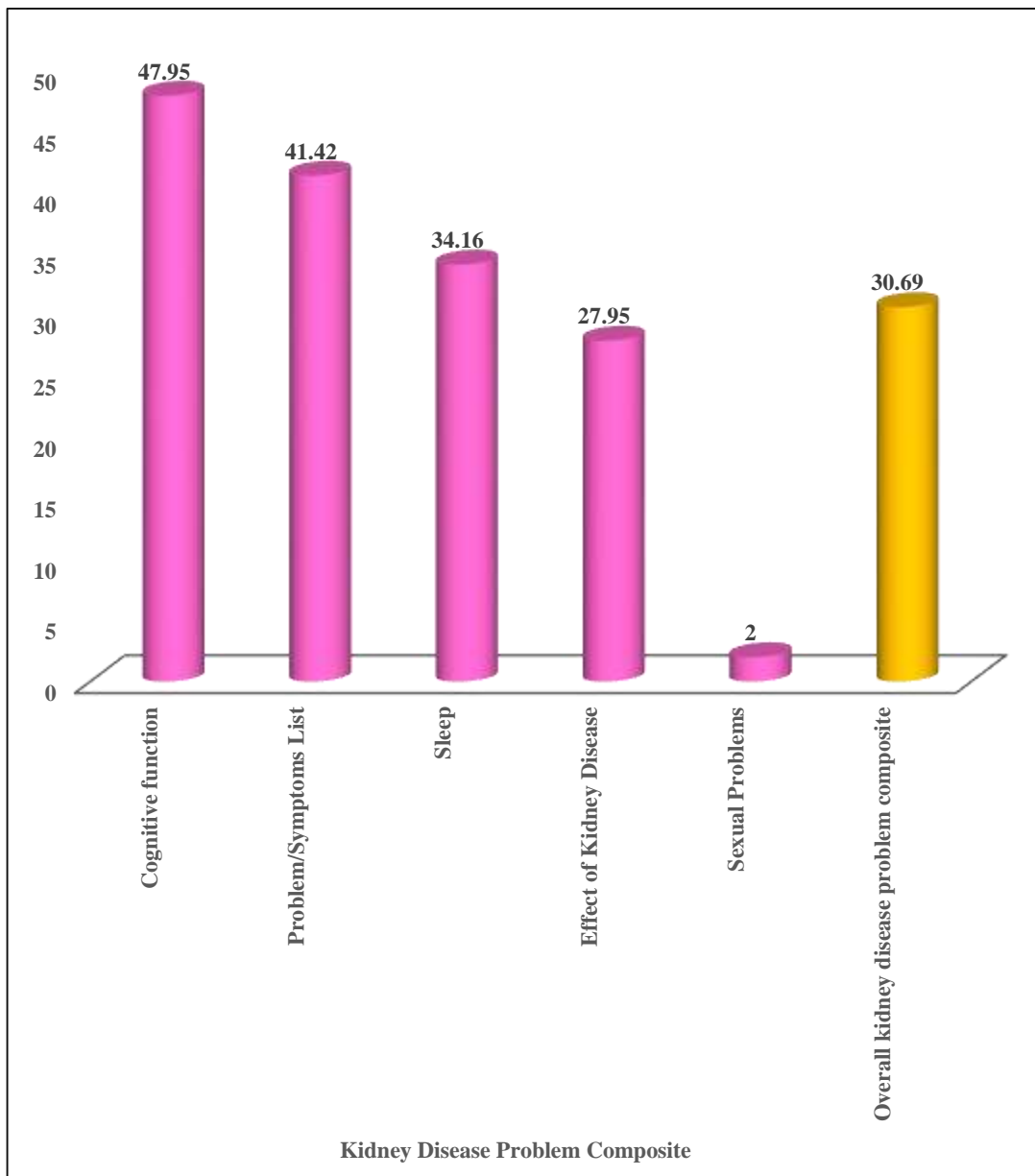
Fig: 8 Mean of Sub components of KDPC and Overall Kidney Disease Problem Composite Score

Table -13: Mean and Standard Deviation of Health Related Quality of Life based on Overall Patient Satisfaction Composite Scores and it's Sub Components Scores of Patients with Chronic Kidney Disease on Maintenance Dialysis.

N = 75

Domain	Subcomponents of Patient Satisfaction Composite	No of questions	Mean	Standard Deviation
Patient Satisfaction composite	Dialysis staff encouragement	2	55.13	17.60
	Patient satisfaction	1	45.8	15.02
	Total Score	3	50.49	11.87

Table 13 depicts that the HRQOL in terms of overall patient satisfaction is 50.49±11.87. The HRQOL in the order of highest to lowest for the sub components of patient satisfaction domains are dialysis staff encouragement 55.13±17.60 followed by patient satisfaction 45.8±15.02.
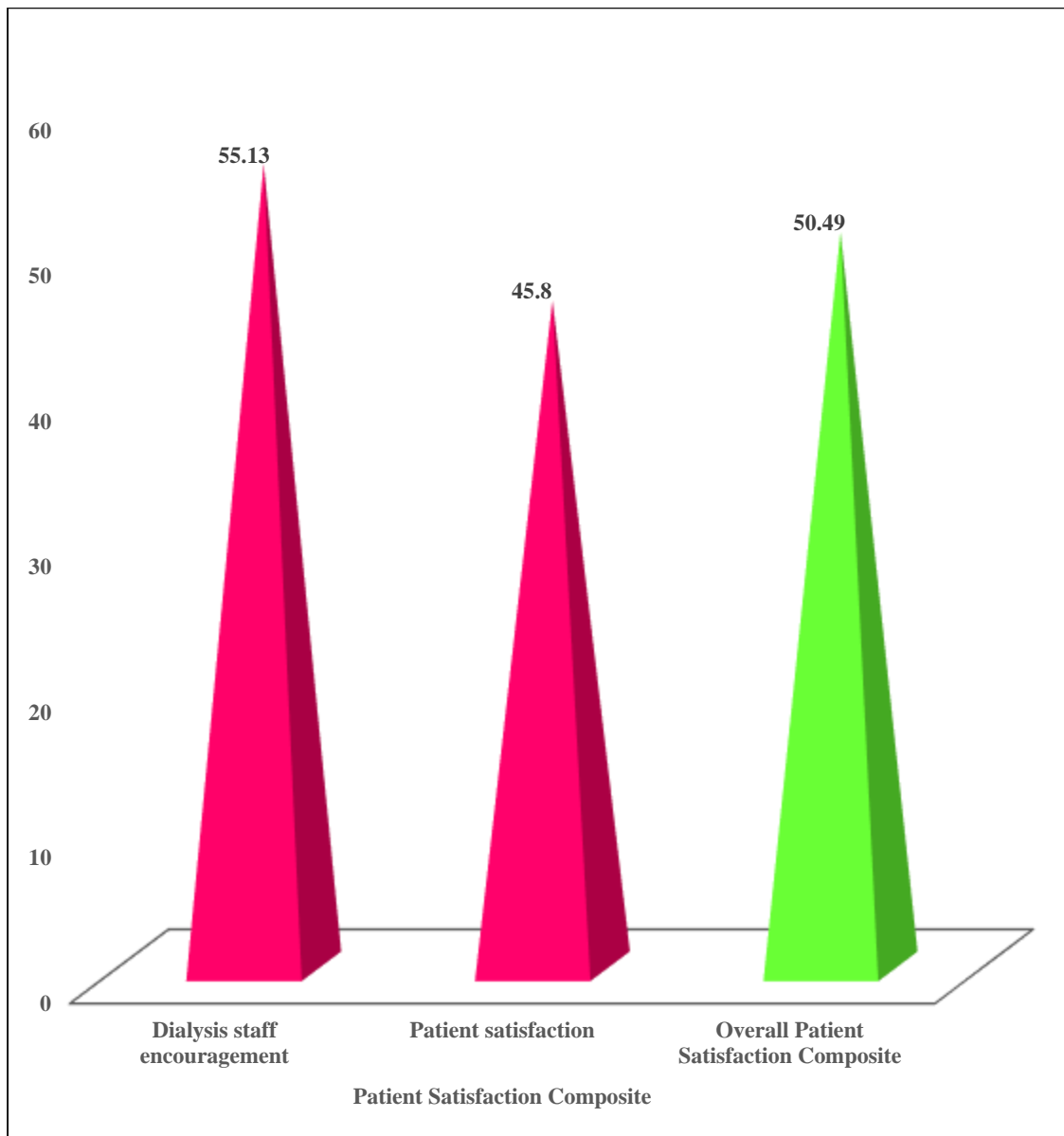
Fig: 9 Mean of Sub Components of PS and Overall Patient Satisfaction Composite Score

SECTION III

Table -14: Relationship between overall HRQOL and its sub components

N = 75

		PHC	MHC	KDPC	PSC	Overall HRQOL
Physical Health Composite (PHC)	r' Value	1	0.11	-0.08	-0.04	0.16
	p' Value		0.344	0.49	0.73	0.15
Mental Health Composite (MHC)	r' Value	0.11	1	0.28[*]	0.05	0.46[**]
	p' Value	0.34		0.01	0.65	0.00
Kidney Disease Problem Composite (KDPC)	r' Value	-0.08	0.28[*]	1	-0.01	0.27[*]
	p' Value	0.49	0.01		0.87	0.01
Patient Satisfaction Composite (PSC)	r' Value	-0.04	0.05	-0.01	1	0.63[**]
	p' Value	0.73	0.65	0.87		0.00
Overall Health Related Quality Of Life	r' Value	0.16	0.46[**]	0.27[*]	0.63[**]	1
	p' Value	0.15	0.00	0.01	0.00	

 # -p>.05 Not Significant;*- p<0.05 Significant;**- p<0.01 Highly Significant,

***- p<0.001 Very Highly Significant

To find out the correlation between overall Health Related Quality of Life and its sub-components of the patients with CKD on Maintenance Dialysis, the null hypothesis was stated as follows:

Ho: There is no significant relationship between the overall health related quality of life and its sub components.

Table 14 depicts Statistically significant positive relationship were found between mental health composite and kidney disease problem composite (r=0.28, p =0.01), overall health related quality of life and mental health composite (r=0.46. p = 00), overall health related quality of life and kidney disease problem composite (r = 0.27, p = 0.01), overall health related quality of life and patient satisfaction (r=0.63, p = 00).

SECTION IV

Table -15: Association between Physical Health Composite Score and selected Demographical Variables

N = 75

S.No	Demographic Variable	N	Mean	SD	Statistic Value	p' value
1	**Age**				t= 0.97	0.33#
	a) < 50 years	20	19.30	4.10	df=73	
	b) > 50years	55	20.75	6.17		
2	**Gender**				t = 0.02	0.97#
	a) Male	47	20.37	5.63	df = 73	
	b) Female	28	20.34	5.91		
3	**Education**				t = 1.68	0.09#
	a) Literate	36	21.50	6.86	df = 73	
	b) Illiterate	39	19.31	4.18		
4	**Occupation**				t = 0.16	0.87#
	a) Employed	6	20	4.86	df= 73	
	b) Unemployed	69	20.39	5.80		
5	**Income**					0.60#
	a) < Rs 5000	25	21.26	6.12		
	b) Rs 5000 – Rs 10,000	40	20.05	5.80	F = 0.50	
	c) > Rs 10,000	10	19.39	4.22		
6	**Marital Status**					0.09#
	a) Single	9	18.17	4.10		
	b) Married	58	20.80	5.98	F = 0.88	
	c) Divorced / Widowed / Separated	8	19.69	4.99		
7	**Place of Residence**				t = 0.71	0.47#
	a) Rural	54	20.66	5.78	df = 73	
	b) Urban	21	19.60	5.55		

 # -p>0.05 Not Significant, *- p<0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall physical health composite scores and selected demographical variables of patient with CKD on maintenance dialysis

Table 15 shows there is no statistically significant association between overall physical health composite score and selected demographical variable like age [t= 0.97, p=0.33], gender [t=0.02, p=0.97], education [t= 1.68, p = 0.87], occupation [t= 0.16,p = 0.87], income [F = 0.50, p = 0.60], marital status [F= 0.88, p= 0.09] and place of residence [t=0.71, p= 0.47]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

Table -16: Association between Physical Health Composite Score and selected Clinical Variables

N = 75

S.No	Clinical Variable	N	Mean	SD	Statistic Value	p' Value
1	**No of medications**					
	a) < 5 medications	38	20.43	6.50	t= 0.10	0.92 #
	b) >5 medications	37	20.29	4.83	df=73	
2	**Received care at a hospital, but came home the same day**					
	a) < 4 times	71	20.51	5.80	t = 0.93	0.44 #
	b) > 4 times	4	17.76	2.64	df = 4.89	
3	**Stay in any hospital overnight or longer (days)**					
	a) < 5 days	70	20.31	5.80	t = 0.39	0.75#
	b) >5 days	5	21.14	4.44	df = 5.03	
4	**Duration of illness**					
	a) < 6 months	10	19.00	7.25		
	b) 6 months – 1 year	21	20.36	5.00		
	c) 1 years – 3 years	28	20.65	6.51	F = 0.22	0.92#
	d) 3 years – 5 years	13	21.07	44.8		
	e) > 5 years	3	19.29	2.69		
5	**Years of illness on Dialysis**					
	a) < 3 Years	50	19.62	5.72	t = 1.61	0.11#
	b) > 3 years	25	21.85	5.46	df = 73	
6	**Cause of CKD**					
	a) Hypertension					
	No	26	19.65	5.30	t = 0.78	0.43#
	Yes	49	20.74	5.92	df = 73	
	b) Diabetes Mellitus					
	No	22	20.17	5.52	t = 0.18	0.85#
	Yes	53	20.44	5.82	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall physical health composite scores and selected clinical variables of patients with CKD on maintenance dialysis.

Table 16 shows there is no statistically significant association between overall physical health composite and selected clinical variable like number of medications prescribed medications taken by the patient as per physician [t= 0.10, p =0.92], receive care at a hospital, but came home the same day [t=0.93,p=0.44], stay in any hospital overnight or longer (days) [t= 0.39, p = 0.75], duration of illness [F= 0.22,p = 0.92], years of illness in dialysis [t = 1.61, p = 0.11], cause of CKD for hypertension [t = 0.88, p= 0.43] and diabetes mellitus [t=0.18, p= 0.85]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

Table - 17: Association between Physical Health Composite Score and Selected Biochemical Variables

N = 75

S.No	Biochemical Variable	N	Mean Score	SD	Statistic Value	p' Value
1	**Haemoglobin (g/dl)**					
	< 8	19	20.84	5.94	t = 0.42	0.67 #
	> 8	56	20.2	5.66	df = 73	
2	**Blood Urea (mg/dl)**					
	< 100	24	19.46	5.6	t = 0.93	0.34 #
	> 100	51	20.79	5.75	df = 73	
3	**Serum Creatinine (mg/dl)**					
	< 8	41	18.72	5.37	t = 2.85	0.006**
	> 8	34	22.34	5.53	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall physical health composite scores and selected biochemical variables of patients with CKD on maintenance dialysis.

Table 17 shows there is no statistically significant association between overall physical health composite score and selected biochemical variable like haemoglobin (g/dl) [t= 0.42, p =0.67], Urea (mg/dl) [t=0.93,p=0.34].

The findings show that there is a statistically significant association between overall physical health composite score and selected biochemical variable serum creatinine (mg/dl) [t= 02.85, p = 0.00]. So the researcher rejects the null hypotheses and accepts the research hypotheses for this variable alone.

Table -18: Association between Mental Health Composite score and selected Demographical Variables

<div align="right">

N = 75

</div>

S.No	Demographical Variable	N	Mean	SD	Statistic Value	p' Value
1	**Age**				$t = 0.78$	0.42#
	a) < 50 years	20	25.75	7.58	$df = 73$	
	b) > 50years	55	26.16	6.69		
2	**Gender**					
	a) Male	47	25.6	7.22	$t = 0.73$	0.46#
	b) Female	28	26.81	6.37	$df = 73$	
3	**Education**					
	a) Literate	36	26.63	7.33	$t = 0.69$	0.49#
	b) Illiterate	39	25.51	6.51	$df = 73$	
4	**Occupation**					
	a) Employed	6	20.66	3.07	$t = 2.03$	0.003**
	b) Unemployed	69	26.52	6.94	$df = 73$	
5	**Income**					
	a) < Rs 5000	25	30.64	5.37		
	b) Rs 5000 – Rs 10,000	40	30.86	4.36	$F = 0.08$	0.92#
	c) > Rs 10,000	10	30.21	3.31		
6	**Marital Status**					
	a) Single	9	31.22	3.44		
	b) Married	58	30.65	4.32	$F = 0.07$	0.93#
	c)Divorced/Widowed /Separated	8	30.44	2.84		
7	**Place of Residence**					
	a) Rural	54	26.38	7.37	$t = 0.65$	0.46#
	b) Urban	21	25.21	5.56	$df = 73$	

 # - p>0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall mental health composite scores and selected demographical variables of patients with CKD on maintenance dialysis.

Table 18 shows there is no statistically significant association between overall mental health composite score and selected demographical variable like age [t= 0.78, p = 0.42], gender [t=0.73,p=0.46], education [t= 0.69, p = 0.48], income [F = 0.08, p = 0.92], Marital status [F = 0.07, p= 0.93] and Place of residence [t=0.65, p= 0.46].

Table depicts that there is a statistically significant association between overall mental health composite score and occupation [t= 2.03, p = 0.003]. So the researcher rejects the null hypotheses and accepts the research hypotheses for this variable alone.

Table - 19: Association between Mental Health Composite score and Selected Clinical Variables

N = 75

S.No	Clinical Variable	N	Mean	SD	Statistic Value	p' Value
1	**No of medications**					
	a) < 5 medications	38	25.59	6.48	t= 0.58	0.56 #
	b) >5 medications	37	26.53	7.35	df=73	
2	**Received care at a hospital, but came home the same day**					
	a) < 4 times	71	26.21	6.87	t = 0.74	0.41 #
	b) > 4 times	4	23.27	7.73	df = 73	
3	**Stay in any hospital overnight or longer (days)**					
	a) < 5 days	70	25.87	7.04	t = 0.82	0.23 #
	b) >5 days	5	28.53	4.07	df = 73	
4	**Duration of illness**					
	a) < 6 months	10	29.92	4.21		
	b) 6 months – 1 year	21	29.37	3.54		
	c) 1 years – 3 years	28	31.53	5.10	F = 1.27	0.29#
	d) 3 years – 5 years	13	30.81	4.93		
	e) > 5 years	3	34.42	3.88		
5	**Years of illness on Dialysis**					
	a) < 3 Years	50	26.7	7.29	t = 1.161	0.21#
	b) > 3 years	25	24.75	5.93	df = 73	

6	Cause of CKD					
	a) Hypertension					
	No	26	27.01	8.20	t = 0.80	0.38#
	Yes	49	25.54	6.12	df = 40.14	
	b) Diabetes Mellitus					
	No	22	26.88	7.80	t = 0.66	0.50#
	Yes	53	25.71	6.53	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, ***- p<0.001 Very Highly Significant

Ho: There is no significant association between the overall mental health composite scores and selected clinical variables patients with CKD on maintenance dialysis.

Table 19 shows there is no statistically significant association between overall mental health composite score and selected clinical variable like number of medications taken by the patient as per physician order [t= 0.58, p =0.56] received care at a hospital without overnight stay came home the same day [t=0.74,p=0.41], stay in any hospital overnight or longer (days) [t= 0.82, p = 0.23], duration of illness [F= 1.27,p = 0.29], years of illness in dialysis [t= 1.16, p = 0.21], cause of CKD as hypertension [t = 0.80, p= 0.38] and diabetes mellitus [t=0.66, p=0.50]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

Table - 20: Association between Mental Health Composite Score and selected Biochemical Variable.

<div align="right">N = 75</div>

S.No	Biochemical Variable	N	Mean Score	SD	Statistic Value	p' Value
1	**Haemoglobin (g/dl)**					
	< 8	19	27.18	6.18	t = 0.82	0.38#
	> 8	56	25.67	7.13	df = 73	
2	**Urea (mg/dl)**					
	< 100	24	24.91	6.20	t = 0.98	0.30#
	> 100	51	26.59	7.19	df = 73	
3	**Serum Creatinine (mg/dl)**					
	< 8	41	26.43	7.17	t = 0.52	0.60#
	> 8	34	25.59	6.63	df = 73	

 # - p>0.05 Not Significant, *- p<0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall physical health composite scores and selected biochemical variables patients with CKD on maintenance dialysis.

Table 20 shows there is no statistically significant association between overall mental health composite score and selected biochemical variable like haemoglobin (g/dl) [t= 0.82 p =0.38], Urea (mg/dl) [t=0.98,p=0.30], and serum creatinine (mg/dl) [t= 0.52, p = 0.60]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

Table -21: Association between Kidney Disease Problem Composite Score and selected Demographical Variables

N = 75

S.No	Demographic variable	N	Mean	SD	Statistic Value	p' Value
1	**Age**				t= 0.46	0.62#
	a) < 50 years	20	31.10	4.02	df=73	
	b) > 50years	55	30.55	4.76		
2	**Gender**				t = 0.44	0.64#
	a) Male	47	30.51	4.40	df = 73	
	b) Female	28	31.01	4.88		
3	**Education**				t = 1.68	0.09#
	a) Literate	36	21.51	6.86	df = 73	
	b) Illiterate	39	19.31	4.18		
4	**Occupation**				t = 1.39	0.16#
	a) Employed	6	29.93	4.13	df= 73	
	b) Unemployed	69	31.4	4.87		
5	**Income**					
	a) < Rs 5000	25	30.64	5.37		
	b) Rs 5000 – Rs 10,000	40	30.86	4.36	F = 0.08	0.92#
	c) > Rs 10,000	10	30.21	3.31		
6	**Marital Status**					
	a) Single	9	31.22	3.44		
	b) Married	58	30.65	4.93	F = 0.07	0.93#
	cDivorced/Widowed / Separated	8	30.44	2.84		
7	**Place of Residence**				t = 1.051	0.24#
	a) Rural	54	31.08	4.201	df = 73	
	b) Urban	21	29.71	5.371		

#- p>0.05 Not Significant, *- p<0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall kidney disease problem composite scores and selected demographical variables patients with CKD on maintenance dialysis.

Table 21 shows there is no statistically association between overall kidney disease problem composite core and selected demographical variable like age [t= 0.46, p = 0.62], gender [t=0.44, p=0.64], education [t= 1.68, p = 0.09], occupation [t= 1.39, p = 0.16], income [F = 0.08, p = 0.93], marital status [F = 0.07, p= 0.93] and place of residence [t=1.05, p= 0.24]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

Table - 22: Association between Kidney Disease Problem Composite Score and selected Clinical Variables

<div align="right">

N = 75

</div>

S.No	Clinical Variable	N	Mean	SD	Statistic Value	p' Value
1	**No of medications**					
	a) < 5 medications	38	31.25	4.36	t= 1.07	0.28#
	b) >5 medications	37	30.12	4.75	df=73	
2	**Received care at a hospital, but came home the same day**					
	a) < 4 times	71	30.61	4.54	t = 0.55	0.52#
	b) > 4 times	4	32.14	5.35	df = 3.24	
3	**Stay in any hospital overnight or longer (days)**					
	a) < 5 days	70	30.58	0.55	t = 0.77	0.39#
	b) >5 days	5	32.23	1.64	df = 73	
4	**Duration of illness**					
	a) < 6 months	10	29.92	4.21		
	b) 6 months – 1 year	21	29.37	3.54		
	c) 1 years – 3 years	28	31.53	5.103	F = 1.27	0.29#
	d) 3 years – 5 years	13	30.81	4.93		
	e) > 5 years	3	34.42	3.88		
5	**Years of illness on Dialysis**					
	a) < 3 Years	50	30.61	4.30	t = 0.21	0.82#
	b) > 3 years	25	30.86	5.13	df = 73	

6	**Cause of CKD**					
	a) Hypertension					
	No	26	30.47	4.85	t = 0.31	0.75#
	Yes	49	30.81	4.44	df = 73	
	b) Diabetes Mellitus					
	No	22	30.38	3.51	t = 0.37	0.66#
	Yes	53	30.82	4.95	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall kidney disease problem composite scores and selected clinical variables patients with CKD on maintenance dialysis.

Table 22 shows there is no statistically significant association between overall kidney disease problem composite scores and selected clinical variable like number of medications taken by the patient [t= 1.07, p =0.28], received care at a hospital without overnight stay [t=0.55,p=0.51], stay in any hospital overnight or longer (days) [t= 0.77, p = 0.38], duration of illness [F= 1.27,p = 0.29], years of illness in dialysis [t= 0.21, p = 0.82], cause of CKD as hypertension [t = 0.31, p= 0.75] and diabetes mellitus [t=0.37, p=0.66]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

Table - 23: Association between Kidney Disease Problem Composite Score and selected Biochemical Variables

N = 75

S.No	Biochemical Variable	N	Mean Score	SD	Statistic Value	p' Value
1	**Haemoglobin (g/dl)**					
	< 8	19	28.68	5.17	t = 2.05	0.02*
	> 8	56	31.38	4.17	df = 73	
2	**Urea (mg/dl)**					
	< 100	24	29.03	3.54	t = 2.22	0.02*
	> 100	51	31.48	4.80	df = 73	
3	**Serum Creatinine (mg/dl)**					
	< 8	41	30.62	4.32	t = 0.14	0.88#
	> 8	34	30.78	4.903	df = 73	

 # -p>0.05 Not Significant, *- p<0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall kidney disease problem composite scores and selected biochemical variables of patients with CKD on maintenance dialysis.

Table 23 shows there is no statistically significant association between overall mental health composite score and selected biochemical variable like Serum Creatinine (mg/dl) [t= 0.14, p = 0.88]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

The finding shows that there is a statistically significant association between overall kidney disease problem composite score and selected biochemical variable haemoglobin (g/dl) [t= 2.05, p =0.02] and blood urea (mg/dl) [t=2.22, p=0.02]. So the researcher rejects the null hypotheses and accepts the research hypotheses for this variable alone.

Table - 24: Association between Patient Satisfaction Composite Score and selected Demographical Variables

N = 75

S.No	Demographic variable	N	Mean	SD	Statistic Value	p' Value
1	**Age**				t= 0.93	0.34#
	a) < 50 years	20	48.37	11.54	df=73	
	b) > 50years	55	51.27	12.00		
2	**Gender**					
	a) Male	47	52.08	11.69	t = 1.50	0.13#
	b) Female	28	47.84	11.9	df = 73	
3	**Education**					
	a) Literate	36	53.29	12.19	t = 2.00	0.04*
	b) Illiterate	39	47.91	11.10	df = 73	
4	**Occupation**					
	a) Employed	6	48.26	8.48	t = 0.47	0.53#
	b) Unemployed	69	50.69	12.15	df= 73	
5	**Income**					
	a) < Rs 5000	25	53.97	12.64		
	b) Rs 5000 – Rs 10,000	40	47.83	11.93	F = 2.29	0.10#
	c) > Rs 10,000	10	52.5	6.79		
6	**Marital Status**					
	a) Single	9	49.86	10.69		
	b) Married	58	49.95	11.47	F = 0.69	0.50#
	c) Divorced/ Widowed /Separated	8	55.21	16.09		
7	**Place of Residence**					
	a) Rural	54	51.37	12.54	t = 1.02	0.26#
	b) Urban	21	48.25	9.87	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall patient satisfaction composite scores and selected demographical variables of patients with CKD on maintenance dialysis.

Table 24 shows there is no statistically significant association between overall patient satisfaction composite and selected demographical variable like age [t= 0.93, p = 0.34], gender [t=1.50,p=0.13], occupation [t= 0.47,p = 0.53], income [F = 2.29, p = 0.10], marital status [f = 0.69, p= 0.50] and place of residence [t=1.02, p= 0.26]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

The finding shows that there is a statistically significant association between overall patient satisfaction composite score and selected demographical variable education [t= 2, p = 0.04]. So the researcher rejects the null hypotheses and accepts the research hypotheses for this variable alone.

Table - 25: Association between Patient Satisfaction Composite Score and selected Clinical Variables

N = 75

S.No	Clinical Variable	N	Mean	SD	Statistic Value	p' Value
1	**No of medications**					
	a) < 5 medications	38	49.72	11.39	t= 0.57	0.40 #
	b) >5 medications	37	51.29	12.45	df=73	
2	**Receiveds care at a hospital, but came home the same day**					
	a) < 4 times	71	50.55	11.79	t = 0.17	0.86 #
	b) > 4 times	4	49.47	15.15	df = 73	
3	**Stay in any hospital overnight or longer (days)**					
	a) < 5 days	70	49.80	11.38	t = 1.91	0.05**
	b) >5 days	5	60.16	15.75	df = 73	
4	**Duration of illness**					
	a) < 6 months	10	50.62	12.88		
	b) 6 months – 1 year	21	56.15	13.58		
	c) 1 years – 3 years	28	45.56	9.59	F = 2.65	0.04**
	d) 3 years – 5 years	13	51.54	10.34		
	e) > 5 years	3	52.08	7.21		
5	**Years of illness on Dialysis**					
	a) < 3 Years	50	50.08	12.78	t = 0.18	0.84#
	b) > 3 years	25	50.13	10.05	df = 73	

6 **Cause of CKD**

a) Hypertension

No	26	50.96	11.45	t = 0.24	0.80#
Yes	49	50.25	12.2	df = 73	

b) Diabetes Mellitus

No	22	53.27	13.01	t = 1.31	0.19#
Yes	53	49.34	11.29	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall patient satisfaction composite scores and selected clinical variables of patients with CKD on maintenance dialysis.

Table 25 shows there is no statistically significant association between overall patient satisfaction composite and selected clinical variable like number of medications prescribed medications taken by the patient as per physician order [t= 0.57, p =0.40, receive care at a hospital, but came home the same day [t=0.17,p=0.81], years of illness in dialysis [t= 0.18, p = 0.84], cause of CKDfor hypertension [t = 0.24, p= 0.80] and diabetes mellitus [t=1.31, p=0.19]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

The finding shows that there is a statistically significant association between overall patient satisfaction composite score and selected clinical variable like stay in any hospital overnight or longer (days) [t= 1.91, p = 0.05] and duration of illness [F= 2.65,p = 0.04]. So the researcher rejects the null hypotheses and accepts the research hypotheses for this variable alone.

Table - 26: Association between Patient Satisfaction Composite Score and selected Biochemical Variables

N = 75

S.No	Biochemical Variable	N	Mean Score	SD	Statistic Value	p' Value
1	**Hemoglobulin (g/dl)**					
	< 8	19	52.02	14.63	t = 0.6	0.50#
	> 8	56	49.96	10.88	df = 73	
2	**Blood Urea (mg/dl)**					
	< 100	24	49.39	11.98	t = 0.55	0.58#
	> 100	51	51.01	11.9	df = 73	
3	**Serum Creatinine (mg/dl)**					
	< 8	41	50.65	12.95	t = 0.12	0.89#
	> 8	34	50.3	10.61	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall patient satisfaction composite scores and selected biochemical variables of patients with CKD on maintenance dialysis.

Table 26 shows there is no statistically significant association between overall patient satisfaction composite and selected biochemical variable like haemoglobin (g/dl) [t= 0.67, p =0.50], Urea (mg/dl) [t=0.55,p=0.53], and serum creatinine (mg/dl) [t= 0.12, p = 0.89]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

Table -27: Association between Overall Health Related Quality Of Life Score and selected Demographical Variables

N = 75

S.No	Demographics variable	N	Mean	SD	Statistic Value	p' Value
1	Age				t= 0.58	0.55#
	a) < 50 years	20	31.48	3.81	df=73	
	b) > 50years	55	32.02	3.41		
2	Gender				t = 0.14	0.88#
	a) Male	47	31.83	3.55	df = 73	
	b) Female	28	31.95	3.49		
3	Education				t = 1.55	0.12#
	a) Literate	36	32.52	3.76	df = 73	
	b) Illiterate	39	31.27	3.18		
4	Occupation				t = 2.34	0.04*
	a) Employed	6	29.95	1.90	df= 73	
	b) Unemployed	69	32.04	3.57		
5	Income					
	a) < Rs 5000	25	33.16	4.20		
	b) Rs 5000 – Rs 10,000	40	31.12	2.99	F = 2.71	0.05*
	c) > Rs 10,000	10	31.7	2.87		
6	Marital status					
	a) Single	9	31.80	3.99		
	b) Married	58	31.81	3.36	F = 0.12	0.88#
	c) Divorced/Widowed /Separated	8	32.46	4.37		
7	Place of residence				t = 2.15	0.03*
	a) Rural	54	32.4	3.54	df = 73	
	b) Urban	21	30.51	3.08		

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall health related quality of life scores and selected demographical variables of patients with CKD on maintenance dialysis.

Table 27 shows there is no statistically significant association between overall health related quality of life and variable like age [t= 0.58, p = 0.55], gender [t=0.14,p=0.88], education [t= 1.55, p = 0.12], marital status [F = 0.12, p= 0.88] and place of residence [t=2.15, p= 0.03]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

The finding shows that there is a statistically significant association between overall health related quality of life and occupation [t= 2.34,p = 0.04], income [F = 2.71, p = 0.05]. So the researcher rejects the null hypotheses and accepts the research hypotheses for this variable alone.

Table - 28: Association between Overall Health Related Quality Of Life Score and selected Clinical Variables.

N = 75

S.No	Clinical Variable	N	Mean	SD	Statistic Value	p' Value
1	**No of medications**					
	a) < 5 medications	38	31.73	3.57	t= 0.36	0.71#
	b) >5 medications	37	32.02	3.48	df=73	
2	**Received care at a hospital, but came home the same day**					
	a) < 4 times	71	31.91	3.58	t = 0.83	0.44#
	b) > 4 times	4	31.15	1.6	df = 73	
3	**Stay in any hospital overnight or longer (days)**					
	a) < 5 days	70	31.83	3.48	t = 0.35	0.72#
	b) >5 days	5	32.41	4.31	df = 73	
4	**Duration of illness**					
	a) < 6 months	10	30.84	4.2		
	b) 6 months – 1 year	21	33.46	3.34		
	c) 1 years – 3 years	28	31.00	3.56	F = 1.89	0.12#
	d) 3 years – 5 years	13	31.74	2.8		
	e) > 5 years	3	33.06	1.12		
5	**Years of illness on Dialysis**					
	a) < 3 Years	50	31.78	3.96	t = 0.31	0.71#
	b) > 3 years	25	32.06	2.42	df = 73	

6	**Cause of CKD**					
	a) Hypertension					
	No	26	31.77	3.3	t = 0.18	0.85#
	Yes	49	31.93	3.64	df = 73	
	b) Diabetes Mellitus					
	No	22	32.23	4.33	t = 0.56	0.57#
	Yes	53	31.72	3.14	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall health related quality of life scores and selected clinical variables of patients with CKD on maintenance dialysis.

Table 28 shows there is no statistically significant association between overall health related quality of life and selected clinical variable like number of medications taken by the patient [t= 0.36, p =0.71], received care at a hospital, without overnight stay [t=0.83,p=0.44], stay in any hospital overnight or longer (days) [t= 0.35, p = 0.72], duration of illness [F= 1.89,p = 0.12], years of illness on dialysis [t= 0.31, p = 0.71], cause of CKD as hypertension [t = 0.18, p= 0.85] and diabetes mellitus [t=0.56, p=0.57]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

Table - 29: Association between Overall Health Related Quality of Life and selected Biochemical Variables.

N = 75

S.No	Biochemical Variable	N	Mean Score	SD	Statistic Value	p' Value
1	**Hemoglobulin (g/dl)**					
	< 8	19	31.81	3.92	t = 0.94	0.92#
	> 8	56	31.89	3.39	df = 73	
2	**Urea (mg/dl)**					
	< 100	24	31.01	3.06	t = 1.46	0.14#
	> 100	51	32.28	3.65	df = 73	
3	**Serum Creatinine (mg/dl)**					
	< 8	41	31.40	3.40	t = 1.29	0.19#
	> 8	34	32.45	3.59	df = 73	

 # -p> 0.05 Not Significant, *- p< 0.05 Significant, **- p<0.01 Highly Significant, *- p<0.001 Very Highly Significant**

Ho: There is no significant association between the overall health related quality of life and selected biochemical variables of patients with CKD on maintenance dialysis.

Table 29 shows there is no statistically significant association between overall health related quality of life and selected biochemical variable like haemoglobin (g/dl) [t= 0.94, p =0.92], blood urea (mg/dl) [t=1.46,p=0.14], and serum creatinine (mg/dl) [t= 1.29, p = 0.19]. Hence the researcher rejects the research hypothesis and accepts the null hypothesis.

CHAPTER V

DISCUSSION

The incidence and prevalence of patients with Chronic Kidney Disease (CKD) is increasing worldwide and in India. CKD is now recognised as a significant and rapidly growing global health burden, which affects HRQOL not only for patient but the family also. The complications of CKD, its treatment and co existing disease have been found to have a significant impact on the physical health of patients. It is well documented that the health status of the renal patients population is worse than that of the general healthy population, for this reason, the assessment of HRQOL of CKD patient's have received considerable attention.

The present study is intended to assess the HRQOL of patients with CKD on maintenances dialysis in a selected setting of Madurai. A descriptive correlation design was adopted for the study, A total of 75 samples were selected conveniently. Kidney Disease Quality of Life Short Form (KDQOL- SF) was used to assess the HRQOL. Data was collected over a period of 5 weeks. Data were analysed using descriptive and inferential statistics.

The study findings are discussed in this chapter with reference to the objectives and hypothesis stated in chapter I

Demographic Characteristics

Among 75 patients with Chronic Kidney Disease on maintenance dialysis majority (73.3%) were less than 50 years of age. A little less than 2/3rd (62.7%) were males. Nearly half of them were literate (48%) and illiterates of (52%). An overwhelming majority (92%) were unemployed. A little over half of them (53.3%)

had a monthly income of Rs 5000 – 10,000. Majority of the samples were married (77.3%) and 3/4th of them were hailing from a rural area (72%).

Clinical Characteristic

One half of them (50.7%) took less than five medications and the other half (49.3%) took more than 5 medications. Majority (71%) of them reported that they received care in a hospital without overnight stay for less than 4 times in the past 6 months. Most of them (93.3%) had received less than 5 days of treatment by staying in a hospital in the past six months. Majority (78.6%) had been suffering from for less than 3 years with CKD. Nearly 2/3rd of them (66.7%) have been undergoing dialysis for more than 3 years. Diabetes (53 out of 75) was the leading cause of CKD followed by hypertension (49 out of 75).

Biochemical Characteristics

Nearly 3/4th of the samples (74.7%) had a haemoglobin level of less than 8 g/dl; 68% had more than 100 mg/dl of blood urea and nearly half of them (54.7%) had more than 8 mg/dl of serum creatinine.

1. **The first objective of the study was to assess the health related quality of life among patients with chronic kidney disease who are on maintenance dialysis**

The present study assessed all the four domains of HRQOL. The overall HRQOL was found to be impaired significantly in the current study (31.87±3.51). The physical health was significantly affected domain among all the 4 domains of HRQOL and an average score was found to be 20.36±5.70.The lowest scores in the current study is recorded for the physical health domain which is in line with other studies [Masina (2016); Al-Jumah (2011)]; the scores for the Physical Composite Summary (PCS) were lower than the scores in the Mental Health Composite Summary (MHCS) [30.69±4.56]. This reflects the excessive burden on physical

health compared to other symptoms experienced by patients treated with hemodialysis for CKD. The physical health composite score reported in a study by Murali et al.,(2014) was 24.45±11.85 which is more or less similar to the current study findings of 20.36±5.70.In another study by Cruz et al., (2011) reported physical health composite score to be 42.2±9.9. Which is higher than the current study finding.The top 3 worst affected areas under the physical health are the work status (6.66±17.11), role limitations caused by physical health problem (15±15.37) and physical functioning (18.73±9.50).

The mental health composite score reported in a study by Abdelghany (2016) was 36.76±10.22 which is higher than the current study finding (26.05±6.89). Various other studies also show higher results than current study [Rahimi (2016), Cruz et al., (2011)]. The sub components of mental health composite that contributed significantly to the low mental health composite scores are burden of kidney disease (11.84±9.82), role limitations caused by emotional health problem (17.33±16.76) and emotional wellbeing (27.9±6.15).

The overall kidney disease problem composite score reported in a study by Rahimi et al., (2016) was 54.00±13.33 which is higher than the current study finding. In a study by Murali et al., (2014) the kidney disease problem composite score was slightly higher 40.75±17.65 than the current study finding (30.69±4.56). The worst affected areas under kidney disease problem composite are sexual function (2.0±9.8), effect of kidney disease (27.95±8.25), and sleep (34.16±11.39).

Among all four domains, high scores were recorded for patient satisfaction composite (50.49±11.87) which most likely reflects the efforts of clinical staff as well as family and community members in supporting patients treated with hemodialysis

for CKD. In study reported by Murali et al., (2015) the physical composite score was higher than the current study score of (71.93±12.35).

Hemodialysis which is one of the end-stage renal failure treatments is a life saving treatment for the patients. Patients encounter many physical, spiritual and social problems. Symptoms such as fatigue, cramp, pain, sleep disorder, dyspnea, pruritis, depression, nausea, vomiting and constipation 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 the hemodialysis patients. It was found that especially fatigue, influenced working, spending free time, nutritional habits, sexual activities, enjoying life, family relations and friendships negatively. Some psycho social difficulties like the deterioration of the working capacity, decrease in the physical activities, problems inside the family and sexual problem in dialysis patients complicate the maintenance of the treatment and influence the disease process and treatment negatively (Mollaoglu and Deveci ,2017).

Prior researches conducted by Duangpaeng (2012), Mollaoglu and Deveci (2017); Cruz et al.,(2011), Kuriokose et al., (2012) and Aggarwal, Pawar and Yadav (2016); support the current study findings that HRQOL is affected in CKD patients undergoing dialysis.

Health Related Quality of Life is a critically important clinical outcome for hemodialysis patients. HRQOL measures provide information about the impact of the treatment on perceived well being. A prior study by Mapes et al., (2003) concluded that lower scores for the 3 major components of HRQOL were strongly associated with higher risk of death and hospitalization in hemodialysis patients, independent series of demographic and co-morbid factors. Poor HRQOL in these

patients is a significant predictor of mortality and hospitalization. Hence the practising nurses in dialysis centres and kidney care centres need to be trained to assess HRQOL in CKD patients using validated instruments.

2. **The second objective was to identify the relationship between different domains of health related quality of life among patients with chronic kidney disease on maintenance dialysis.**

Statistically significant positive relationship was found between mental health composite score and kidney disease problem composite score (r = 0.28,p = 0.01), mental health composite score and overall HRQOL (r = 0.46, p = 0.00), kidney disease problem composite and overall HRQOL (r = 0.27, p = 0.01), patient satisfaction composite score and overall HRQOL (r = 0.63, p = 0.00).

The current study findings is in the line with the study findings of Masina et al., (2016) who reported that the kidney disease composite score correlated strongly and positively with both mental health composite scores (r = 0.62, p = 0.002) and physical health composite scores (r = 0.77, p<0.0001).The current study findings suggest that addressing kidney specific components of health related quality of life has a potential to improve mental health composite and overall HRQOL. Patient satisfaction towards treatment in terms of staff support and family support has a bearing on overall HRQOL and this support enables the patient to continue the lifelong treatment.

In a study by Tel and Tel (2011), a statistically significant positive relationship was found between social support and quality of life (p<0.001).Social support has a beneficial role on physical and psychological wellbeing. Patel et al., found that as social support increases in hemodialysis patients, the QOL also increases. The finding of this study is consistent with these results.

3. **The third objective of the study was to find out the association between demographical, clinical, biochemical variables and health related quality of life among patients with chronic kidney disease on maintenance dialysis.**

In the current study, patients whose creatinine level less than 8mg/dl had less physical health composite score (18.72±5.37) than whose levels were more than 8mg/dl (22.34±5.53) [t = 2.8,p = 0.006]. As per the researcher the reason for the above findings is that as the creaatine level increases which proportionally increase the number of dialysis per week could have had a positive impact on their physical health. The other characteristics studied did not have a bearing on physical health composite scores.The current study finding is contrary to the study findings of Mujais et al., (2009) where age, gender and comorbities, haemoglobin, were associated with physical health composites.

In the current study CKD patients who were unemployed (26.52±6.94) experienced better mental health than those who were employed (20.66±3.07) [t = 2.03, p = 0.003]. No other characteristics were found to be associated with mental health composite scores.

Patients with haemoglobin less than 8 g/dl had low kidney disease problem composite score (28.68±5.17) than who's haemoglobin was more than 8g/dl (31.38±4.17) [t = 2.05,p = 0.02]; Patient with blood urea value less than 100mg/dl had low kidney disease problem composite score (29.03±3.54) than who's blood urea level was more than 100mg/dl [t = 2.22, p = 0.02].

Literates had better patient satisfaction composite score when compared to illiterates (t = 2.00, p = 0.04). Duration of illness (F = 2.65, p = 0.04), stay in a hospital overnight or longer (t = 1.91, p = 0.05) were also associated with patient satisfaction composite.

Characteristics like occupation (t = 2.34, p = 0.04), income (F = 2.71, p = 0.05), place of residence (t = 2.15, p = 0.03) had a statistically significant impact on overall HRQOL.

In the previous studies which evaluated the HRQOL among CKD patients mixed findings are reported in terms of association of demographical, clinical and biochemical variables with HRQOL [Masina (2016); Al-Jumah (2011); Fukubasa (2003)]. So as in the current study too certain variables are found to be associated with the HRQOL and its domains which could be specific to the current population.

The strength of the current study includes the use of an internationally validated instrument for assessing HRQOL in patients treated with hemodialysis for CKD. The area of the study had chosen itself a strength since no such studies have been reported in southern Tamil Nadu. So far only very limited studies were reported in south India.

The global prevalence of CKD is predicted to rise sharply in the next 20 – 30 years with the biggest growth in low resource setting (Liyanage et al., 2015).Therefore, a measure of HRQOL which is cheap, simple to administer and comparable to other global settings represents an important outcome measure which can be employed in resource limited settings and used to support routine laboratory tests of dialysis efficacy were available.

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS &

RECOMMENDATIONS

This chapter contains the summary of the study and conclusion drawn. It clarifies the limitations of the study and the implications. The recommendations are given for different areas like nursing education, administration, nursing practice and nursing research.

Chronic Kidney Disease (CKD) is a Health Related Quality of Life (HRQOL) deteriorating disease which is not only a public health but also a socio economic problem of a country. CKD has a profound effect on HRQOL and a better understanding of HRQOL issues would enable providers to deliver more patient-centred care and improve overall well-being of the patients.

The current study was undertaken to determine health related quality of life of patients with chronic kidney disease on maintenance dialysis. A descriptive correlation design was adopted for the study a total of 75 samples were selected conviently. Assessment of health related quality of life was done by using the KDQOL-SF 1.3 also includes a 36- item health survey (RAND 36- items Health Survey 1.0 or SF-36). Data were analysed using descriptive and inferential statistics.

Objectives

1. To assess the health related quality of life among patients with chronic kidney disease who are on maintenance dialysis.

2. To identify the relationship between different domains of health related quality of life among patients with chronic kidney disease on maintenance dialysis.

3. To find out the association between demographical, clinical, biochemical variables and health related quality of life among patients with chronic kidney disease on maintenance dialysis.

Hypotheses

All hypotheses were checked at 0.05 level of significance

H_1: There will be significant relationship between the domains of health related quality of life among patients with chronic kidney disease who are on maintenance dialysis.

H_2: There will be significant association between health related quality of life in chronic kidney disease patients on maintenance dialysis with their selected demographical, clinical and biochemical variables.

Major findings of the study

Among 75 patients with chronic kidney disease 73.3% were above the age of 50 years .Males (62.7%) are more affected than female (37.3%). Nearly half of the samples were illiterate (52%). 3/4th of them were unemployed and 53.3% of their family income is of 5000 – 10,000. Majority of them were hailed from rural area (72%). Majority (78.6%) had been suffering from for less than 3 years with CKD. Nearly 2/3rd of them (66.7%) have been undergoing dialysis for more than 3 years. Diabetes (53 out of 75) was the leading cause of CKD followed by hypertension (49 out of 75). Nearly 3/4th of the samples (74.7%) had a haemoglobin level of less than 8 g/dl; 68% had more than 100 mg/dl of blood urea and (54.7%) had more than 8 mg/dl of serum creatinine.

1. The Overall HRQOL of CKD patients on maintenance dialysis is 31.877±3.510.

2. HRQOL related to physical health composite is the worst affected (20.36±5.70) for patients with chronic kidney disease on maintenance dialysis. Under the sub components of HRQOL physical health composite, the HRQOL related to work status (6.66±17.11) was the worst affected.

3. The HRQOL in terms of overall mental health is 26.05±6.89. Burden of kidney disease (11.84 ± 9.28) was the most affected in overall mental health composite Score.

4. The HRQOL in terms of overall kidney disease problems is 30.69±4.56. Sexual problem was the most affected in overall kidney disease problem score of (2.0±9.8).

5. The HRQOL in terms of overall patient satisfaction is 50.49±11.87. Dialysis staff encouragement (55.13±17.60) was the highest score in overall Patient Satisfaction Score.

6. There is a statistically significant association between overall physical health composite score and selected biochemical variable serum creatinine (mg/dl) [t= 02.85, p = 0.00].

7. There is a statistically significant association between overall mental health composite score and Occupation [t= 2.03, p = 0.00].

8. There is a statistically significant association between overall kidney disease problem composite score and selected biochemical variable like haemoglobin (g/dl) [t= 2.05, p =0.02] and blood urea (mg/dl) [t=2.22, p=0.02].

9. There is a statistically significant association between overall patient satisfaction composite score and selected demographical variable education [t= 2, p = 0.04].

10. There is a statistically significant association between overall patient satisfaction composite score and selected clinical variable like stay in any hospital overnight or longer (days) [t= 1.91, p = 0.05] and duration of illness [F= 2.65,p = 0.04].

11. There is a statistically significant association between overall health related quality of life and selected demographical variable occupation [t= 2.34,p = 0.04], income [F = 2.71, p = 0.05].

12. There is a statistically significant positive relationship were found between mental health composite and kidney disease problem composite (r=0.28, p =0.01), overall health related quality of life and mental health composite score (r=0.46.p=00), overall health related quality of life and kidney disease problem composite (r = 27, p = 0.01), overall health related quality of life and patient satisfaction (r=0.63, p = 00).

Implication for Nursing

Nursing Practice

✴ The study findings revealed the importance of assessment of HRQOL among CKD patients. A prior study by Mapes et al., (2003) concluded that lower scores for the 3 major components of HRQOL were strongly associated with higher risk of death and hospitalization in hemodialysis patients, independent of demographic and co-morbid factors. Poor HRQOL in these patients is a significant predictor of mortality and hospitalization. Hence the practising nurses in dialysis centres and kidney

care centers need to be trained to assess HRQOL in CKD patients using validated instruments.

* Practicing nurses also need to be trained to tailor interventions to improve HRQOL, which is a significant predictor for mortality and hospitalization.

* The study findings signify the importance of HRQOL assessment by health care professionals in order to improve their life.

Nursing Education

* The incidence and prevalence of CKD patients are increasing at an alarming rate both globally and in India. So, nursing students both at undergraduate and post graduate level need to be educated about the assessment of HRQOL for patients with CKD and the significance of the same. Students need to be encouraged to tailor nursing interventions based on HRQOL scores.

* Due weightage need to be given in the nursing education about the concept of HRQOL.

* Nursing personnel working in dialysis unit and kidney centres should be given in-service education regarding assessment of HRQOL of CKD patients.

Nursing Research

The finding of the present study has added knowledge to the already existing literature and the implication for the nursing research are given in the form of recommendation. This study can be a baseline for future studies to build upon and motivate other investigation to conduct further study.

Nursing Administration

✱ The nursing administrators especially of dialysis ward can organize continuing education program on assessment of HRQOL of CKD patients.

✱ Nursing administrators can design a protocol on the assessment of HRQOL of CKD patients as a routine nursing care.

✱ Nursing administrator can design a protocol on enhancement of QOL based on HRQOL scores.

Limitations

The limitations of the study were as follows:

✱ The study was conducted among the patients with chronic kidney disease of any stage undergoing maintenance dialysis from a selected hospital of Madurai, so generalisation must be done with caution.

✱ The responses were based on self report of the study sample.

✱ Since the staging of CKD was not available, the impact of severity of CKD on HRQOL could not be studied.

✱ The cross sectional design of the study only permitted the researcher to determine association between variables but not casual relationships.

✱ HRQOL is multifactorial; in the current study only few factors are studied, the other factors warrant further exploration.

Recommendations

On the basis of the present study the following recommendations have been made for further studies.

✱ A similar cross sectional survey can be undertaken among large population of CKD patients in southern Tamil Nadu.

* A longitudinal study can be conducted to assess the HRQOL of CKD patients prospectively.

* A study can be undertaken to compare HRQOL between CKD patients on dialysis and not on dialysis.

* A study can be under taken to determine the physiological and psychological correlates of HRQOL of CKD patients.

* A Prospective study can be undertaken to determine whether HRQOL is a predictor of mortality and hospitalization.

* A study can be undertaken to assess HRQOL of CKD patients across different stages of CKD.

* A qualitative approach can be used to explore HRQOL among patients with End Stage Renal Disease.

Conclusion

The present study examined Health Related Quality Of Life of Patients with Chronic Kidney Disease. The results indicated that HRQOL is poor in patients who are on maintenance dialysis.

Monitoring HRQOL is an important indicator to identify impact of CKD on physical, psychological and social wellbeing. So, there is a need for the health care system to develop appropriate evidence-based practice guideline for the assessment and management of HRQOL on CKD.

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APPENDIX – I

ETHICAL CERTIFICATE

SACRED HEART NURSING COLLEGE
ULTRA TRUST

4 / 235, COLLEGE ROAD,
THASILDAR NAGAR,
MADURAI - 625 020.
TAMILNADU, INDIA.
PHONE : 0452 - 2534593
Email : ultratrust@rediffmail.com

...2...

Ref : UT : SHNC: Ph.D(N) : 2017

Date : 17.01.2017

-2-

8. Dr.S.RAVIKUMAR, MBBS, DNB(Family Medicine).,F.Diab.,
    Tutor, Department of Medicine,
    Best Dental Science College.

RESOLUTION – 1/2017

It is resolved to accept **Ms. S. ARUL MALAR FEMINA** to conduct a study "A descriptive study to determine the health related quality of life among patients with chronic kidney disease on maintenance dialysis in a selected setting of Madurai district".

The Institutional Ethics Committee expects to be informed about the progress of the study, any changes in the protocol, patient information and asks to be provided a copy of the final report.

Yours Sincerely

Chair Person
Ethics Committee

Member Secretary
Ethics Committee

Dr.SABHESAN, M.B.B.S. DPM, MNAMS, Ph.D.

Dr. E.DEVAKIRUBAI M.Sc., (N) Ph.D

SACRED HEART NURSING COLLEGE

ULTRA TRUST

4 / 235, COLLEGE ROAD,
THASILDAR NAGAR,
MADURAI - 625 020.
TAMILNADU, INDIA.
PHONE : 0452 - 2534593
Email : ultratrust@rediffmail.com

Ref : UT : SHNC: Ph.D(N) : 2017   Date : 17.01.2017

ETHICAL COMMITTEE

The following members of the ethics committee were present at the meeting held on
12.01.2017 at 2.15 pm in Sacred Heart Nursing College.

CHAIR PERSON

1.   Dr. SABHESAN, M.B.B.S. DPM, MNAMS, Ph.D.
        Head, Department of Psychiatry
        CSI Mission Hospital, Madurai.

DEPUTY CHAIRMAN

2.   Dr. NALINI JEYAVANTH SANTHA, M.Sc., (N) Ph.D.
        Principal, Sacred Heart Nursing College, Madurai – 625 020.

MEMBER SECRETARY

3.   Dr. DEVAKIRUBAI, M.Sc., (N) Ph.D.
        Head, Department of MEDICAL-SURGICAL Nursing,
        Sacred Heart Nursing College, Madurai–625 020.

MEMBERS

4.   Dr. VIJAYALAKSHMI, M.D.S.,
        Principal,
        Best Dental College, Ultra Trust.

5.   Dr. RAJASEKARAN, M.B.B.S, D.F.M. D.Diab
        Pathologist
        Best Dental Science College,
        Ultra Trust, Madurai.

6.   Dr.R.VARADHARAJAN, M.Sc., MPHIL.,M.ED.,Ph.D.,
        Former District Educational Officer,
        Madurai.

7.   Mr. CHINNAKARUPPAN M.A., B.L., DCFSC
        Advocate and Notary Public,
        14, Asari Street, Thallakulam, Madurai – 2.

APPENDIX – II

PERMISSION LETTER TO CONDUCT RESEARCH

Dr.NALINI JEYAVANTH SANTHA M.Sc(N), Ph.D,
PRICIPAL,
SACRED HEART NURSING COLLEGE.

4/235, COLLEGE ROAD,
THASILDAR NAGAR,
MADURAI – 625020.
PHONE: 2534593

Ref.UT: SHNC: 2017

To,

Dr. M. Shanmuga Perumal MD.,DM(NEPRO),

Lee Kidney Care and Multi Specialty Hospital,

5, Vanamamalai Nagar,

Bypass Road,

Madurai.

Respected Sir/ Madam,

Sub: Sacred Heart Nursing College, Madurai – project work of M.SC (Nursing) student –permission requested- Reg.

We wish to state that **Miss. Arul Malar Femina . S**, Final year M.SC (Nursing) student of our college has to conduct a research project, which is to be submitted to the Tamil Nadu Dr.M.G.R. Medical University, Chennai in partial fulfillment of university requirements.

The topic of research project is "A descriptive study to determine the health related quality of life among chronic kidney disease patients on maintenance dialysis in a selected setting of Madurai district".

We therefore request you to kindly permit her to do the research work in your organization under your valuable guidance and suggestion.

Thanking you,

Yours faithfully,

Principal

C. NALINI JEYAVANTH SANTHA, M.Sc, Ph.D,
Principal
SACRED HEART NURSING COLLEGE
Madurai - 625 020.

SACRED HEART NURSING COLLEGE

APPENDIX-III

LETTER REQUESTING OPINION AND SUGGESTION OF EXPERTS FOR ESTABLISHING CONTENT VALIDITY AND VALIDITY OF TOOL

From:

XXX

Sacred Heart Nursing,

Madurai- 20

To,

Respected Sir/ Madam:

Sub: Requesting opinions and suggestion of experts for the content validity and validity of tool.

I am a post graduate student (Medical Surgical Specialty) of the Sacred Heart Nursing College. I have selected the below mentioned topic of the research project submitted to DR.M.G.R. Medical University, Chennai as a fulfillment of Master of Science in nursing.

Title of the topic:

"A descriptive study to determine the health related quality of life among chronic kidney disease patients on maintenance Dialysis in a selected setting of Madurai district".

With regard to this may I kindly request you to content and validate my tool for its relevancy. I am enclosing the objectives of the study. I would be highly obliged and remain thankful if you could validate and send it as early as possible.

Thanking you

Place: yours faithfully,

Date: XXX

APPENDIX –IV
COPY OF LETTER SEEKING PERMISSION TO CONDUCT RESEARCH

Dr.NALINI JEYAVANTH SANTHA M.Sc(N), Ph.D,   4/235, COLLEGE ROAD,

PRICIPAL,   THASILDAR NAGAR,

SACRED HEART NURSING COLLEGE.   MADURAI – 625020.

 Ref.UT: SHNC: 2017   PHONE: 2534593

To,

Respected Sir/ Madam,

Sub: Sacred Heart Nursing College, Madurai – project work of M.SC (Nursing) student –permission requested- Reg.

       We wish to state that **Ms Arul Malar Femina . S**, Final year M.SC (Nursing) student of our college has to conduct a research project, which is to be submitted to the Tamil Nadu Dr.M.G.R. Medical University, Chennai in partial fulfillment of university requirements.

       The topic of research project is "*A descriptive study to determine the health related quality of life among patients with chronic kidney disease on maintenance dialysis in a selected setting of Madurai district***".**

       We therefore request you to kindly permit him to do the research work in your organization under your valuable guidance and suggestion.

Thanking you,

Yours faithfully,

Principal

SACRED HEART NURSING COLLEGE

APPENDIX – V

LIST OF EXPERTS CONSULTED FOR THE CONTENT VALIDITY OF RESEARCH TOOL

1.Dr.M.Shanmuga Perumal, MD., DM(Nepro)., Consultant Nephrology,

Lee Kidney Care and Multi-Specialty Hospital,

Vanamamalai Nagar, Bypass Road, Madurai.

2.Dr.S. Palani Rajan, DM (Nepro)., Consultant Nephrology,

Sastha Kidney Care Hospital,

Madurai.

3.Dr.Nalini Jeyavantha Santha, M.SC(N).,Ph.D.,

Principal,

Sacred Heart Nursing College, Madurai.

4.Dr.Juliet Sylvia, M.Sc(N).,Ph.D.,

Vice Principal,

Sacred Heart Nursing College, Madurai.

5.Mrs. Sakthi Barathi, M.SC(N)., Professor,

Sacred Heart Nursing College, Madurai.

6.Mrs.Andal, M.SC(N)., Ph.D.,

Professor,

Sacred Heart Nursing College, Madurai.

7.Mrs.Jeya Jothi MSc.,

Department of Medical Surgical Nursing,

C.S.I Jeyaraj Annapackyam College of Nursing,

Madurai- 20

APPENDIX – VI

ABBREVIATION

1. CKD – Chronic Kidney Disease

2. HRQOL – Health Related Quality of Life

3. WHOQOL - World Health Organization Quality of Life Group

4. CVD - Cardiovascular disease

5. QLI-D - Quality of Life Index-D

6. KDQOL-SF - Kidney Disease Quality of Life Short Form

7. KDQ - Kidney Disease Questionnaire

8. RQLP - Renal Quality of Life Profile

9. CHEQ - CHOICE Health Experience Questionnaire

10. QOL - quality of life

11. CRF - Chronic Renal Failure

12. GBD - Global Burden of Disease

13. MDS - Million Deaths Study

14. USRDS - The United States Renal Data System

15. KDIGO - Kidney Disease: Improving Global Outcomes Clinical Practice Guideline for Lipid Management in Chronic Kidney Disease

16. PHC - Physical Health Composite

17. MHC - Mental Health Composite

18. KDCS - kidney disease component summary score

19. PSC – Patient Satisfaction Score

20. CDs - Chronic Diseases

21. WHO - World Health Organisation

22. DM - Diabetes Mellitus

23. ESRD - End-Stage Renal Disease

24. eGFR - estimated Glomerular filtration rate

25. MDRD - Modification of Diet in Renal Disease Equation

26. CG-BSA - Cockcroft-Gault Equation Corrected to the Body Surface Area

27. WHOQOL - World Health Organization Quality of Life assessment

28. PIF - Patient Information Form

29. HD - Hemodialysis

30. PD - Peritoneal dialysis

31. DARU - Diabetes Association Renal Unit

APPENDIX – VII (ENGLISH)

CONSENT FORM

All the details of this study had been explained to me. I am aware that the information collected from me will be used for the purpose of the study. I am also assured that there is no complication in doing and that all the information collected will be highly confidential. Thereby I am willing to participate in this study on my own interest and wish.

Place: **Participant's Signature**

Date:

Researcher's Signature

APPENDIX – VIII

BOWL METHOD

APPENDIX –IX

Demographic Characteristics, Clinical Characteristics and Biochemical Characteristics

S.No	Demographic Variable
1	**Age**
	a) < 50 years
	b) > 50years
2	**Gender**
	a) Male
	b) Female
3	**Education**
	a) Literate
	b) Illiterate
4	**Occupation**
	a) Employed
	b) Unemployed
5	**Income**
	a) < Rs 5000
	b) Rs 5000 – Rs 10,000
	c) > Rs 10,000
6	**Marital Status**
	a) Single
	b) Married
	c) Divorced / Widowed / Separated
7	**Place of Residence**
	a) Rural
	b) Urban

S.No	Clinical Variable
1	**No of medications**
	a) < 5 medications
	b) >5 medications
2	**Received care at a hospital, but came home the same day**
	a) < 4 times
	b) > 4 times
3	**Stay in any hospital overnight or longer (days)**
	a) < 5 days
	b) >5 days
4	**Duration of illness**
	a) < 6 months
	b) 6 months – 1 year
	c) 1 years – 3 years
	d) 3 years – 5 years
	e) > 5 years
5	**Years of illness on Dialysis**
	a) < 3 Years
	b) > 3 years
6	**Cause of CKD (N= 75 for each component)**
	a)Don't Know
	b) Hypertension
	c) Diabetes Mellitus
	d) Polycystic kidney disease
	e) Chronic Glomerulonephritis
	f) Chronic Pyelonephritis
	g) other causes

7	**Comorbid Conditions (N= 75 for each component)**
	a) Hypertension
	b) Diabetes Mellitus
	c) Respiratory Disease
	d) Rheumatologic Disease
	e) Peptic Ulcer
	f) other causes
	Biochemical Variable
1	**Hemoglobin (g/dl)**
2	**Blood Urea (mg/dl)**
3	**Serum Creatinine (mg/dl)**

APPENDIX – X

புள்ளிவிவரம் சார்ந்த தரவு, மருந்துவம் சார்ந்த தரவு, ஆய்வகம் தரவு

எண்	புள்ளிவிவரம் சார்ந்த தரவு
1	உங்கள் வயது
	< 50 வயது
	> 50 வயது
2	பாலினம்
	ஆண்
	பெண்
3	கல்வி நிலை
	படித்தவர்
	படிக்கவில்லை
4	மாதம் வருமானம்
	படித்தவர்
	படிக்கவில்லை
5	மாதம் வருமானம்
	< ரூ5000
	ரூ.5000 – ரூ10,000
	> ரூ 10,000
6	திருமணம் நிலை
	ஒற்றை
	திருமணமானவர்
	விவாகரத்தானவர்/விதவையாக்கப்பட்டவர்
7	வசிக்கும் இடம்
	கிராமம்
	நகரம்

எண்	மருந்துவம் சார்ந்த தரவு
1	எத்தனை மருந்துகளை எடுத்துகெள்ளுகிறிர்கள் < 5 எண்ணிக்கைகளுக்கு குறைவாக >5 எண்ணிக்கைகளுக்கு மேலாக
2	எத்தனை முறை நீங்கள் ஒரு மருத்துவமனையில் சிகிச்சை பெற்று, அதே நாளில் வீட்டுக்கு வந்துள்ளீர்கள் < 4 முறை > 4 முறை
3	கடந்த 6 மாதங்களில் மொத்தம் எத்தனை நாட்கள் முழுவதுமாக மருத்துவமனையில் தங்கி இருந்து சிகிச்சைபெற்றிர்கள் < 5 நாட்கள் >5 நாட்கள்
4	உடல் நல குறைவின் கால அளவு 6 மாதத்திற்க்கும் குறைவாக 6 மாதத்தில் இருந்து 1 வருடம் வரை 1 வருடதில் இருந்து 3 வருடம் வரை 3 வருடதில் இருந்து 5 வருடம் வரை 5 வருடதிற்க்கும் மேலாக
5	இரத்த ஊடு சிகிச்சையின் கால அளவு < 3 வருடங்கள் > 3 வருடங்கள்
6	சிறுநீரக நோயின் காரணிகள் தெரியாது உயர் இரத்த அழுத்தம் நீரிழிவு நோய் பாலிசிஸ்டிக் சிறுநீரக நோய் நாள்பட்ட க்ளோமெலோனெப்ரிடிஸ் நாள்பட்ட சிறுநீரக நுண்குழலழற்சி மற்றவை

7   இருபாதிப்புள்ள நிலைகளானவை

நீரிழிவு நோய்

இதயம் சம்பத்தமான நோய்கள் (மாரடைப்பு, கரோனரி

இதய நோய், உயர் இரத்த அழுத்தம்)

சுவாச நோய்கள் (ஆஸ்துமா, மூச்சுத்திணறல் முதலியன)

ரூமட்டாலாஜிக் (எலும்பு வலி, மூட்டுவலி, முழங்கால்

வலி, முதலியன)

வயிற்று புண்

மற்றவை

ஆய்வகம் தரவு

1   ஹிமோகு"லாபுலின் **(g/dl)**

2   இரத்த யூரியா நைட்ரேட் **(mg/dl)**

3   சீரம் கிரியேட்டினின் **(mg/dl)**

APPENDIX - XI

KIDNEY DISEASE QUALITY OF LIFE SHORT FORM (KDQOL – SF)

YOUR HEALTH

1. In general, would you say your health is:

(circle one number)

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 number)

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 items are about activities you might do during a typical day. **Does your health now limit** you in these activities? If so, how much?

(circle one number on each line)

		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 sports	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 flights of stairs	1	2	3
f.	Bending, Kneeling, or stooping	1	2	3
g.	Walking more than a mile	1	2	3
h.	Walking several blocks or ½ mile	1	2	3
i.	Walking one block or ¼ mile	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 activities **as a result of your physical health**?

(circle one number on Each Line)

		Yes	No
a.	Cut down the **amount of time** you spent on work or other activities?	1	2
b.	**Accomplished less** than you would have liked?	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

5.During the **past 4 weeks**, have you 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 the **amount of time** you spent on work or other activities?	1	2
b.	**Accomplished less** than you would like?	1	2
c.	Didn't do work or other activities **as carefully as usual**?	1	2

6. During **the past 4 weeks**, to what **extent** have your **physical healths or emotional problems** interfered with your normal social activities(like visiting friends, going to movies, spending time on television,etc) with family, friends, neighbours, or groups?

(Circle one number)

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

7.How much **bodily pain** / fatigue have you had during the **past 4 weeks**?

(Circle one number)

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 like cooking, cleaning, caring children etc)?

(Circle one number)

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 closest to the way you have been feeling.

How much of the time during **the past 4 weeks**.......

(Circle one number on Each Line)

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

(Circle one number on Each Line)

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. Please choose the answer that best describe how **True or False** each of the

following statements is for you

(Circle one number on Each Line)

		Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
a.	I seem to get sick a little easier 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

YOUR KIDNEY DISEASE

12. How **True or False** is 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.	My kidney disease interferes too much with my life	1	2	3	4	5
b.	Too much of my time is spent dealing with my kidney disease	1	2	3	4	5
c.	I feel frustrated dealing with my kidney disease	1	2	3	4	5
d.	I feel like a burden on my family	1	2	3	4	5

13. These questions are about how you feel and how things have been going during the **past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling

How much of the time during the **past 4 weeks..**

(Circle one number on Each Line)

		None of the Time	A little of the Time	Some of the Time	A good bit of the Time	Most of the Time	All of the Time
a.	Did you isolate yourself from people around you?	1	2	3	4	5	6
b.	Did you react slowly to things that were said or done?	1	2	3	4	5	6
c.	Did you act irritable toward those around you?	1	2	3	4	5	6
d.	Did you have difficulty concentrating or thinking?	1	2	3	4	5	6
e.	Did you get along well with other people?	1	2	3	4	5	6
f.	Did you become confused?	1	2	3	4	5	6

14.During **the past 4 weeks**, to what extent were you bothered by each of the following?

(Circle one number on Each Line)

		Not at all bothered	Somewhat bothered	Moderately bothered	Very much bothered	Extremely bothered
a.	Soreness in your muscles?	1	2	3	4	5
b.	Chest pain?	1	2	3	4	5
c.	Cramps?	1	2	3	4	5
d.	Itchy skin?	1	2	3	4	5
e.	Dry skin?	1	2	3	4	5
f.	Shortness of breath?	1	2	3	4	5
g.	Faintness or dizziness?	1	2	3	4	5
h.	Lack of appetite?	1	2	3	4	5
i.	Washed out or drained?	1	2	3	4	5
J.	Numbness in hands or feet?	1	2	3	4	5
k.	Nausea or upset stomach?	1	2	3	4	5

14.(Continued) During **the past 4 weeks**, to what extent were you bothered by each of the following?

(Circle one number on Each Line)

		Not at all bothered	Some what bothered	Moderately bothered	Very much bothered	Extremely bothered
Hemodialysis Patient Only						
l.	Problems with your access site?	1	2	3	4	5
Peritoneal Dialysis Patient Only						
m	Problems with your catheter site?	1	2	3	4	5

EFFECTS OF KIDNEY DISEASE ON YOUR DAILY LIFE

15. Some people are bothered by the effects of kidney disease on their daily life, while others are not. How much does kidney disease **bother you** in each of the following areas?

(Circle one number on Each Line)

		Not at all bothered	Some what bothered	Moderately bothered	Very much bothered	Extremely bothered
a.	Fluid restriction?	1	2	3	4	5
b.	Dietary restriction?	1	2	3	4	5
c.	Your ability to work around the house?	1	2	3	4	5
d.	Your ability to travel?	1	2	3	4	5
e.	Being dependent on doctors and other medical staff?	1	2	3	4	5
f.	Stress or worries caused by kidney disease?	1	2	3	4	5
g.	Your sex life?	1	2	3	4	5
h.	Your personal appearance?	1	2	3	4	5

The next three questions are personal and relate to your sexual activity, but your answers are important in understanding how kidney disease impacts on people's lives.

16. Have you had any sexual activity in the **past 4 weeks**?

(Circle one number)

No ------------------------►   1 ⟶ | Please skip to question 17 |

Yes------------------------►   2

⇩

How much of a problem was each of the following in the **past 4 weeks**?

(Circle one number on Each Line)

		Not a problem	A little problem	Somewhat of a problem	Very much a problem	Severe problem
a.	Enjoying sex?	1	2	3	4	5
b.	Becoming sexually aroused?	1	2	3	4	5

For the following question, please rate your sleep using a scale ranging from 0 representing "very bad" to 10 representing "very good".

If you think your sleep is half-way between "very bad" and "very good" please circle 5. If you think your sleep is one level better than 5, circle 6. If you think your sleep is one level worse than 5, circle 4 (and so on).

17. On a scale from 0 to 10, how would you rate your sleep overall?

(Circle one number)

```
|   |   |   |   |   |   |   |   |   |   |   |
0   1   2   3   4   5   6   7   8   9   10
```
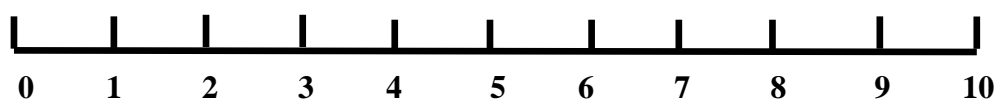
Very Bad   **Very Good**

18. How often during the **past 4 weeks** did you?

(Circle one number on Each Line)

		None of the Time	A little of the Time	Some of the Time	A good bit of the Time	Most of the Time	All of the Time
a.	Awaken during the night and have trouble falling asleep again?	1	2	3	4	5	6
b.	Get amount of sleep you need?	1	2	3	4	5	6
c.	Have trouble staying awake during the day?	1	2	3	4	5	6

19. Concerning your **family and friends**, how satisfied are you with

(Circle one number on Each Line)

		Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
a.	The amount of time you are able to spend with your family and friends?	1	2	3	4
b.	The support you receive from your family and friends?	1	2	3	4

20. During the **past 4 weeks**, did you work at a paying job?

(Circle one number)

Yes ----------------► 1

No ----------------► 2

21. Does your health keep you from working at a paying job?

(Circle one number)

Yes - - - - - - - - - - - - - - - → 1

No - - - - - - - - - - - - - - - → 2

22. Overall, how would you rate your health?

(Circle one number)

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
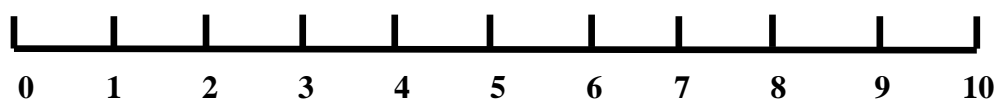
Worst	Half-Way	Best
Possible	between worst	Possible
(as bad or worse	and best	health
than being dead)		

SATISFACTION WITH CARE

23. Think about the care you receive for kidney dialysis. In terms of your satisfaction,

how would you rate the friendliness and interest shown in you as a person?

(Circle one number)

Very poor	1
Poor	2
Fair	3
Good	4
Very good	5
Excellent	6
The best	7

24. How **True or False** is each of the following statements?

(Circle one number on Each Line)

		Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
a.	Dialysis staff encourage me to be as independent as possible	1	2	3	4	5
b.	Dialysis staff support me in coping with my kidney disease	1	2	3	4	5

APPENDIX - XII

உங்கள் உடல் நலம்

சிறுநீரக நோய் வாழ்க்கை தரம்

1) பொதுவாக, நீங்கள் உங்கள் உடல் நலம் பற்றி கூறுங்கள்

(ஒன்றை வட்டமிடுக)

சிறப்பாக உள்ளது	1
மிகவும் நன்று	2
நன்று	3
பரவாயில்லை	4
சரியில்லை	5

2. ஒரு வருடத்திற்கு முன்னர் ஒப்பிடும்போது தற்போதைய உடல் ஆரோக்கியத்தை மதிப்பிடுக.

(ஒன்றை வட்டமிடுக)

ஒரு வருடத்திற்கு முன்பை விட , இப்போது மிகவும் சிறப்பாக உள்ளது	1
ஒரு வருடத்திற்கு முன்பை விட , இப்போது ஓரளவு நலம்	2
ஒரு வருடத்திற்கு முன்பு உள்ளது போல உள்ளது	3
ஒரு வருடத்திற்கு முன்பை விட , ஓரளவு மோசமாக உள்ளது	4
ஒரு வருடத்திற்கு முன்பை விட ,மிகவும் மோசமாக உள்ளது	5

3. நீங்கள் அன்றாட செய்யும் நடவடிக்கைகளை உங்கள் உடல் நிலை ஏற்றுக்கொள்கிறதா அல்லது முரண்படுகிறதா? அப்படியெனில், எவ்வளவு?

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		ஆம், மிகவும் குறைந்துள்ளது	ஆம், சிறிதளவு குறைந்துள்ளது	இல்லை, எதுவும் குறையவில்லை
அ	தீவிர நடவடிக்கைகள், கனமான பொருட்களை தூக்குதல், ஓடுதல், கடுமையான விளையாட்டில் பங்கு கொள்ளுதல்	1	2	3
ஆ	இயல்பான நடவடிக்கைகள், மேசையை தள்ளுதல், தூசகற்றும் கருவி தள்ளுதல்,பந்து வீசுதல்,கோல்ஃப் விளையாடுதல்	1	2	3
இ	மளிகை பொருட்களை சுமந்தல் அல்லது தூக்குதல்	1	2	3
ஈ	பல அடுக்கு மாடிப்படியில் ஏறுதல்	1	2	3
உ	மாடிப்படியில் ஏறுதல்	1	2	3
ஊ	குனிதல், முழங்காலில் நின்றல் அல்லது உட்காருதல்	1	2	3

ஏ	ஒரு மைலுக்கு மேலாக நடைப்பயிற்சி	1	2	3
ஏ	அரை மைலுக்கு மேலாக நடைப்பயிற்சி	1	2	3
ஐ	கால் மைலுக்கு மேலாக நடைப்பயிற்சி	1	2	3
ஒ	குளிதல் அல்லது தானாக உடை மாற்றுதல்	1	2	3

4. கடந்த 4 வாரங்களிள், உங்கள் உடல் நலக்குறைவு காரணமாக உங்கள் வேலையில் அல்லது அன்றாட நடவடிக்கைகளில் கீழ்க்காணும் பிரச்னைகள் ஏதேனும் ஏற்பட்டுள்ளனவா?

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		ஆம்	இல்லை
அ	நீங்கள் வேலைக்கு அல்லது மற்ற நடவடிக்கைகளுக்கு செலவிடும் நேரத்தின் அளவை பாதியாக குறைத்தல்.	1	2
ஆ	உங்கள் வேலைகளை நீங்கள் விரும்பினதை விடக் கடமைகளைக் குறைவாக நிறைவேற்றுதல்	1	2
இ	குறிப்பிட்ட வேலையை அல்லது மற்ற நடவடிக்கைகளைக் குறைத்துக் கொள்ளுதல்	1	2
ஈ	வேலை அல்லது மற்ற நடவடிக்கைகள் செய்ய சிரமப்படுதல் (எடுத்துகாட்டு;ஒரு வேலை செய்ய கூடுதல் முயற்சி எடுத்தல்)	1	2

5. கடந்த 4 வாரங்களின் போது, உங்கள் வேலையில் அல்லது அன்றாட நடவடிக்கைகளில் உணர்வுரீதியான பிரச்சனைகள் அல்லது சிக்கல்கள் உள்ளதா?
(உதாரணமாக; மனச்சோர்வு, கவலை போன்ற உணர்வுகள்)

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		ஆம்	இல்லை
அ	நீங்கள் வேலைக்கு அல்லது மற்ற நடவடிக்கைகளுக்கு செலவிடும் நேரத்தின் அளவை பாதியாக் குறைத்தல்	1	2
ஆ	உங்கள் வேலைகளை நீங்கள் விரும்பினதை விடக் கடமைகளைக் குறைவாக நிறைவேற்றுதல்	1	2
இ	வேலை அல்லது மற்ற நடவடிக்கைகளில் வழக்கம் போல் கவனமாக இல்லை	1	2

6. கடந்த 4 வாரங்களின் போது, எந்தளவிற்கு உங்கள் உடல் நலம் அல்லது உணர்வுரீதியான பிரச்சனைகள் உங்கள் குடும்பம், நண்பர்கள், அண்டை வீட்டார் அல்லது குழுக்கள் ,உங்கள் சாதாரண சமூக நடவடிக்கைகளில் குறுக்கிடுகின்றன?

(ஒன்றை வட்டமிடுக)

இல்லவே இல்லை	1
ஓரளவுக்கு	2
மிதமான	3
சிறிதளவு	4
மிகவும் அதிகம்	5

7. கடந்த 4 வாரங்களில், எவ்வளவு உடல் வலி உங்களுக்கு இருந்தது?

(ஒன்றை வட்டமிடுக)

இல்லவே இல்லை	1
கொஞ்சம்	2
மிதமான	3
சிறிதளவு	4
அதிகமாக	5
மிக அதிகமாக	6

8. கடந்த 4 வாரங்களில், எவ்வளவு உடல் வலி உங்கள் சாதாரண வேலையில் இடையூறு செய்தது (வீட்டிலும், வெளியிலும் உள்ள வேலை உட்பட)?

(ஒன்றை வட்டமிடுக)

இல்லவே இல்லை	1
கொஞ்சம்	2
மிதமான	3
சிறிதளவு	4
மிக அதிகமாக	5

9. இந்த கேள்விகள், நீங்கள் எந்த அளவுக்கு உங்கள் உடல் நிலை இருந்தது என்பதை பற்றியதாகும்.

ஒவ்வொரு கேள்விக்கும், நீங்கள் தரும் பதில் உங்களது உணர்வுக்கு அருகில் வரும் பதிலாக இருக்கலாம்.

நீங்கள் எவ்வளவு நேரம் கடந்த 4 வாரங்களின் போது....

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		அனைத்து நேரமும்	பெரும்பா-லான நேரம்	ஒரு குறிப்பிட்ட நேரம்	சில நேரம்	ஒரு சிறிய நேரம்	ஒரு போதும் இல்லை
அ	நீங்கள் தெம்பு மற்றும் ஆற்றல் நிறைந்தவ-ராக உணர்ந்திருக்கிறீர்களா?	1	2	3	4	5	6
ஆ	நீங்கள் மிகவும் பதட்டமான நபரா?	1	2	3	4	5	6
இ	ஒன்றும் இயலாது என்று உணர்ந்து, எதுவும் உங்களை சந்தோஷப்படுத்த முடியாது என்று உணர்ந்திருக்கிறீர்களா?	1	2	3	4	5	6
ஈ	நீங்கள் அமைதியை உணர்ந்திருக்கிறீர்களா?	1	2	3	4	5	6
உ	உங்களுக்கு நிறைய ஆற்றல் மற்றும் வலிமை உள்ளதா?	1	2	3	4	5	6
ஊ	நீங்கள் சோர்வுற்றவராகவும், மனமுடைந்தும் உணர்ந்திருக்கிறீர்களா?	1	2	3	4	5	6
எ	நீங்கள் தோய்ந்து போனதாக உணர்ந்திருக்கிறீர்களா?	1	2	3	4	5	6
ஏ	நீங்கள் ஒரு மகிழ்ச்சியான நபராக இருந்திருக்கிறீர்களா?	1	2	3	4	5	6
ஐ	நீங்கள் களைப்பாக உணர்ந்திருக்கிறீர்களா?	1	2	3	4	5	6

10. கடந்த 4 வாரங்களின் போது, எவ்வளவு நேரம் உங்கள் உடல் நிலை அல்லது உணர்ச்சிரீதியான பிரச்சனைகள் உங்கள் நடவடிக்கைகளில் குறுக்கிட்டன?

(ஒன்றை வட்டமிடுக)

அனைத்து நேரமும்	1
பெரும்பாலான நேரம்	2
சில நேரம்	3
ஒரு சில நேரம்	4
ஒரு போதும் இல்லை	5

11. சிறந்த பதில் தேர்வு செய்து விவரிக்க, பின்வரும் கூற்றுகள் ஒவ்வொன்றுக்கும், எவ்வளவு சரி அல்லது தவறு என்று கூறுக.

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		நிச்சயமான உண்மை	பெருபாலும் உண்மை	தெரியாது	மிகத் தவறு	நிச்சயமாகத் தவறு
அ	எனக்கு மற்ற மக்களை விட எளிதாக உடலில் நோய் தொற்று பெறுவது போல் தெரிகிறது	1	2	3	4	5
ஆ	நான் எல்லாரையும் போல் ஆரோக்கியமாக இருக்கிறேன்	1	2	3	4	5
இ	என் உடல் நிலை மோசமாகும் என்று எதிர்பார்க்கிறேன்	1	2	3	4	5
ஈ	என் உடல் நிலை மிக சிறப்பாக உள்ளது	1	2	3	4	5

உங்கள் சிறுநீரக நோய்

12. பின்வரும் கூற்றுகள் ஒவ்வொன்றுக்கும் சரி அல்லது தவறு என்று கூறுக.

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		நிச்சயமான உண்மை	பெருபாலும் உண்மை	தெரியாது	மிகத் தவறு	நிச்சயமாகத் தவறு
அ	என் சிறுநீரக நோய் என் வாழ்க்கையில் அதிகமாக தலையிடுகிறது	1	2	3	4	5
ஆ	என் நேரம் அதிகமாக என் சிறுநீரக நோயை கையாள்வதில் செலவழிக்கப்படுகிறது	1	2	3	4	5
இ	நான் என் சிறுநீரக நோயை கையாள்வதில் விரக்தியடைகிறேன்	1	2	3	4	5
ஈ	நான் என் குடும்பத்தின் மீது ஒரு சுமை போல உணர்கிறேன்	1	2	3	4	5

13. கடந்த 4 வாரங்களின் போது, உங்களின் நடவடிக்கைகள் எப்படி போய்க் கொண்டிருந்தது என்று கூறி, ஒவ்வொரு கேள்விக்கும் உங்களின் உணர்வுக்கு மிக அருகில் தோன்றும் ஒரு பதில் கொடுக்கவும்.

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		நேரம் இல்லை	ஒரு சிறிய நேரம்	சில நேரம்	ஒரு குறிப்பிட்ட நேரம்	பெரும்பாலான நேரம்	அனைத்து நேரமும்
அ	நீங்கள் சுற்றி உள்ள மக்களிடம் இருந்து உங்களை தனிமைப்படுத்தியதுன்டா?	1	2	3	4	5	6
ஆ	பிறரின் சொல்லுக்கு மிக மெதுவாக இசைந்தீர்களா?	1	2	3	4	5	6
இ	நீங்கள் சுற்றியுள்ளவர்களிடம் எரிச்சலோடு நடந்து கொண்டதுன்டா?	1	2	3	4	5	6
ஈ	கவனம் செலுத்த அல்லது யோசிக்க உங்களுக்கு சிரமம் இருந்ததா?	1	2	3	4	5	6
உ	நீங்கள் நல்லமுறையில் மற்ற மக்களுடன் சேர்ந்து ஒத்துப்போக முடிந்ததா?	1 (0)	2 (20)	3 (40)	4 (60)	5 (80)	6 (100)
ஊ	நீங்கள் குழப்பமடைந்ததுன்டா?	1	2	3	4	5	6

14. கடந்த 4 வாரங்களின் போது, எந்த அளவிற்கு நீங்கள் பின்வருவனவற்றால் கவலைப்பட்டீர்கள்?

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		கவலைப்படவில்லை	சில சமயம் கவலைப்பட்டேன்	மிதமான கவலை	மிகவும் கவலைப்பட்டேன்	மிக மிகவும் கவலைப்பட்டேன்
அ	தசை இரணம் ?	1	2	3	4	5
ஆ	நெஞ்சு வலி ?	1	2	3	4	5
இ	பிடிப்புகள் ?	1	2	3	4	5
ஈ	நமைச்சல் /அரிப்பு	1	2	3	4	5
உ	உலர்ந்த சருமம் ?	1	2	3	4	5
ஊ	மூச்சுத் திணறல் ?	1	2	3	4	5
எ	மயக்கம் அல்லது தலைச்சுற்றல் ?	1	2	3	4	5
ஏ	பசியின்மை ?	1	2	3	4	5
ஐ	சோர்வு ?	1	2	3	4	5
ஒ	கைகள் அல்லது கால்கள் உணர்வின்மை?	1	2	3	4	5
ஓ	குமட்டல் அல்லது வயிற்றுக்கோளாறுகள்?	1	2	3	4	5

14. (தொடர்ச்சி) கடந்த 4 வாரங்களின் போது, எந்த அளவிற்கு நீங்கள் பின்வருவனவற்றால் கவலைப்பட்டீர்கள்?

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		கவலைப்படவில்லை	சில சமயம் கவலைப்பட்டேன்	மிதமான கவலை	மிகவும் கவலைப்பட்டேன்	மிக மிகவும் கவலைப்பட்டேன்
இரத்த ஊடு நோயாளி மட்டும்						
ஔ	உங்கள் இரத்த ஊடு அணுகுதல் இடத்தில் சிக்கல் உள்ளதா?	1	2	3	4	5
வயிற்று உள்ளுறை கூழ்மப்பிரிவு நோயாளிகள் மட்டும்						
ஃ	உங்கள் உள்ளுறை வடிகுழாய் இடத்தில் பிரச்சனை உள்ளதா?	1	2	3	4	5

உங்கள் தினசரி வாழ்வில் சிறுநீரக நோயால் உள்ள விளைவுகள்

15. சில மக்களுக்கு, தங்கள் அன்றாட வாழ்க்கையில் சிறுநீரக நோயின் பாதிப்புகளால் ஏற்படும் விளைவுகள், உங்களுக்கு எந்த அளவுக்குக் கவலை ஏற்ப்படுத்தியுள்ளது?
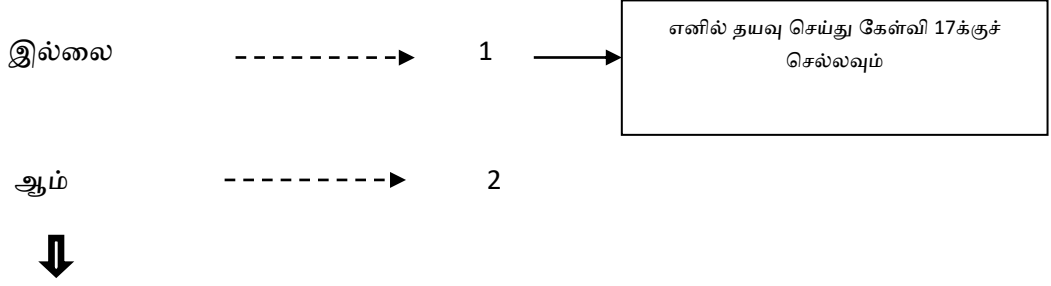
(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		கவலைப் படவில் லை	சில சமயம் கவலைப்பட் டேன்	மிதமான கவலை	மிகவும் கவலைப்ப ட்டேன்	மிக மிகவும் கவலைப்ப ட்டேன்
அ	திரவ கட்டுப்பாடு?	1	2	3	4	5
ஆ	உணவுக் கட்டுப்பாடு?	1	2	3	4	5
இ	வீட்டு வேலை செய்யும் உங்கள் திறன்?	1	2	3	4	5
ஈ	பயணம் செய்யும் திறன்?	1	2	3	4	5
உ	மருத்துவர் மற்றும் மருத்துவ ஊழியர்களை சார்ந்து இருப்பது?	1	2	3	4	5
ஊ	சிறுநீரக நோயால் ஏற்படுகிற மன அழுத்தம்?	1	2	3	4	5
எ	உங்கள் பாலியல் வாழ்க்கை?	1	2	3	4	5
ஏ	உங்கள் தனிப்பட்ட தோற்றம்?	1	2	3	4	5

அடுத்த மூன்று கேள்விகள், தனிப்பட்ட மற்றும் உங்கள் பாலியல் நடவடிக்கைகளில் தொடர்பானவை. ஆனால்,உங்கள் பதில்கள் முக்கியமானவை ஏனெனில் சிறுநீரக நோயால் பாதிக்கப்படும் மக்களின் வாழ்க்கையை அறிய உங்கள் பதில்கள் உதவும்.

16. கடந்த 4 வாரங்களின் போது, ஏதேனும் பாலியல் தொடர்பு இருந்ததா?

(ஒன்றை வட்டமிடுக)

இல்லை - - - - - - - - ➤ 1 → | எனில் தயவு செய்து கேள்வி 17க்குச் செல்லவும் |

ஆம் - - - - - - - - ➤ 2

⇓

பின்வரும் பகுதியில், கடந்த 4 வாரங்களில் எப்படி ஒவ்வொரு பிரச்சனையும் இருந்தது?

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		ஒரு பிரச்சனையும் இல்லை	சிறிய பிரச்சனை இருந்தது	ஓரளவு பிரச்சனை இருந்தது	மிகவும் பிரச்சனை இருந்தது	கடுமையான பிரச்சனை
அ	பாலியல் வாழ்க்கை மகிழ்ச்சியாக இருந்ததா?	1	2	3	4	5
ஆ	பாலியல் தூண்டுதல் வருகிறதா?	1	2	3	4	5

பின்வரும் கேள்விக்கு, உங்கள் தூக்கத்தின் அளவை மதிப்பிடுக, 10 "மிகவும் மோசம்" என்றும்,0"மிகவும் அருமை" என்றும் வரையிலான ஒரு அளவு பயன்படுத்தி.
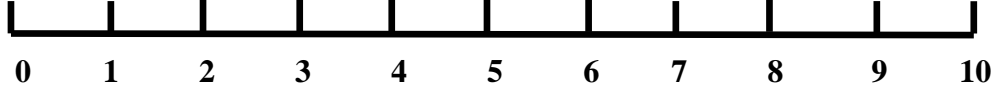
நீங்கள் உங்கள் தூக்கத்தை மிகவும் மோசம் மற்றும் மிகவும் அருமை ஆகிய இரண்டுக்கும் இடையே நடுநிலை என்று நினைத்தால் தயவு செய்து 5ஐ வட்டமிடுக.

நீங்கள் உங்கள் தூக்கத்தை 5க்கு மேற்பட்ட நிலையில் நல்லது என்று நினைத்தால் 6ஐ வட்டமிடுக.

நீங்கள் உங்கள் தூக்கத்தை 5க்கு கீழ் நிலையில் மோசமாக உள்ளது என்று நினைத்தால் 4ஐ வட்டமிடுக (மற்றும் பல).

17. 0 முதல் 10 வரை என்ற அளவில், எப்படி நீங்கள் உங்கள் தூக்கத்தின் அளவை மதிப்பிடுவீர்கள்? (ans*10)

(ஒரு எண்ணை வட்டமிடுக)

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

மிகவும் மோசம்   மிகவும் அருமை

18. கடந்த 4 வாரங்களின் போது,நீங்கள் அடிக்கடி செய்தது........

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		நேரம் எதுவும் இல்லை	ஒரு சிறிய நேரம்	சில நேரம்	ஒரு குறிப்பிட்ட நேரம்	பெரும்பாலான நேரம்	அனைத்து நேரமும்
அ	இரவில் விழித்தபின்பு மீண்டும் உறங்குவதில் தொந்தரவு உண்டா?	1	2	3	4	5	6
ஆ	உங்களுக்கு தேவையான அளவு தூக்கம் கிடைக்கின்றதா?	1	2	3	4	5	6
இ	காலையில் விழித்திருப்பதில் பிரச்சனை இருகின்றதா?	1	2	3	4	5	6

19. உங்கள் குடும்பத்தினர் மற்றும் நண்பர்களை குறித்து எவ்வளவு திருப்தியாக உணர்கிறீர்கள்.......

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		மிகவும் அதிருப்தி (0)	ஓரளவு அதிருப்தி (33.33)	ஓரளவு திருப்தி (66.66)	மிகவும் திருப்தி (100)
அ	நீங்கள் உங்கள் குடும்பத்தினர் மற்றும் நண்பர்களுடன் செலவழிக்கும் நேரம்....	1	2	3	4
ஆ	நீங்கள் உங்கள் குடும்பத்தினர் மற்றும் நண்பர்களிடமிருந்து பெறும் ஆதரவு...	1	2	3	4

20. கடந்த 4 வாரங்களின் போது, நீங்கள் வருமானம் ஈட்டும் தொழில் செய்தீற்களா?

(ஒன்றை வட்டமிடுக)

ஆம்   - - - - - - - - ►   1(100)

இல்லை   - - - - - - - - ►   2(0)

21. உங்களின் உடல் நலக்குறைவினால், வருமானம் கிடைக்கும் உங்களது தொழில் பாதிக்கப்படுகிறதா?
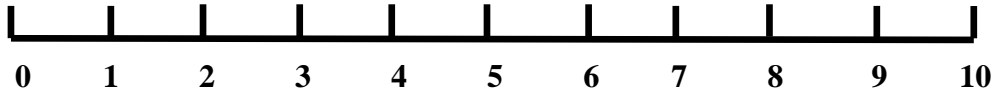
(ஒன்றை வட்டமிடுக)

ஆம்   - - - - - - - ►   1(0)

இல்லை   - - - - - - - ►   2(100)

22. ஒட்டுமொத்தமாக, எப்படி நீங்கள் உங்கள் உடல் நலதை/உங்கள் சுகாரதாரத்தை மதிப்பிடுவீர்கள்?(ans*10)

(ஒன்றை வட்டமிடுக)

```
|   |   |   |   |   |   |   |   |   |   |   |
0   1   2   3   4   5   6   7   8   9   10
```

மிகவும் மோசமாக   சிறந்த மற்றும்   சிறந்த
(மரணம் போல   மோசமான ஆகிய   சாத்தியம்மான
இருப்பதை விட   இரண்டுக்கும்   உடல் நிலை
மோசம்)   இடையே
                                 (நடுநிலை)

பராமரிப் பின் திருப்தி

23. நீங்கள் டயாலிஸ் பராமரிப்பை பற்றி நோக்குகையில், பிறர் உங்களிடம் எவ்வளவு நேசம் மற்றும் ஆர்வம் காட்டுகின்றனர் என்பதை மதிப்பிடுக.

(ஒன்றை வட்டமிடுக)

மிகவும் மோசம்/குறைவு	1
மோசம்	2
இபரவாயில்லை	3
நன்று	4
மிகவும் நன்று	5
சிறப்பாக உள்ளது	6
மிகவும் சிறப்பாக உள்ளது	7

24. பின்வரும் கூற்றுகள் ஒவ்வொன்றும் எந்த அளவு சரி அல்லது தவறு என்று கூறுக

(ஒவ்வொரு வரியிலும் ஒன்றை வட்டமிடுக)

		நிச்சயமான உண்மை (100)	பெரும்பாலும் உண்மை (75)	தெரியாது (50)	மிகத் தவறு (25)	நிச்சயமாக தவறு (0)
அ	நான் என்னால் முடிந்தவரை சுதந்திரமாக இருக்க டயாலிசிஸ் ஊழியர்கள் என்னை ஊக்குவிக்கிறார்கள்	1	2	3	4	5
ஆ	என் சிறுநீரக நோயில் டயாலிசிஸ் ஊழியர்கள் எனக்கு துணைநிற்கிறார்கள்.	1	2	3	4	5