Research Article

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Effect of depression on level of compliance with haemodialysis among chronic kidney disease patients at Moi Teaching and Referral Hospital, Kenya

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Abstract
This study aimed to examine psychological factors influence on haemodialysis compliance by chronic kidney disease patients at Moi Teaching and Referral Hospital, Eldoret. The goal of the study was to find out whether psychological factors which includes depression affected the patients' levels of compliance to haemodialysis. The study was guided by the principles of Reality therapy. Cross-sectional research design was used for the study. Simple random sampling was used to select a sample for the study where Slovin's method was used to select a sample of 133 patients to take part in the study. Questionnaires were used to collect data from the patients. Content validity through consultation with experts in the field of psychology and construct validity through extensive literature review to validate the statistics collection instruments. Data collected was analysed using descriptive and inferential statistics. Descriptive statistics were evaluated in form of frequencies, percentages and averages while inferential statistics Chi-square tests for significance was used. The significance level used was $p<0.05$. The study established that there was no association between level of depression (X2 (30) =30.498, P=0.440 and level of compliance to haemodialysis among chronic kidney disease patients at MTRH. The study concluded that there was no significant association between psychological factors and level of compliance to haemodialysis among chronic kidney disease patients at MTRH. The researcher recommended continuous monitoring of patients' levels of depression so as to offer counselling and psychiatric help to the patients which will enhance their mental wellbeing.

Keywords: Counselling, Chronic kidney disease, Depression, Haemodialysis

1.0 Introduction

Chronic kidney disease (CKD) is a condition where kidneys have no capacity to eliminate toxic compounds from the body, chronic kidney disease (CKD) is an instance of renal failure that worsens with time and is irreversible. The most prevalent causes of this syndrome include diabetes, high blood pressure, glomerulonephritis, and polycystic kidney disease (Ahlawat, D'Cruz & Tiwari, 2016). Treatment for chronic renal disease aims to reduce the progression of kidney damage. Haemodialysis is the standard treatment for chronic renal disease (Al-Sabbah, Basheer, Lu & Younis, 2019).

The treatment for Chronic Kidney Disease (CKD) is varied and extensive, but it can be difficult to understand for patients. Patients with chronic kidney disease need a combination of dialysis, medication, fluid restriction, and a healthy diet in order to be well cared for. The progression and problems of Chronic Kidney Disease can be slowed with the use of a complete dialysis plan, medication, fluid, and dietary restriction. Despite this, research has shown that many people with chronic kidney disease do not adhere to medically recommended treatment plans, including dialysis, medication, nutrition, and hydration intake (Griva, Lai, Lim, Zhenli, & Foo, 2014). According to research (Abo, Mohga, & Mohamed, 2015), patients who strictly adhere to their treatment plans enjoy the longest periods of health and wellbeing. It is essential that haemodialysis patients follow their doctors' orders and receive their prescribed treatments. Unfortunately, poor haemodialysis patient compliance is a widespread issue in health care with significant medical, social, and economic consequences, especially for haemodialysis patients (Mersal, Salah, & Deen, 2016).

According to the World Health Organization, compliance is achieved through actions like taking medication as directed, maintaining a healthy lifestyle, and according to the advice of health care providers (WHO, 2003). In this study, level of compliance to haemodialysis sessions among CKD patients at Moi Teaching and Referral Hospital was investigated. According to Naghavi and colleques, noncompliance with therapy is defined as the patient's lack of involvement in, or inattention or failure to follow the prescribed the treatment process by the patient (Naghavi, Mehrolhassani, Nakhaee, & Yazdi-Feyzabadi, 2019). Non-compliance to therapy includes not taking medication, not changing lifestyle or food, frequently changing the treatment process, and not following or defectively performing tests for diagnosis, imaging, radiography, etc. (Atinga, Yarney, & Gavu, 2018).To lessen the paternalistic nature of the term compliance, the meaning of adherence was introduced. Adherence is defined in a way that involves compliance, which tends to influence the patient for agreement (Chakrabarti, 2014).

Patients with chronic kidney disease who are receiving haemodialysis were considered non-compliant if they missed more than 25% of their monthly haemodialysis sessions. Patients who are not complying with their haemodialysis treatments show this by not getting their required number of treatments each month. Chronic Kidney Disease compliance questionnaires were used to assess patients in this setting for adherence to regular haemodialysis treatments.

Noncompliance is the leading cause of death for those with chronic kidney disease, and failure to receive appropriate dialysis can lead to death from fluid and waste product buildup in the body. The Global Impact of Disease Study found that between 1990 and 2010, the death rate from chronic kidney disease increased from 15.7 per 100,000 people worldwide to 16.3 per 100,000 people (Lozano, Naghavi, & Foreman, 2012).

According to published research, over half of those with chronic renal disease who were receiving haemodialysis was not following their treatment plan. According to research by Ibrahim, Hossam, and Belal (2015), between 7 and 32 percent of ESRD patients did not adhere to their treatment plans by missing scheduled haemodialysis treatments. More than half of patients in a study of Zimbabweans did not follow the recommended haemodialysis schedule. In fact, 61 percent of respondents reported missing most or all of their haemodialysis appointments. Seven percent of patients have completed all haemodialysis treatments as planned. Sixty-seven percent of those who needed haemodialysis had postponed treatment more than once due to scheduling conflicts (Chironda, 2014).

Upton (2013) defines psychological elements as "processes and meanings at the individual level that influence one's mental states." Individual differences in cognitive ability can be attributed to a wide range of

psychological factors. Phobia is an example of a psychological issue that can severely constrain one's ability to think and act. When a general medical condition is negatively impacted by psychological or behavioural factors, which may worsen the medical condition, hinder with treatment, or cause morbidity and mortality, a disorder is diagnosed according to DSM 5, as psychological factors which influence other medical conditions (American Psychiatric Association, 2013). Psychological, behavioural, social, and environmental factors, such as employment, poverty, relationships, and neighbourhood, may all have a role in the development of virtually every medical ailment (Graves & Muskin, 2019). Despite the fact that the cited studies did not cover the factors in the current study, the researcher looked into psychological factors such as depression, anxiety, and hopelessness.

The impact of depression on haemodialysis compliance was measured in this study which was conducted at Moi Teaching and Referral Hospital for people with chronic kidney disease. Depression is a serious mental disorder that has a profound impact on a person's emotions, thoughts, and behaviour. Sadness and a lack of interest in once-enjoyed activities characterise depression. It can cause a wide range of negative feelings and physical symptoms, reducing a person's productivity at work and at home. Persistent negative thoughts and feelings, loss of interest in certain activities that used to be beneficial or fun, lack of motivation and energy, isolation from others, alterations to sleep patterns, a rise or fall in appetite, poor concentration, and so on are all symptoms of depression, according to the Diagnostic and Statistical Manual, volume 5. For an evaluation of depression, the symptoms must have persisted for at least two weeks (American Psychiatric Association, 2013). In this study, depression refers to a situation in which a chronic kidney disease patient is unhappy and emotionally low. It has the potential to influence one's cognition, emotion, behaviour, and motivation, all of which have a bearing on one's haemodialysis compliance. Symptoms include a loss of focus, an increase or reduction in appetite, trouble sleeping or oversleeping, thoughts of suicide, loss of interest in previously enjoyable hobbies, and isolation. The majority of people's daily stresses are easily handled by the human body. Both chronic kidney failure and advanced kidney disease place significant additional strain on the body. Financial concerns, inability to work due to dialysis, food restrictions, other treatment rules, and the sickness itself can all create extra pressure. Kidney patients have a substantially higher risk of depression than the overall population due to these additional responsibilities, and they require appropriate coping methods to deal with these stresses.

According to reports, depression is the most frequent psychiatric disorder among those undergoing chronic haemodialysis, and it is the second most common comorbid condition among these people after hypertension. Several studies have found that depression increases mortality and morbidity in people with Chronic Kidney Disease and End Stage Renal Disease (Fan, Samak, & Tighiouort, 2014).

Decreased adherence to fluid restriction, nutrition plan, and medication adherence has all been linked to depression (Palmer, Vecchio, & Graig, 2014). According to Khalil and colleagues, individuals with depression report stronger emotions of despair, which can decrease cognitive capacities and the ability to follow haemodialysis associated regimens (Khalil, Frazier, Lennie, & Sawaya, 2011). Depression is linked to worse health outcomes for those with CKD, such as an increased risk of AKI, CKD progression, and coronary artery disease (Shirazian, Grant, & Aina, 2017).

Neuropsychiatric disorders, such as memory loss, anxiety, and depression, are quite common among patients, as evidenced by numerous studies (Bugnicourt, Godefroy, Chilon, Chouroun, and Massy, 2013; Miranda, Cordeiro, Dos Santos, Ferreira, and Simoes, 2017). Dialysis initiation and increased mortality risk are both strongly associated with pre-existing depression. Hospitalisation and mortality from cardiovascular disease are more likely among those with higher rates of depression to begin with (Fischer, Kimmel, Greene, Gassman, Wang, & Brooks 2011).

Dialysis patients who suffer from depression are more likely to experience treatment discontinuation, re-admission, and extended hospital stays, as well as have a reduced chance of survival overall (Chilcot, Davenport, Wellsted, Firth, & Farrington, 2011). Despite the high rates of depressive symptoms in patients on haemodialysis, which range from 25%-50% (Naalweh, Barakat, Sweiler, & Al-Jabi, 2017), studies that consider adherence to treatment in connection with emotional disorders are limited.

Depression and anxiety are two different mental states. Patients with depression often exhibit the

following psychological symptoms: they worry about the future, feel worthless, believe that nothing is worth attempting, and even consider suicide since they feel like a burden to others around them. Anxious people tend to avoid circumstances that can trigger their illness, worry excessively about both the present and the future, have racing thoughts about their anxiety, and

The prevalence of chronic kidney disease is steadily increasing, making it a major public health concern around the world. Roughly 850 million people around the world are afflicted. According to a 2016 study by Hill, Fatoba, Oke, Hirst, O'Callaghan, and Lasserson, this accounts for between 11% and 13% of the world's total population. According to the Global Burden of Disease 2015 study (Wang, Naghavi, Allen, Barber, Bhutta, & Carter, 2016), the number of deaths attributed to renal failure increased by 32% between 2005 and 2015. Without access to dialysis, between 2.3 and 7.1 million persons with end stage renal disease passed away worldwide in 2010. Acute kidney damage is also a leading cause of death worldwide, affecting an estimated 1.7 million individuals annually (Liyanage, Ninomiya, Jha, Neal, Patrice, Okpechi, 2015). Therefore, it is predicted that between 5 and 10 million people worldwide succumb to renal disease every year. Considering the scarcity of epidemiological data, widespread ignorance, and frequent absence of adequate laboratory services, these estimates likely understate the full cost of kidney disease.

An estimated 16% of the population in Sub-Saharan Africa has been impacted, up from 14% in 2014 (Stanifer, Jing, Tolan, Helmke, Mukerjee, Naicker, 2014) (Hodel, Hamad, Praehauser, Mwangoka, Kasella & Reither, 2018). Eastern Africa also has a high prevalence of chronic kidney disease at, the rate is at 14% (Kaze, Ilori, Jaar, & Echouffo-Tcheugui, 2018). Over 2.4 million people die every year from kidney disease, making it the sixth leading cause of death worldwide.

According to the Rwanda Demographic Health Survey, 84% of Rwanda's estimated population of 11,274,221 in 2015 resided in rural areas. It is also clear that there is almost no data on the prevalence of chronic kidney disease or the need for renal replacement treatment in Rwanda. Based on population data, it appears that urban regions in Rwanda are where the majority of haemodialysis services are located. Rwanda has four dialysis centres, three of which are located in Kigali's urban core and one in the more rural southern province. Igiraneza, Ndayishimiye, Nkeshimana, Dusabejambo and Ogbuagu (2018) reports that amongst the three dialysis centres in Kigali's town and the six in the southern province, there are around twenty operational machines. As a result, most people with end-stage renal illness have to travel to urban dialysis centres, despite the fact that it is more convenient for them to receive treatment closer to home. Both personal experiences and real practise in Rwandan renal institutions indicate that patients with end-stage kidney disease have a low rate of compliance to haemodialysis. Furthermore, there are few researches on the topic of haemodialysis adherence among people with end-stage renal illness in Rwanda. Despite this, kidney disorders were the fourteenth major cause of mortality among the fifty leading causes of death in Rwanda in 2014.

The significant risk factors for Chronic Kidney Disease in Kenya can be attributed in part to the country's lifestyle and population dynamics. Hypertension, diabetes, and metabolic syndrome are on the rise due to changes in lifestyle in both urban and rural areas (Sigamani, 2012). There are a total of 214 dialysis units in Kenya, with 54 located in government facilities, 143 in private hospitals, and 27 in religious institutions. According to the Kenya Renal Association's unpublished data from the year 2021, there are currently 5,670 people in the country receiving haemodialysis treatment. Patients with chronic kidney disease have access to haemodialysis at Moi Teaching and Referral Hospital 2-3 times per week, where a multi-disciplinary team provides a variety of therapies. Moi Teaching and referral Hospital has the largest Haemodialysis unit offering both adult and pediatric dialysis. It also has dedicated haemodialysis machines for Hepatitis B patients who cannot get the service at their preferred facility. It is the only government-run clinic in the whole North Rift and Western areas of Kenya that provide weekly kidney transplant services (Ndanyi, 2022).

1.1 Depression and level of compliance to haemodialysis among chronic kidney disease patients

A study was conducted on the Role of Depression and Non-Adherence, by Rosenthal, Halen, and Cukor, 2012. One hundred and thirty haemodialysis patients from a large urban hospital in North America were assessed for depression and followed for as long as five years. A modest but significant association between depression

and death was found (relative risk = 1.05, 95% CI 1.01 - 1.08). Subjects with more severe depression died substantially sooner than those with less severe depression (beta =.452, p =.044). Self-reported adherence to medication was similarly predictive of mortality in a subset of 85 participants, with higher rates of failure to adhere being linked with an increased mortality risk. As a result, researchers in Kenya had more freedom to investigate whether or not there is a connection between depression and haemodialysis compliance, and this study found that both compliant and non-compliant patients have higher rates of depression.

The purpose of Ahlawat, Tiwari, and Cruz's (2016) study on the prevalence and determinants of medication non-adherence in patients with chronic renal disease was to examine these phenomena. They enrolled a total of 150 participants in their trial. High drug adherence was seen in only 22% of individuals. Overall, 55% of patients were classified as having low adherence and 23% as having medium adherence. Patients with varying stages of chronic renal disease, gender, BMI categories, haemodialysis status, comorbidities, treatment funding, and socioeconomic position were shown to have significantly different rates of medication adherence. The greatest amounts of non-adherence were recorded for antihypertensive drugs, and forgetfulness was shown to be the most common cause of non-adherence. Medication adherence was found to be significantly impacted by factors like pill burden, age, literacy, reimbursement, and medication by carers. This study's findings opened the door for future research into the correlation between depression and adherence to treatment in Kenya. Patients with chronic renal illness at a public tertiary care hospital in India were surveyed for Ahlawat, Tiwari, and D Cruz's (2018) study on the incidence of depressive disorders and the associated variables. A cross-sectional study was carried out in a renal clinic at a tertiary care hospital in Chandigarh between September 2014 and April 2016. A total of 44.1 percent of the 612 patients surveyed were classified as depressed. The severity of the illness, the presence of many comorbidities, the fear of mortality, and financial difficulties, job loss, and lost salary and time spent with family were all factors connected to depression. Similar studies are needed to better understand the significant rate of despair among patients with chronic kidney disease treated at Moi teaching and Referral Hospital in Kenya.

With the goal of identifying the frequency and risk factors for depression in the haemodialysis population, Khan, Khan, Adnan, Suleiman, and Mushtaq (2019) conducted a study in Malaysia. At the first appointment, 220 patients filled out the survey; 216 did so at the second; and 1,313 did so at the third and final appointment. Patients with depression increased from 157 (71.3%) at baseline to 169 (78.1%) at the second evaluation to 181 (84.9%) at the final appointment. According to the results of this study, the incidence of depression among haemodialysis patients increased with time. As a result, there is a pressing need for additional research, namely a study of depression's effects on patients undergoing haemodialysis for Chronic Kidney Disease at Moi Teaching and Referral Hospital.

Farrokhi, Abedi, and Beyene (2014) reviewed 31 research on the topic of depression and mortality in patients with ESRD who were receiving long-term dialysis. Only haemodialysis patients were included in 18 research, peritoneal dialysis patients were the focus of 4 studies, and patients from both modalities were included in 9 studies. Independent of all confounding factors, the authors observed that dialysis patients with depressed symptoms had a mortality risk 1.5 times higher. They also discovered that the correlation between depression and death increased in proportion to the severity of the condition. Medical outcomes may also be negatively impacted by the behavioural implications of depression. Depression has been linked to poor medication adherence, poor food choices, and missed dialysis treatments in individuals with End Stage Renal Disease (Weisbord, 2014). Depressive symptoms were found to be a significant independent predictor of lower adherence to medication in a study involving 65 haemodialysis patients and 94 kidney transplant patients (Cukor, Rosenthal, & Jindal, 2009). Therefore, if a comparable study is conducted in Kenya, more research is required.

Psychosocial determinants of non-adherence to medical therapy in maintenance dialysis patients were investigated by Alosaimi, Asiri, Alsuwayt, Murgen, Almufarrih, and Almodameg (2016). The researchers set out to determine how characteristics including cognitive impairment, sadness, and anxiety affected patients' willingness to follow guidelines for managing end-stage renal disease. A longitudinal investigation was carried out during the years of 2014 and 2015. It was simple to recruit chronic dialysis patients from four of Riyadh's

largest treatment centres. A total of 234 patients (147 males and 87 females) were evaluated, and 45 (19.2%) were found to be non-adherent due to a VAS score of less than 8. Scores of 26 on the Montreal Cognitive Assessment indicated cognitive impairment in 74% of the patients, 10% on the Patient Health Questionnaire indicated depression, and 13% on the Hospital Depression and Anxiety Scale indicated anxiety in 13%. Non-adherence was significantly associated with sadness and anxiety (p0.001 for both), but not with cognitive deterioration (p=0.266). Kenya needs a similar study to see if we experience the same results as Saudi Arabia.

Tchape, Tchapoga, Atuhaire, Priebe, and Cumber (2018) examined haemodialysis patients at the Buea Regional Hospital in Cameroon. A cross-sectional study of patients receiving haemodialysis was undertaken between December 2016 and January 2017 at the Buea Regional Hospital. A questionnaire was used to collect information, and SPSS 21.0 was used for analysis. Of the haemodialysis patients, 28 (70.0%) had not been on the treatment for more than five years, whereas 12 (30.0%) had. There were 21 males (52.5%) and 19 females (47.5%). Twenty of the patients (50%) were married couples while the remaining thirteen (32.5%) were either single or in a non-marital relationship. Of those on dialysis, 28 (70.0%) had been doing so for less than five years, while 12 (30.0%) had been doing so for five years or more. At least one physiological or psychosocial stressor was encountered by all individuals. After arterial and venous sticks (88%), fatigue was the most prevalent physiological stressor, followed by itching (49.5%). Following transportation to and from the hospital (99.5%), cost of attitudes (99.5%), and restrictions on vacation time and location (99%), are limitations on physical activities, hospitalizations, the length of time on dialysis, uncertainty about the future, changes to lifestyle, raised dependence, and sleep disturbances. In order to better assist families in encouraging their loved ones to inquire about assist from the renal unit's counselling department, this study was carried out at Moi Teaching and Referral Hospital. It was suggested that families offer psychosocial support to their clients. Patients undergoing long-term haemodialysis at a national hospital in Ghana were studied by Ganu, Boima, Adjei, Yendork, Dey, Yorke, Mate-Kole, and Mate-kole (2018). Long-term haemodialysis patients were surveyed to assess their standard of life and the frequency with which they experienced depressive symptoms. It also investigated how demographic factors affect mental health and overall well-being. The study included 106 haemodialysis patients. The Questionnaire for Patient Health and the World Health Organization's Quality of Life instrument were used to assess depressive symptoms and general well-being, respectively. 45 percent of test takers, nearly half, displayed signs of depression. Only about one in five people are happy with their lives overall. Significant inverse relationships were found between depressive symptoms and QoL, between depressive symptoms and time on dialysis, and between depressive symptoms and socioeconomic status. Overall QoL improved with longer dialysis, better health care, and more income. Patients on long-term haemodialysis often had depressive symptoms. Patients on haemodialysis who scored poor on quality of life assessments were more likely to have clinically significant levels of depression. Depression screening is essential for these patients since early treatment can enhance their overall health. Therefore, additional research on depression is needed at MTRH to assess the severity of depression in patients and better guide their treatment.

Mukakarangwa (2017) studied the adherence of ESRD patients on haemodialysis in a small sample of nephrology clinics in Rwanda. The purpose of this study was to analyse haemodialysis compliance in a sample of nephrology facilities in Rwanda serving patients with end-stage renal disease. From September 2016 to March 2017, researchers gathered data from dialysis patients at Kigali's university teaching hospital. The sample size was determined to be 41 people. The adherence to haemodialysis scores of 21 (51%) of those with End-Stage Renal Disease were above 80%. Seventeen people (42%) got between 70 and 79%, making them intermediate-level players. Three patients (7%) scored below 70%, indicating poor haemodialysis adherence. Compliance to haemodialysis was found to be significantly associated with both age and religion (p=.038 and p=.003, respectively). Family support, optimism regarding a kidney transplant, symptom relief, the desire to live longer and better quality of life, and the fear of dying were all highlighted as motivators of haemodialysis adherence. Poverty, unsure transportation, treatment-related problems, and long distance were identified as the main barriers to haemodialysis adherence. To determine if depression is a factor in noncompliance with haemodialysis therapy, a similar study has to be conducted in Kenya.

Factors Associated with High Depression Among Family Carers of Patients with End-Stage Kidney

Disease in Nairobi County was conducted by Waiyaki, Khasakhala, and Oladipo (2017) in Kenya. Their goal was to identify risk variables for depression among family carers of patients with end-stage renal illness. Participants were recruited from four different private dialysis clinics in Nairobi County. A total of 96 people participated in the research after the initial screening. Patients with mild to moderate depression were included, but not severe depression. The level of depressiveness was evaluated with the help of the Beck Depression Inventory (BDI). The mean BDI score in the current research was 18.7 (+/- 6.5 SD), with scores ranging from 3 to 32. This suggested that mild depression was the norm. A further third of the FCGs were found to have moderate depression. This study provides strong evidence that there may be substantial rates of depression amongst family carers for individuals with End-Stage Renal Disease. Therefore, more study into the link between melancholy and chronic renal disease is urgently needed to better prepare patients and caretakers to cope with the condition.

2.0 Materials and Methods

In order to collect data from a variety of people and find associations between factors, the researcher used a cross-sectional study design under quantitative paradigm (Creswell, 2014). Using this strategy, data can be gathered to determine if compliance to haemodialysis are associated with depression, anxiety and hopelessness. Patients with chronic kidney disease receiving treatment at Moi Teaching and Referral Hospital were the focus group. Patients who had been on haemodialysis for more than a month due to chronic kidney disease were studied. According to data collected from the renal department at Moi Teaching and Referral Hospital, 200 clients with chronic kidneys disease seek haemodialysis every week (Ndanyi, 2022). The sample size was calculated using Slovin's formula: $n=N/(1+N(e)^2$ n=133.33. Total respondents were therefore 133 participants. Data collecting questionnaires were the best tool for the investigation. The researcher used questionnaires to obtain information from participants on a range of factors. "(McLeod, 2018) A questionnaire is a form of survey used in research because it allows researchers to collect information from respondents in a structured way. The study employed a number of tools to assess the levels of depression, anxiety, hopelessness and compliance to haemodialysis. Questions in the questionnaire asked respondents to rate their level of agreement or disagreement with statements using Likert scale.

Zigmond and Snaith (1983) created the Hospital Depression and Anxiety Scale, a self-evaluation scale, to assess the likelihood, intensity, and frequency of anxiety and depression in patients with physical illnesses. Anxious (HAD-A) and depression (HAD-D) are the two components that make up the overall HAD-Scale. There are 14 questions that make up the Hospital Depression and Anxiety Scale. Anxiety is measured by the first seven odd-numbered items and despair by the remaining even-numbered items. Patients who have a score higher than the threshold are classified as high-risk. According to Bocerean and Dupret (2014), numerous studies on the validity of the Hospital Depression and Anxiety Scale have been undertaken in various countries with varying statistics, and the findings have been consistent. They've shown to be reliable and spot-on. Kipturgo (2016), who did a research at Kenyatta National Hospital, is only one of several Kenyan researchers to use HADS.

Hospital Anxiety and Depression scale (HADS), Becks Hopelessness scale and Compliance questionnaires were administered by the researcher to gather participant's responds on depression, anxiety and hopelessness, and the level of compliance to haemodialysis. The questionnaire covered a wide range of statements regarding psychological factors and compliance behaviors. Information on socio-demographic factors of the participants was also included. HADS was presented in a 4 likert scale point that covered variables such as: - strongly agree, agree, disagree and strongly disagree. BHS contained yes and no questions to determine the level of hopelessness. Compliance questionnaire asked the number of sessions the participant had missed in a month.

For the purpose of this study, the instruments were modified to cover haemodialysis patients. The tools have been used extensively to measure levels of depression, anxiety, hopelessness and compliance in patients hence it had acceptable validity and reliability.

3.0 Results and Discussion

3.1 Levels of Compliance to HD as Scheduled

Participants were asked about their compliance with regularly scheduled haemodialysis by counting how many they had missed over the previous month. Those who went an entire month without missing a haemodialysis session were considered compliant, but those who missed even one or two sessions were classified as non-compliant, regardless of the explanation given for the missed appointments. Table 2 provides a summary of the results.

Table 1: Levels of compliance to haemodialysis among chronic kidney disease patients

	Frequency (n)	Percent (%)
Number of HD sessions missed for the last one month		
None		
Missed 1 HD session	66	49.6
Missed 2 HD session	48	36.1
Main reason for missing	19	14.3
Not applicable (did not miss any)		
Transportation problems	66	49.6
Had other things to do	29	21.8
Was hospitalized	8	6.0
Forgot	2	1.5
Didn't want to go or couldn't go	12	9.0
	14	10.5

From the above table, throughout the past month, 66 (49.6%) of CKD patients were compliant to haemodialysis (missed no haemodialysis sessions). Transportation issues were cited by the majority of the 67 (50.4%) non-compliant patients receiving haemodialysis. 14(10.5%) did not want to go, twelve (9.0%) forgot, eight (6.0%) were otherwise occupied, and two (1.5%) were hospitalised.

3.2 Levels of Depression of chronic kidney disease patients based on Depression subscale (HADS-D) items in respondents on haemodialysis

The purpose of this research was to find how depressed the participants were. Participants were asked to indicate their level of agreement with seven statements drawn from the Hospital Scale for Anxiety and Depression (HADS-D) subscale. A four-point Likert scale was used, with three representing a "strong agreement" (SA) and zero representing a "strong disagreement" (SD) with each statement. Table 3 summarises the findings.

Table 2: Level of Depression of chronic kidney disease patients based on depression subscale

Statement	SD F (%)	D F (%)	A F (%)	SA F (%)
I have difficulty concentrating while reading or watching	10(7.5)	13(9.8)	14(10.5)	96(72.2)
I have increased/decreased appetite since the onset of HD treatment	12(9.0)	22(16.5)	11(8.3)	88(66.2)
I have difficulty in sleeping/ I sleep a lot since diagnosis of CKD	14(10.5)	25(18.8)	13(9.8)	81(60.9)
I do not like talking about the problems I go through, so I hide myself from other	11(8.3)	24(18.0)	21(15.8)	77(57.9)
I have no interest in activities that I used to enjoy before being diagnosed with CKD	7(5.3)	13(9.8)	22(16.5)	91(68.4)
I have difficulty in associating with people/ visiting certain places	10(7.5)	80(60.2)	16(12.0)	27(20.3)
I usually feel emotionally low and unhappy every time I think of my illness	4(3.0)	6(4.5)	35(26.3)	88(66.2)

Key: SD=Strongly Disagree, D=Disagree, A=Agree, and SA=Strongly Agree

Majority of the respondents scored highly on six of the seven depression questions (see Table 3 for details). The majority, 82.7 percent, agreed that they have trouble focusing while reading or watching, while only 17.3 percent, or 23 people, disagreed. The majority of haemodialysis patients with chronic kidney disease reported having trouble focusing on everyday tasks. The researcher deduced from this that patients' lives revolve around their chronic illness and the fact that they will need to undergo haemodialysis for the remainder of their days.

Seventy-four percent (99) of those with CKD agreed with the assertion that their appetite has grown since receiving the diagnosis, whereas thirty-four (25.5%) of those with CKD disagreed. This indicated that most individuals were in agreement that their appetite had changed for the better or for the worse after being told they had chronic renal disease. This may be the result of the stresses some patients have been under since the beginning haemodialysis treatment or the side effects of the medications and dietary restrictions.

The purpose of this research was to determine how widely people believe that their sleep patterns have changed since their diagnosis of chronic kidney disease. Seventy-seven percent (94 people) agreed that they either had trouble sleeping or sleep too much since being diagnosed with chronic kidney disease, whereas 29 percent (39 people) disagreed, showing that neither their sleep duration nor duration of sleep problems had changed since being diagnosed. The study's author stated that those who sleep excessively may be doing so in response to stress or as a means of coping with it. Overthinking one's disease, treatment, and/or potential consequences during treatment can prevent one from getting a good night's rest.

The results showed that majority of patients (73.7% to be exact) agreed that they disliked discussing their difficulties with others. However, 26.3% of respondents strongly disagreed, indicating that they like sharing their concerns to others. Based on these findings, the researcher concluded that most patients prefer to keep their difficulties to themselves rather than risk being judged by others if they revealed them.

Upon being asked if they are no longer interested in the things they used to appreciate before receiving a diagnosis with chronic kidney disease, 113 (84.9%) participants agreed with the statement, while 20 (15.1%) participants were in disagreement. The results suggested that most patients had stopped caring about things they used to appreciate before they were diagnosed with chronic renal disease. The study's author deduced that the patients' lack of time and energy to participate in these pursuits—as a result of their fluid and dietary

restrictions—may have led to their renal failure.

The study also aimed to examine if the patient had any issues interacting with others or going to specific locations. Patients' opinions were divided on the statement, with 67.7% disagreeing and 32.3% agreeing. This demonstrates that most patients do not have problems interacting with others or going to public locations. The majority of these patients have been able to resume their normal social lives and travel routines because of the benefits of haemodialysis.

The final item on the depression sub-scale asked whether or not the patient felt sad and depressed whenever they considered their disease. 123 (92.5%) of respondents agreed that the mere thought of chronic kidney disease makes them feel depressed and hopeless, while only 10 (7.5%) disagreed. According to the results, most people with chronic kidney disease experience feelings of sadness or depression whenever they consider their disease. The researcher concluded that the patients' negative attitudes were likely to be due to their preoccupation with their haemodialysis treatment schedules, which may have discouraged their participation in a variety of activities and led them to avoid their favourite foods.

Patients with chronic kidney disease at Moi Teaching and Referral Hospital were surveyed on their depressive symptoms and haemodialysis compliance. Patients undergoing haemodialysis for chronic kidney disease were cross-tabulated to determine the proportion of compliant versus non-compliant patients. The following tables summarise the results of a Chi-square test of hypothesis.

Ho$_1$: There is no association between level of depression and level of compliance to haemodialysis among chronic kidney disease patients at Moi Teaching and Referral Hospital.

Table 3: Depression score and number of haemodialysis sessions missed completely during the last month cross tabulation

None		number of haemodialysis sessions missed completely during the last month		Total			
		missed one HD treatment	missed 2 HD treatments				
Depression score	4	1	0	0			1
6		0	0	1		1	
7		0	0	1		1	
9		3	1	0		4	
10		2	0	0		2	
11		3	2	0		5	
12		2	4	1		7	
13		5	4	1		10	
14		6	1	2		9	
15		3	8	4		15	
16		9	4	3		16	
17		10	7	3		20	
18		8	3	2		13	
19		9	9	1		19	
20		2	1	0		3	
21		3	3	1		7	
Total		66		47	20		133

When taking the HADS-D as a whole, a score of 8 or 9 indicates mild depression, 10 or 11 indicates moderate depression, and 12 or more indicate severe depression. Of those on haemodialysis, 124 (93.2%) were clinically depressed, 6 (4.5%) had borderline scores and 3 (2.3%) had no clinically important signs of depression at all. Chronic renal disease patients on haemodialysis, both compliant and non-compliant, experience high rates of depression. The findings of this research appear to be related to those of Khan, Khan, Adnan, Suleiman, and Mushtaq (2019), who investigated the frequency and causes of depression among Malaysian haemodialysis patients. At the first appointment, 220 patients responded, 216 responded at the second, and 213 responded at the third and final follow-up. There were 157 depressed patients at the beginning of treatment (71.3%), 169 (78.2%) during the second appointment, and 181 (84.9%) at the final followup. Their study found that the longer a patient had haemodialysis, the higher their rate of depression.

Table 4: Chi-Square Tests on the association between depression level and level of compliance to haemodialysis among chronic kidney disease patients at MTRH

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.498[a]	30	.440
Likelihood Ratio	30.861	30	.422
Linear-by-Linear Association	.127	1	.722
N of Valid Cases	133		
a. 39 cells (81.3%) have expected count less than 5. The minimum expected count is .15.			

According to the numbers on table 5, X^2 (30) =30.498, and P=0.440. The null hypothesis is not rejected since the P-value (0.440) is greater than the significance level (0.05). Accordingly, there is no statistically significant association between the level of depression and haemodialysis compliance level among chronic kidney disease patients at MTRH, Eldoret, Kenya. This means that depression can occur in either haemodialysis-compliant or non-compliant patients with chronic kidney disease.

The findings were in line with the findings of a previous study done by Khan, Khan, Adnan, Suleiman and Mushtaq (2019), on the prevalence and predictors of depression among haemodialysis patients at Malaysia with the objective of determining the prevalence and predictors of depression among haemodialysis patients. They found out that 157(71.3%) patients suffered from depression at baseline, 169(78.2%) had depression on second evaluation and 181(84.9%) suffered depression on the final visit. The concluded that the rate of depression worsened as patients attended haemodialysis sessions. They recommended psychological counselling services in order to lower the rate of depression as patients continued with HD. The researcher therefore made a conclusion that, depression is a common condition in CKD patients regardless of whether one is compliant or non-compliant to haemodialysis.

4.0 Conclusion and Recommendations
Based on the results of the analysis (X^2 (30) =30.498, P=0.440), the study concludes. The resulting P-value of 0.440 is more than the threshold of 0.05, hence the null hypothesis cannot be discarded. Those who did not skip any haemodialysis treatments and those who missed only one or two sessions had significantly higher rates of depression than those who did not miss any sessions. This suggested that depression is possible in both compliant and non-compliant haemodialysis patients. Accordingly, MTRH patients with chronic kidney disease did not show a correlation between depressive symptoms and haemodialysis adherence. Among those with CKD receiving haemodialysis treatment at MTRH, 93.2% were found to be depressed. Those who complied and those who did not, had similar levels of depression. The researchers found no correlation between depressive symptoms and haemodialysis compliance.

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