Ministry of Higher Education and Scientific Research

University of Kerbala \ College of Nursing

Adult Nursing

Impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis

A Thesis Submitted

To the Council College of Nursing \ University of Kerbala, in Partial Fulfilment of the Requirements for the Master degree in Nursing Sciences

By

Mithal Yaseen Abed

Supervised

Professor. Dr. Fatma Makee Mahmood

Muharram- 1446 A.H. **July - 2024 A.D.**

بسم الله الرحمن الرحيم

﴿ لَا يُكَلِّفُ اللَّهُ نَفْسًا إِلَّا وُسْعَهَا ۚ لَهَا مَا كَسَبَتْ وَعَلَيْهَا مَا اكْتَسَبَتْ ۗ رَبَّنَا لَا تُؤَاخِذْنَا إِنْ نَسِينَا أَوْ أَخْطَأْنَا ۚ رَبَّنَا وَلَا تَحْمِلْ عَلَيْنَا إِصْرًا كَمَا حَمَلْتَهُ عَلَى الَّذِينَ مِنْ قَبْلِنَا ۚ رَبَّنَا وَلَا تُحَمِّلْنَا مَا لَا طَاقَةَ لَنَا بِهِ ۖ وَاعْفُ عَنَّا وَاغْفِرْ لَنَا وَارْحَمْنَا ۚ أَنْتَ مَوْلَانَا فَانْصُرْنَا عَلَى الْقَوْمِ الْكَافِرِينَ ﴾

صدق الله العلي العظيم

سورة البقرة الآية ﴿٢٨٦﴾

Supervisor certification

I certify that thesis ,which is entitled (**Impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis**), submitted by : **(Mithal yaseen Abed)** ,was prepared under my supervision at the College of Nursing , University of Kerbala in partial fulfillment of the requirement for the degree of master in nursing sciences .

University of Kerbala

Supervisor

Prof. Dr. Fatma Makee Mahmood

College of Nursing

University of Kerbala

Data : / / 2024

Approval certification

After reviewing the thesis entitled **(Impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis)** , we certify that it fulfills all the requirements for awarding the degree of master in nursing sciences.

Head of Adult Nursing Department

Prof. Dr. Fatma Makee Mahmood

College of Nursing

University of Kerbala

Data : / / 2024

Associate Dean for Scientific Affairs and Higher Studies

Assist . Prof. Dr. Hasan Abdallah Athbi

College of Nursing

University of Kerbala

Data : / / 2024

Committee Certification

We are, the examining committee, certify that we have read this thesis entitled **(Impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis)** which is submitted by **Mithal yaseen Abed** ,and we have examined the student in its contents, and what is related to it and we decide that it is partial for awarding the degree of master in nursing sciences.

Signature

Assist. Prof. Dr. Hussam Abbas Dawood
Member

/ / 2024

Signature

Asst. Prof. Dr. Diaa Kareem Abd Ali

Member

/ / 2024

Chairman

Asst. Prof. Dr. Selman Hussain Faris
Signature

/ / 2024

The council of the college of nursing has approved the examining committee decision

Signature

Asst. Prof. Dr. Selman Hussain Faris

Dean College of Nursing /University of Kerbala

Dedication

Great thanks to Allah almighty ….

To my dear father and to my beloved mother, ….

To my brothers and sister with all love and respect who support me to pursue my study….

To my husband with love and respect forever who supported me throughout this process and I will always appreciate everything he did for me….

I dedicate this thesis to my children, Hassan and Hussein .

Acknowledgments

Great thanks to God ‘Allah’ most glorious, most merciful.

First of all, I would like to thank all people who contributed in one way or another to the work described in this thesis. My sincere appreciation to (**Assistant Professor Dr. Selman Hussain Fares)**, Dean of the College of Nursing at the University of Karbala and Assistant Dean for Scientific Affairs **(Assistant Professor Dr. Hassan Abdullah Athbi)** and all members of the college for their friendship and support.

I would like to express my sincere gratitude and appreciation to my supervisor **(Prof. Dr. Fatma Makee Mahmood)** for her wonderful guidance, encouragement, patience and support throughout the course of this thesis, and for the frequent revisions of the thesis manuscript. I also thank all my dear professors and all the workers at the College of Nursing/University of Karbala.

I extend my sincere thanks for the endless generosity of **Dr. Muhammad Muqadir**, a specialist physician, and the workers in the kidney dialysis unit for the administrative facilities they provided to conduct the study.

All thanks, appreciation, and gratitude to the (experts) who kept me on track for their time and expertise in reviewing and evaluating the study.

Abstract

Hemodialysis is a rigorous and ongoing medical procedure that involves significant lifestyle restrictions, unpleasant side effects, Hemodialysis patients have a weakened immune system, which makes them more susceptible to infections.

The aim of this study is to evaluate the impact of viral hepatitis infections on health-related quality of life in patients undergoing hemodialysis.

A descriptive quantitative study and a non-probability (purposive) sampling 100 patients were carried out to patients undergoing hemodialysis for two groups of samples (positive and negative) viral hepatitis .The study was conducted in Imam Hussein Medical City, started from the period of October, 2023 to Aguest ,2024.

Data were obtained through interviews, the questionnaire is divided into two parts, part one: - includes patient demographic characteristics. part two is the World Health Organization Quality of Life (WHOQOL-BREF). An application of the SPSS, version 26, was used to analyze and interpret the data.

Viral Hepatitis study groups are at the age group of 50 - 59 years old, 28.0% and 30.0% respectively are at the age group of 60. and 58.0% from positive groups are males and 50.0% from negative groups are females and male , The result shows overall mean of score Health – Related Quality of Life among (Positive Viral Hepatitis) was (61.08 ± 5.813), the overall mean of (negative Viral Hepatitis) was (84.30 ±10.436).there is significant association between Difference in Health-Related Quality of Life between Positive and Negative Viral Hepatitis at p- value =0.001, 0.05) .

the sex was significant p-value = .008 , age , economic status was the p-value (0.021), the p-value (0.037).

The study concluded that viral hepatitis had varying degrees of impact on quality of life on physical, psychological and social dimensions. recommended creating a broad health education program to increase patients' understanding and awareness of the prevention of viral hepatitis and how it is transmitted and preventive measures.

List of Contents

List of Appendices

List of Figures

List of Tables

List of Abbreviations

Items	Meaning
A	Alpha Cronbach
AVF	Arteriovenous fistula
AVG	Arteriovenous grafts
BUN	blood urea nitrogen
CVC	Central venous catheters
DOPPS	Dialysis Outcomes and Practice Patterns Study
F	Frequencies
HRQOL	health-related quality of life
HD	Hemodialysis
HAV	Hepatitis A Virus
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HDV	Hepatitis D Virus
HEV	Hepatitis E Virus
H	High
HS	High Significant
HIV	Human immunodeficiency virus
IFN	Interferon
L	Low
MS	Mean Score
M	Moderate
Neg.	Negative
NS	Non-Significant
No.	Number
%	Percentage

PD	peritoneal dialysis
Pos.	Positive
P value	Probability Value
S	Significant
SD	Standard Deviation
SPSS	Statistical Package of Social Sciences
VA	vascular access
WHO	World Health Organization

Chapter One

Introduction

1.1. Introduction

The term "hepatitis" is used to refer to an inflammatory condition related to the liver. Liver infection caused by a virus is the main cause of hepatitis. There are five main types of viral hepatitis: A , B , C , D , and E . The following viruses can also infect the liver: coxsackie, rubella, cytomegalovirus, herpes, and Epstein-Barr. Some possible causes of hepatitis include exposure to chemicals and pharmaceuticals, immune system disorders, metabolic problems, and genetic abnormalities (Lewis et al., 2019).

A viral infection that causes necrosis and inflammation of liver cells is known as viral hepatitis. This infection can lead to a number of cellular, metabolic, and clinical problems. Hepatitis A, E are transmitted by the same transmission mechanism, which involves ingestion of fecal material contaminated with the virus. while hepatitis C, D, and E, share many characteristics (Hinkle and Cheever ., 2018).

The Hepatitis C virus (HCV) is a communicable disease, higher than average risk of contracting hepatitis C virus infection is associated with patients undergoing maintenance hemodialysis. It attacks the liver and can range in severity from a minor illness that lasts a few weeks to a serious illness which lasts a lifetime .It is caused by HCV infection which is mainly contracted by coming into contact with an infected person's blood (Amber et al., 2021).

Hepatitis C virus (HCV) infections, which lead to parenteral infections, can cause chronic active hepatitis, cirrhosis, and primary liver cancer as consequences.

Hepatitis C virus (HCV) is a serious threat to public health worldwide as a major cause of cirrhosis, hepatocellular carcinoma, and chronic liver disease. Worldwide, the incidence of HCV varies between and within countries. In addition to providing information about the effects of past and

current migration patterns, molecular epidemiological investigations conducted in a number of countries serve as a critical addition to understanding the epidemiology, genotypes, and subtypes of HCV. There are 57 subtypes and 8 major genotypes of HCV based on evolutionary classification. Geographic origin and transmission risk category influence the distribution of HCV genotypes and subtypes. The number of deaths from HCV infection will continue to rise if infected individuals are not properly identified and treated (Guntipalli, et al., 2021).

Hepatitis C virus (HCV) infection is more common in hemodialysis patients for a number of reasons, including longer vascular access, potential contact with infected patients, and equipment failure (Wigneswaran, John, et al., 2018).

Although there may not be any visible blood on contaminated surfaces, contact with contaminated surfaces can still result in nosocomial transmission because HCV can linger in an infectious state on a surface at room temperature for at least 16 hours. the detection of hepatitis C virus RNA on the surface of waste carts, dialysis connectors, and dialysis equipment underscores the importance of good hand hygiene. In addition, mismanagement of intravenous medications at the point of care can increase the risk of transmission.

In the US, hepatitis C virus (HCV) infection is the most common type of chronic blood-borne infection; Maintenance dialysis patients are more susceptible to this infection than the general population. Higher mortality and increased risk of cirrhosis and liver cancer have been associated with hepatitis C virus infection in dialysis patients.

hemodialysis patients have weakened immune systems, making them more susceptible to infections. Viral hepatitis in people undergoing dialysis usually arises from chronic hepatitis B or C. When living with kidney

disease, there are many obstacles that may lead to a decrease in a person's standard of living (Khasal et al., 2020) .

Dialysis can be performed in two ways: hemodialysis and peritoneal dialysis. The term "dialysis" refers to the method of passing a semipermeable membrane through a solution of molecules. Dialysis is designed primarily to help normally functioning kidneys regulate fluid levels inside and outside cells (Yılmaz et al., 2023).

Access to permanent hemodialysis can be classified into three types: autogenous Arteriovenous fistula (AVFs), Arteriovenous grafts (AVGs), and tunneled CVCs (Central venous catheters) (Arasu et al., 2022).

Hepatitis C virus (HCV) infection remains a major health problem in patients undergoing hemodialysis (HD). Among HD patients, receiving a blood transfusion increases the risk of infection with hepatitis C virus (HCV). prolonged duration of dialysis, and acquiring infection in health care settings due to inadequate infection control measures. (Abdelsalam et al., 2019)

Hepatitis C virus (HCV) is an infectious disease that can cause mild to severe, life-long liver damage. Infection with HCV, which is disseminated by contact with infected people's blood, causes this condition, Among developing countries, chronic hepatitis C ranks high in the incidence of cirrhosis, liver cancer, and need for liver transplantation. Lack of appropriate infection control measures during hemodialysis patients are the leading cause of nosocomial transmission (Amber et al., 2021)

Health is “a state of complete physical, mental, and social well-being, and not merely the absence of disease and infirmity,” according to World Health Organization report. (Namdar et al., 2023)

Health Related Quality of Life (HRQOL) refers to a patient's perceived well-being across several dimensions.(Timmers et al., 2008)

Quality of life (QoL) is a difficult and ambiguous concept that many theorists are still trying to define because it can mean different things to different people. According to conventional wisdom, a person's material prosperity and sense of purpose in life depend on his or her psychological, emotional, and social health. In contrast to “life,” which refers to the functioning and developmental capabilities of an organism, “quality” refers to the degree to which anything can be perfect. Quality of life (QoL) is a more general term that can be used to evaluate how well a person is able to function in society, their life experiences, how they value things, and how their health affects their life (Rikos et al., 2023).

Patients with end-stage renal disease, comorbidities, and dialysis face many challenges in their daily lives. These include an increased likelihood of psychological problems, restrictions on economic activity, and decreased quality of life. The quality of life of dialysis patients decreases with the risk of death, as shown in multiple studies (Kim & Lee, 2023) .

Anxiety and depression have been linked to poor daily physical activity and physical functioning, and it has been found that dialysis patients with poor physical function have a lower chance of survival than those with better physical condition (Lee et al., 2020).

Lee et al. (2020) found that dialysis patients from diverse ethnic backgrounds have significantly varying health-related quality of life (HRQOL).

Nephron loss that is persistent, progressive, and irreversible as a result of various illnesses is known as chronic renal failure (CRF). Reduced glomerular filtration rate, elevated urinary albumin excretion, or a combination of these two conditions are the definitions of CRF, a significant health issue (Yılmaz et al., 2023) .

Although the overall rate of hepatitis C virus infection is much greater among the US population than among dialysis patients, the actual rate of

infection varies from place to place. It is worth noting that dialysis patients who test positive for hepatitis C virus seroconversions are likely to have been infected with the virus while receiving dialysis, which can be prevented if the relevant facilities adhere to standard infection control protocols. Among US dialysis centers, seven cases of hepatitis C virus infection have been confirmed. were all caused by the same thing: a constant stream of infection control errors (Raju & Latha 2012).

Many research is being conducted into the impact of this type of care on a patient's mental health. Dialysis patients' morale and quality of life can be greatly affected by various factors, such as pain, fatigue, dietary restrictions, duration of treatment, and the impact on their sexual health. Ultimately, dialysis was just a component of their illness. Sometimes, this may reinforce their perception that they have fallen into an inevitable cycle of moral and physical decline. The primary goal of therapeutic intervention is to improve the patient's quality of life, enabling him to live an almost normal life in terms of duration and quality (Touil, et al. 2022).

When choosing a dialysis technique for individuals with chronic kidney disease, doctors consider patients' health-related quality of life (HRQoL). Aging populations have a higher incidence of chronic diseases, leading to longer durations of these conditions. End-stage renal disease (ESRD) is a condition characterized by a significant and persistent decline in kidney function, which impairs the body's ability to regulate fluids. Maintain electrolyte balance and manage metabolism.

Assessing one's physical health, obtaining medical treatment, and participating in activities that promote good health are all components of health-related quality of life (HRQoL). It is widely accepted that health-related quality of life (HRQoL) is a complex concept that includes various aspects such as functional status, well-being and the impact of physical, emotional, mental and social health. It also takes into account the side

effects of treatment and symptoms associated with a disease or health condition (Namdar et al., 2023).

Compared with the general population, patients with HD had significantly worse HRQoL, a major factor in hospitalization and mortality. End-stage renal disease (ESRD) has a profound negative impact on patients' HRQoL due to the disabilities and limitations it causes in almost every part of their daily lives (Fayrouz et al., 2023).

For patients receiving dialysis, hepatitis is the biggest problem that may reduce their quality of life. Even in cases in which there is no clinically significant renal disease, prolonged survival from hepatitis causes psychosocial distress in the patient; In particular, the effects of hepatitis are most pronounced in relation to social and physical function, general health and vitality, including impacts on families, workplaces and society as a whole (Khasal et al.,2020) .

There are two treatment options for chronic kidney failure: conservative care and renal replacement therapy. Hemodialysis is the most commonly used type of renal replacement therapy, followed by continuous ambulatory peritoneal dialysis (Yonata et al., 2022).

Medical advances in treatments such as dialysis and kidney transplantation have increased the life expectancy of patients with end-stage renal disease (ESRD),

The long and difficult process of dialysis is accompanied by significant limitations in daily activities, unpleasant side effects, and sometimes fatal outcomes (Al-Sharifain et al ., 2022).

Symptoms like nausea, nocturia, decreased appetite, and weakness can occur in patients whose glomerular filtration rate (GFR) is less than 60 mL/min/1.73 m2. dangerous waste products, mainly urea, building up in the blood (Nurbadriyah et al., 2023).

The primary treatment option for all affected individuals remains renal replacement therapy (RRT), ESRD globally. Due to the low rate of kidney transplantation, hemodialysis (HD) is the most commonly used type of RRT, and hemodialysis remains the most common type (Mohamed, et al., 2023).

Some studies have shown that the quality of life of end-stage renal disease (ESRD) patients is lower than that of the general population. This is likely due to factors including limitations caused by the condition and the necessity of treatment hemodialysis,

Among patients with hemodialysis, research suggests that decreased quality of life, especially in physical and psychological domains, is associated with increased mortality and hospitalization rates. For this reason, quality of life is increasingly important within this group (Balaban et al. 2017).

Circulatory problems are a frequently occurring complication in individuals undergoing HD ,When fluid is removed by HD or ultrafiltration (UF), blood pressure often falls. Twenty to thirty percent of individuals undergoing routine HD experience intradialytic hypotension,

In addition to high blood pressure, anemia is a common side effects of hemodialysis (HD) patients, primarily due to insufficient erythropoietin production as a result of kidney failure, Arrhythmia associated with dialysis is another serious consequence (Lubis et al., 2019).

Compared with the general population, dialysis patients have a significantly higher prevalence of hepatitis C virus (HCV) infection , with differences observed based on geographic location (Khalaf and Hussein 2022).

According to Lee et al., (2020) ,the term health-related quality of life (HRQOL) refers to a person's overall state of physical and mental health as they relate to various aspects of their daily functioning, including how well

they cope with illness. Assessing and improving patients' self-reported physical and mental health is critical to providing high-quality care and effective disease treatment. People with long-term health conditions often experience low HRQOL,

A low survival rate has been observed among dialysis patients with poor physical function compared to those in better physical condition, and people with depression and anxiety tend to be less active and have poorer physical functioning on a daily basis. There was also an evidence that different ethnic groups had different HRQOL among dialysis patients.

A new study suggests that reduced quality of life may be a contributing factor to higher mortality among patients infected with hepatitis C virus (HCV),quality of life outcomes: many researchers have noted that individuals with healthy kidney function have poor kidney function; QOL is lower in dialysis patients and individuals infected with hepatitis C virus (Alshehri, 2021).

It is essential for individuals with chronic kidney disease (CKD) to devote four hours three times a week to hemodialysis (HD), regardless of their schedule. Patients receiving continuous ambulatory peritoneal dialysis need to carry three 2-liter bags of dialysis fluid in order to perform dialysis during the day. This is not only inconvenient, but also becomes more burdensome as patients get older and require longer dialysis sessions because starting dialysis cannot prevent the underlying causes of chronic kidney disease from getting worse. Dialysis patients find it difficult to continue working, which ultimately leads to a decline in their social and economic status. As a result, patients with CKD often experience despair, and their quality of life may deteriorate as the disease progresses. (Syamsiah et al , 2022)

While HD has been shown to improve clinical outcomes, patients may experience hemodynamic and metabolic changes due to various

factors such as disease-related disorders, treatment side effects, daily activities, and social changes ,The quality of life of individuals is greatly affected by these changes (Barreto et al , 2023).

1.2. Importance of the Study:

End-stage renal disease (ESRD) as a fatal condition severely reduces the psychological and physiological health of patients and can make it difficult for them to enjoy their lives as they did in the past. When it comes to renal replacement therapy (RRT), dialysis is the most common option for individuals with chronic kidney disease (CKD). The number of individuals undergoing dialysis is expected to reach 5.4 millions by 2030, with the greatest rise in Asia (Gahatraj et al., 2024) . The rising incidence of ESRD worldwide points to a rise in issues that dialysis patients and their families must deal with, which lowers their quality of life (QoL)(Namdar, et al., 2023). As mentioned by Alshehri, (2021) worldwide, the burden of disease is being worsened by the rising rates of hepatitis C virus (HCV) infections, which lead to an increase in liver-related deaths and illnesses. More than 185 million people, or 2.8% of the world's population, have been infected with the hepatitis C virus (HCV). Between 130 and 170 million of these people suffer from chronic infections , and 350,000 people die annually from cirrhosis and liver cancer caused by the hepatitis C virus . Kidney disease kills 1.1 million people worldwide each year, and is among the top 12 diseases. With a mortality rate of 5.3%, the disease ranks fourth in Iraq. Women make up 64% of the population, while men make up 6.01%. Excluding the Kurdistan region.

Among dialysis patients, hepatitis virus infection accounts for the vast majority of deaths and serious illness. HCV seropositivity rates range from 5 % to 60% in low-income countries. Patients infected with hepatitis C were more likely to have the virus than those who did not have uremic symptoms (Raad & Kadhim 2021) .

Health-related quality of life (HRQOL) is one of the primary indices of health and well-being among dialysis patients, and there has been a growing interest in implementing intervention approaches in recent years (Shahrin, et al., 2019). Patients undergoing dialysis due to viral infections will have their physical, mental, social and spiritual health assessed in this study.

1.3. Problem statement:

Hemodialysis patients are particularly vulnerable to infection with hepatitis C virus, which can lead to serious complications and even death., and its prevalence varies widely around the world. (Amber et al,2021)

Hepatitis C virus (HCV) infection is a major public health problem in both developed and developing countries. Screening of blood products for HCV antibodies and infection treatment strategies have not eliminated the risk of HCV infection among hemodialysis (HD) patients. It is possible that the actual number of hepatitis C virus (HCV) infections among HCV patients is not accurately recorded (Abdelsalam et al., 2019).

In study Namdar et al., (2023) conduct in Iran about 10% of the population suffers from chronic kidney disease, which leads to a large number of premature deaths. In recent decades, it has been the third most common cause of death globally, and is expected to become the fifth leading cause of premature death in terms of years of life lost by 2040.

Several studies in Iraq reported the frequency of hepatitis C virus infection in dialysis patients, including 6.6% in the Holy Karbala Governorate, 5.66% in the city of Diwaniyah, 9.2% in the Kurdistan Region, and 46.36% in Al-Kindi Hospital Educational center in Iraq. Baghdad and 20% in Iraq, the Mosul region (Khalaf & Hussein, 2022).

Patients with HD are at increased risk of complications and death due to hepatitis B and C virus infection , complicating care of patients in dialysis units, Dialysis patients are more susceptible to viral hepatitis than the

general population. Hepatitis B virus is less common in HD units than HCV (Athbi and Jasim, 2014).

The World Health Organization (WHO) confirms that an individual's assessment of their position in life is influenced by their cultural background, values, goals, expectations, standards, and issues. Dialysis patients' quality of life is being used more and more to assess their overall health and prognosis (Alshelleh et al., 2023).

When treating patients with hemodialysis , the main goal is improve their health-related quality of life, as curative treatment is not an option, Current medical practice revolves around this (Gebrie et al. 2023).

1.4. Research Question:

Does the Viral Hepatitis Infections have an impact on Health-Related Quality of Life in Patients Undergoing Hemodialysis ?

1.5. Research Hypothesis

1.5.1. Null Hypothesis

There is no relation between the Impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis and their demographical characteristics.

1.5.2. Alternative Hypothesis.

There is a significant relation between the Impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis and their demographical characteristics

1.6. Objectives of The Study:

a) Assess health related-quality of life in patients undergoing hemodialysis, using the World Health Organization Quality of Life (WHOQOL-BREF)

b) Determine the impact of viral hepatitis infections on health-related quality of life in patients undergoing hemodialysis.

c) Determine association between socio-demographic characteristics (such as age, sex, educational levels, occupation, economic status, pre-existing disease) and quality of life in patients undergoing hemodialysis.

The study aims to: determine the impact of viral hepatitis infections on health-related quality of life in patients receiving hemodialysis and evaluate the relationship between sociodemographic factors (e.g., age, sex, education level, occupation, economic status, and pre-existing disease) and quality of life in hemodialysis patients.

1.7. Definition of terms:

1.7. a. Hemodialysis:

Theoretical Definition:

Hemodialysis is the predominant technique employed to manage severe and irreversible renal failure, hemodialysis is a medical therapy that employs a specialized machine to remove waste items from the blood and restore its normal composition. Chronic hemodialysis is associated with several consequences, including cardiovascular, nutritional, gastrointestinal, hepatic, endocrinological , arteriovenous fistula (AV) difficulties, infections, and disturbances of the brain system and sleep (Zedan., et al ., 2022) .

Operational Definition.

patients typically spend three to four hours a day at dialysis facilities, which can have an impact on their personal and professional life

1.7.b.Viral Hepatitis Infections:

Theoretical Definition: venous infection caused by hepatitis C virus (HCV) is a possible cause of chronic active hepatitis. cirrhosis, and primary hepatocellular carcinoma. Due to significant variations in the nucleotide sequence of the viral genome, there are different genotypes and subtypes of HCV worldwide. (Seifert et al., 2011)

Operational Definition: is that there has always been a high risk of transmission of blood-borne infections in hospitals, both among patients. The incubation period for blood-borne diseases can be up to six months.

1.7.c. End-stage renal disease (ESRD)

Theoretical definition: It refers to kidney function declines irreversibly, resulting in the inability to maintain biochemical balance and accumulation of body fluids and waste products under conservative treatment. This disease requires renal replacement therapy (RRT) through dialysis or kidney transplantation (Rasyid et al., 2022)

Operational Definition : refers to the final and most risky stage of kidney disease.

1.7. d. Quality of life:

Theoretical Definition:. The WHO defines quality of life (QOL) as an individual's subjective assessment of how a disease and its treatment affect his or her physical, mental and social functioning and overall health (Nurbadriyah et al., 2023).

Operational Definition: evaluation was performed to examine the relationship between various quality of life measures, including indicators of psychological well-being, social support, and disease severity. This study aims to determine whether different measures assess distinct aspects of patients' experiences and whether they are interrelated in various ways.

1.7.e Health Related Quality of Life

Theoretical Definition: Health-Related Quality of Life (HRQOL) encompasses the physical, psychological, and social aspects of health that are impacted by a person's experience, beliefs, expectations, and perceptions (Ravindran et al., 2020).

Operational Definition: The evaluation of health-related quality of life is a useful research technique for determining the efficacy of therapeutic

interventions, patient survival, and hospitalizations, as well as a prognostic indication of the disease's course.

Chapter Two

Review of Literature

Chapter Two

Review of Literature

2.1Theoretical

In 1995, Wilson and Cleary developed a causal model of health-related quality of life (HRQoL) to address the need for a model that could help plan health care interventions to improve patients' quality of life. This model also aims to analyze and understand the connections between different factors that affect patients. In 2005, an improved version of the Wilson and Cleary model was introduced by Ferrans et al. This updated model classifies patient outcomes into five specific categories, arranged in a specific sequence. These domains include biological function (e.g., presence of disease), symptoms, functional status, general health perceptions, and overall quality of life. This model suggests that the presence of disease serves as an initial signal for evaluating patient outcomes. Unidirectional causality refers to a relationship in which one event or factor affects another but not vice versa. Individual traits (such as demographic, biological, genetic, and psychological factors) and environmental traits (including social and physical elements) are also thought to have an influence. (Nilsson, 2012)

The Wilson & Cleary/ Ferrans model of HRQoL begins with a biological functional compartment. This box provides a basic overview; However, there are more comprehensive models accessible. McCain et al include A Psychoneuroimmunology (PNI) is a field that explores how stress and coping mechanisms affect various aspects of health, such as quality of life, psychosocial functioning, and physical well-being. This effect occurs through the interconnected actions of the neuroendocrine and immune systems, with priority given to the neuroendocrine system. The N component, consisting of the HPA and sympathetic adrenal systems, and

the I component, consisting of interleukins, act as mediators. Likewise, the P component also acts as a mediator.

This framework, like the Valderas and Alonso model, aims to guide treatments and measurements for chronic and severe disorders,

A comprehensive approach to cancer and HIV management has been demonstrated by McCain et al.(Nilsson, 2012)

2.2 Overview About Hemodialysis

Hemodialysis treatment is laborious, costly, and necessitates hydration and food limitations. Long-term dialysis therapy frequently leads to a loss of autonomy, the challenge of managing an incurable illness, reliance on careers, disruption of marital, familial, and social relationships, and diminished or total loss of financial resources. Consequently, the physical, psychological, economical, and environmental dimensions of existence are compromised (Zedan., et al 2022).

Chronic diseases often result in a significant decline in energy, strength, time, money, and relationships. Chronic kidney disease has been associated with decreased physical function and social interactions, employment and nutritional limitations, and loss of independence (de la Cuesta-Benjumea et al., 2023).

The shift from acute to chronic diseases has resulted in more individuals with disabilities in the health care system. This condition leads to premature death and decreased quality of life (QOL), dialysis is a treatment for chronic kidney failure (Sajadi et al., 2017).

Chronic kidney disease ranks as the 12th leading cause of death and the 17th leading cause of disability , the global rise in chronic kidney disease is due to an increase in diabetes and high blood pressure, which are the main risk factors for chronic kidney disease, Patients with chronic kidney disease experience an irreversible loss of kidney function, leading to end-stage kidney disease (Tayea et al., 2022) .

Treatment for ESRD consists of restoring kidney function lost due to dietary restrictions, medications, and dialysis. Kidney function tests refer to a variety of tests and procedures that can be performed to determine how well the kidneys are working, dialysis patients should undergo periodic diagnostic tests to monitor cardiovascular problems (Al-Ani & Mahmood ,2014).

Chronic kidney failure is characterized by a decline in kidney function that does not improve over time. End-stage kidney failure will develop when the kidneys continue to perform their functions but are unable to maintain the internal environment of the body, The dialysis machine known as hemodialysis treatment will replace the function of the kidneys. Hemodialysis uses an artificial kidney, known as a dialyzer, to remove metabolic waste and excess fluid from the bloodstream. This treatment seeks to maintain the balance of fluids and electrolytes, such as potassium, sodium, and chloride, and blood pressure within normal levels , Responders may require ongoing HD treatment, which can improve their physical and psychological health and quality of life (Sutrisno et al., 2019).

Hemodialysis collects waste from the blood to clean it. People with severe disease or end-stage kidney failure who need dialysis for a short period of time often use hemodialysis. For those with chronic kidney failure, dialysis is life-saving. In addition to not reversing kidney disease or restoring metabolic or endocrine function, dialysis does not treat the condition either. Furthermore, it ignores how kidney failure and its treatment affect the overall health of patients. Dialysis aims to restore normal fluid balance in the kidneys. hemodialysis aims to restore the fluid environment within and around cells, which is a normal function (Darsini et al., 2022).

The hemodialysis process entails withdrawing certain compounds, such as bicarbonate, from the dialysate and adding others, such as urea,

from the blood. In most cases, it is the solute concentration and molecular weight that determine the diffusion rate. Diffusion rates vary depending on molecular size. Urea and smaller molecules diffuse quickly while phosphate, albumin, globulin II, larger molecules, and protein-bound solutes take longer and diffuse more slowly. Ultrafiltration is the technique of dissolution through microscopic pores in a membrane using convection generated by hydrostatic and osmotic pressure gradients (Darsini et al., 2022).

According to Darsini et al. (2022), the ultrafiltration does not change solute concentrations. Ultrafiltration aims to completely eliminate excess body fluids. Before each dialysis session, it is important to evaluate the patient's physiological state to adapt the prescription to his specific goals. In order to effectively remove fluids and solutes, it is necessary to combine separate but interrelated components in the dialysis recipe. The primary goal of dialysis is to relieve symptoms associated with uremic syndrome.

Although hemodialysis can prolong a patient's life, it comes with the challenge of adapting to a therapeutic diet that limits certain foods and requires regular removal of metabolites from the blood. Compliance measures patients' behavioral responses to lifestyle modifications, dietary guidelines, and drug therapy (Yılmaz et al., 2023).

According to Yılmaz et al. (2023) , Adherence to diet and fluid restriction is critical to the effectiveness of treatment . Failure to follow prescribed dietary patterns has a detrimental impact on disease prognosis, leading to higher health care costs and increased disease-related mortality. Serious complications such as hypertension, left ventricular hypertrophy, cognitive impairment, and increased mortality may arise if the patient is unable to comply with fluid restriction because he is unable to control his need to consume water and other fluids.

Dialysis treatment is an emotionally and physically demanding requirement that can lead to decreased quality of life and hopelessness. The consequences of the disease are compounded by the psychological features of dialysis; people with dialysis rely on others to help them with their treatment, which increases the desire to be part of a larger group and empower social components in some way as essential to their well-being. However, after diagnosis with dialysis, socialization is often altered or reduced due to dietary restrictions and a general feeling of exhaustion. Patients have claimed that the quality of their social relationships has deteriorated as a result of avoiding social activities and community in order to hide the health and physical changes caused by dialysis treatments. Significant changes in body image resulting from dialysis procedures; patients feel that their appearance limits their lifestyle choices and negatively impacts their mental health (Guerra, 2020).

Despite the improved patient survival rates associated with hemodialysis, individuals undergoing this treatment have a range of health issues including sleep disturbances, peripheral neuropathy, exhaustion, stress, emotional distress, cognitive decline, pain, and sexual dysfunction. Additionally, this process is both time-consuming and costly, frequently leading to a decrease in personal autonomy, reliance on caretakers, disturbance of familial and social relationships, and a decrease or whole cessation of financial income (Gebrie et al., 2023).

2.3 History of Hemodialysis

Kidneys are important organs in our body that play an important role in maintaining balance. Kidney dysfunction is now common and can develop at any age and to varying degrees. Kidney problems include acute and chronic kidney failure (stages 1-5), as well as end-stage kidney failure. Dialysis is a semi-permeable membrane that removes waste and harmful compounds from the blood in cases of kidney failure. Thomas Graham

invented dialysis in 1884, and Dr. William Cove is considered the father of dialysis . According to Watson, dialysis is a treatment for acute and chronic failure that reduces metabolic waste products in the blood (urea and creatinine) To remove toxins and balance electrolytes and fluids. There are two methods currently in use: continuous ambulatory peritoneal dialysis and hemodialysis. Extracorporeal dialysis is performed using a dialyzer with an attached artificial kidney (Parimala & Sofia ,2021) .

The global incidence of hemodialysis increased 1.7-times from 165 to 284 patients per million population between 1990 and 2010, ESRD is closely associated with increased mortality due to infection, which accounts for approximately 20% of all deaths among these patients (Abbasi et al., 2020).

The prevalence of HD is frequently caused by an HD virus , and the global prevalence of HD infection in this population ranges from 1% to more than 70% ,According to 2016 estimates, almost 70% of Saudis were infected with the hepatitis C virus alone, and about 0.7% of Saudis had antibodies to the virus (Alshehri, 2021).

Since the early 2000s, advances in hemodialysis technology have significantly reduced dialysis-related mortality rates and risks of complications. However, the mortality rate among dialysis patients still exceeds 20% annually (Kim & Lee, 2023).

Patients undergoing dialysis should be screened at initiation or when transferred from another dialysis center , Initial testing using enzyme immunoassay (EIA) or nucleic acid testing is recommended, depending on whether the virus is circulating in the country and the specific dialysis unit (Nugroho et al., 2022) .

Real-time PCR (RT-PCR) detection of HCV-RNA is the most sensitive and specific method for detecting HCV, as some dialysis patients may test

negative for HCV antibodies but have HCV viremia (Khalaf & Hussein, 2022).

Chronic kidney disease impairs physical health and limits social and occupational participation, This condition severely limits normal functioning and requires frequent hospitalization ,Accepting the disease saves adjustment time and psychological suffering and improves patients' quality of life, Research suggests that dialysis patients have a lower perception of their quality of life than healthy people (Mohammed & Abdallah, 2019).

2.4 Type of Hemodialysis

There are two types of dialysis. Hemodialysis (HD) uses an external artificial kidney to clean the blood. In peritoneal dialysis (PD), the peritoneum serves as an artificial kidney (Timmers et al., 2008).

Patients undergoing peritoneal dialysis complain that the peritoneal catheter interferes with their normal activities. Some consequences include longer showers, needing to replace the bandage immediately to prevent infection, and restricted wardrobe options (de la Cuesta-Benjumea et al., 2023).

Some physical parameters to consider are the following: presence or absence of chronic comorbidities, severity of ureaplasma symptoms, length of dialysis duration, blood urea nitrogen (BUN), hematocrit, hemoglobin level, albumin, calcium, and phosphorus. Among the many psychosocial aspects are limitations imposed by treatment, increased dependence, changing family roles, marital conflict, fear of death, decreased social participation, and financial concerns (Yılmaz et al., 2023).

Patients with chronic kidney disease receiving dialysis should choose arteriovenous fistulas (AVF) or arteriovenous grafts (AVG) as the preferred method of vascular access, Evidence suggests that AVF and AVG are

superior to catheterization, with AVF slightly superior to AVG (Castro et al., 2020).

Several factors affect vascular access survival in hemodialysis. The duration of vascular access depends on patient characteristics, dialysis type, surgical technique, and cannulation methods (Castro et al., 2020).

End-stage kidney disease and hemodialysis dependence are associated with reduced health-related quality of life (HRQOL), which may be related to vascular access (VA) (Nordyke et al., 2020).

Arteriovenous fistula (AVF) is the most permanent type of vascular access for HD and has the lowest risk of complications, such as blood clots and infection, AVF is formed by surgical anastomosis between an artery and a vein. When high-flow arterial blood is diverted into a low-pressure vein, it causes gradual dilatation and thickening of the outflowing vein, known as the arteriole, The arterioles mature, indicating that the AVF is suitable for cannulation and HD, On average, AVF take 6 weeks to mature, with 25% of them never reaching this stage, It is difficult to predict a patient's kidney function; AVFs should be developed 3 to 6 months before expected requirements, This allows for appropriate maturation and surgical correction, reducing the need for HD via central venous catheter and the associated morbidity (Arasu et al., 2022).

According to Arasu et al. (2022) , Arteriovenous grafts (AVG) is fabricated by tunneling dilated polytetrafluoroethylene under the skin and connecting the outflowing artery and outflowing vein via surgical anastomosis. AVGs are usually matured for 2 weeks before cannulation to enable their incorporation into the surrounding tissue.

Central venous catheterization(CVC) is the most risky type of vascular access, with a 2- to 3-fold increase in morbidity and mortality. Financial barriers to establishing permanent vascular access before dialysis are a high initial AVF failure rate, poor long-term outcomes with

endovascular interventions, and inadequate surgical training ,Impaired vascular access results in decreased quality of life and decreased patient-centered outcomes. Female gender, aging, and a variety of comorbidities such as diabetes, cardiovascular disease, obesity, and frailty all increase the chance of vascular access failure (Vachharajani et al., 2021).

Central venous catheters are used for patients who require urgent HD while awaiting permanent access construction, maturation, or kidney transplantation, Permanent access to HD is available to patients who have exhausted AVF or AVG options, have serious heart disease, or have a short life expectancy (Arasu et al.,2022).

2.5 Type of Viral Hepatitis Infections.

Viral hepatitis, including hepatitis B virus and hepatitis C virus (HCV), is the most common cause of complications during HD treatment .Hepatitis B virus and hepatitis C virus infections are major contributors to liver damage in ESRD patients on HD . Patients are at increased risk for viral hepatitis infections due to their history of blood transfusions, frequent sessions, and potential exposure to sick patients and contaminated equipment .Longer duration of HD medication may increase the risk of HCV transmission (Athbi & Jasim, 2015).

In addition to the direct negative effect of the virus on the liver, with more than 40% of chronic hepatitis C (CHC) infections leading to cirrhosis after 30 years, CHC infection is also associated with extrahepatic manifestations, including kidney disease, The most common of which is membranous proliferative glomerulonephritis with or without the presence of cryoglobulins in the blood (Söderholm et al., 2018).

Globally, this disease affects millions of individuals and leads to increased morbidity and mortality. Hepatitis is mostly caused by viral hepatitis B and C, which cause persistent infection and inflammation of the liver, which may lead to fibrotic and fibrotic changes, about 257 million

people are currently infected with hepatitis B virus, and some researchers estimate the total number at 350 million. HCV infection affects 71 to 185 million people (Polukchi et al., 2022).

Hepatitis is mostly caused by viral hepatitis B and C, which are persistent infections that cause inflammation of the liver and can lead to fibrotic and cirrhotic changes, Chronic hepatitis D is one of the most severe types of chronic viral hepatitis and often spreads to the liver, causing cirrhosis and malignancy. The presence of hepatitis C virus infection is a necessary condition for the manifestation of pathology in chronic viral hepatitis (Polukchi et al., 2022) .

Hepatitis C virus (HCV) infection is consistently higher in dialysis patients than in the general population, and is prevalent in dialysis facilities worldwide, mostly in the Mediterranean region and emerging Middle Eastern and Far Eastern countries. Health-related quality of life (HRQOL) is negatively affected by hepatitis C virus (Timmers et al., 2008).

Hemodialysis patients are at increased risk for hepatitis C virus infection due to frequent blood transfusions, hospitalizations, and contaminated units. Hepatitis C virus and its consequences have a significant impact on the life expectancy of dialysis patients. Patients undergoing dialysis with hepatitis C virus (HCV) infection were more likely to die than those without infection (Akhtar et al., 2020).

In Europe, hemodialysis patients have a higher incidence rate of HCV than the general population, with lower rates in northern European countries like England and Sweden and lower rates in southern European countries like Italy and Spain (Al-Muramdy, 2020).

The primary way for transmitting hepatitis C virus is through contact with blood products. Currently, injecting medications directly into the veins is the primary element that greatly increases the risk of infection community transmission, leading to an increase in hepatitis C infection in

the United States since 2004, Hemodialysis patients are at risk of contracting hepatitis C virus from another patient due to possible exposure For blood. During treatment. Unfortunately, hepatitis C virus infections and transmissions continue to occur in outpatient dialysis facilities. Transmission of HCV in dialysis facilities occurs not only through contamination of machines, but also through equipment, supplies, infected surrounding surfaces, and the hands of healthcare workers as a result of inadequate infection control methods, use of specialized equipment or isolation measures for hepatitis C virus. Infected individuals without addressing basic infection control issues do not lead to successful transmission prevention (Nguyen et al., 2019).

The relationship between positive hepatitis C virus serostatus and survival in patients undergoing long-term hemodialysis is becoming clearer. Dimensional analysis evidence that positive hepatitis C virus (HCV) serostatus is an important independent risk factor for death in patients receiving maintenance hemodialysis . When people with HD contract the hepatitis C virus, it can lead to a host of problems, including anemia, poor quality of life, and even death (Alshehri, 2019).

Globally, 5% of chronic HBV patients have chronic viral hepatitis D, resulting in an estimated 20 million HDV infections (Polukchi et al., 2022).

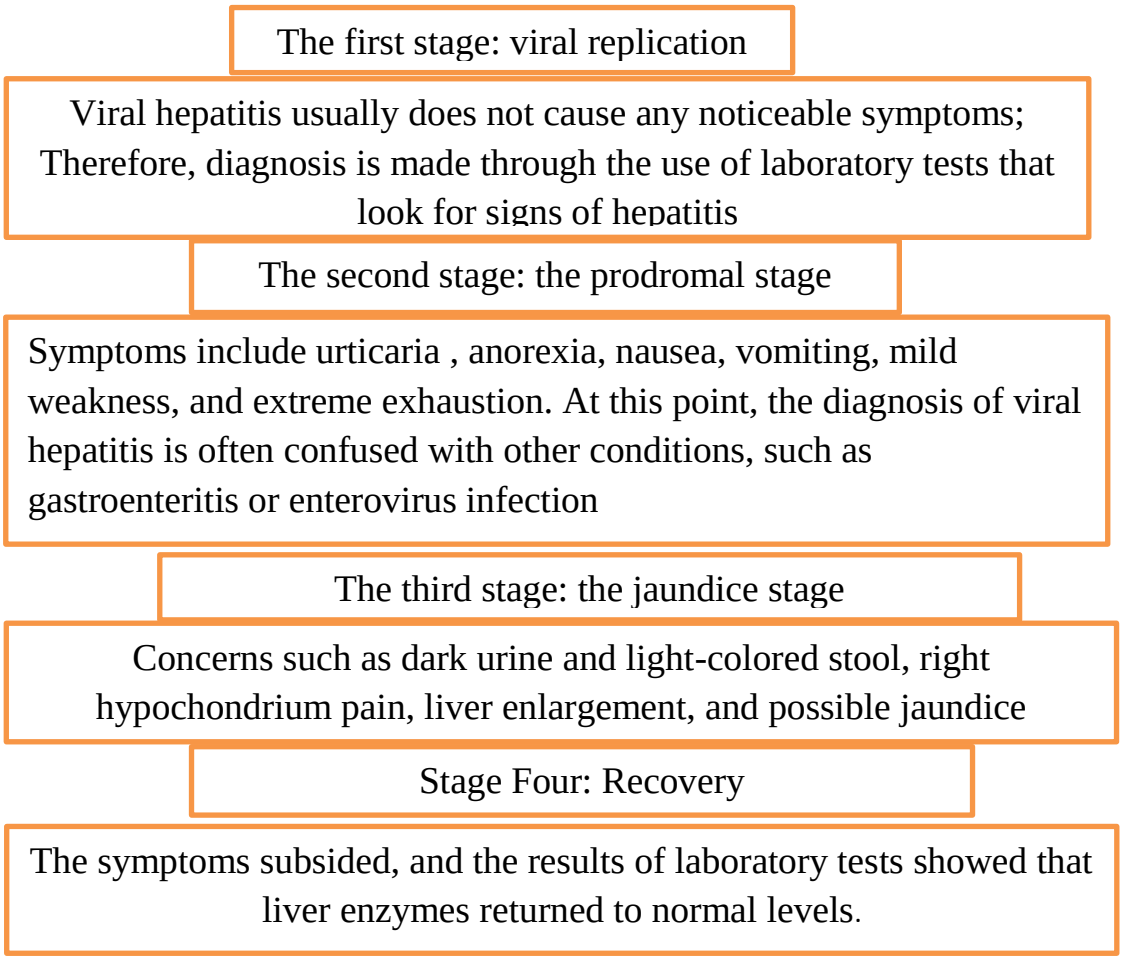
Previous research has shown that hepatitis patients have a significantly worse quality of life (QoL). Chronic hepatitis B and compensated cirrhosis have a modest effect on health-related quality of life (HRQoL), but decompensated cirrhosis and hepatocellular carcinoma have a significant negative effect. Hepatitis C virus infection leads to a substantial decline in health-related quality of life, even in the absence of other factors. In the presence of cirrhosis, effective treatment of hepatitis C virus is associated with an improvement in HRQoL, Hepatitis C is often

accompanied by fatigue and sadness, which is followed by a loss of interest in sexual activity. In addition, the antiviral medications often used to treat hepatitis C may lead to impotence and decreased libido,

Sexual dysfunction is the most common adverse effect of many antidepressant medications used to treat depression and anxiety that are caused by HCV combination therapy (Matreja et al., 2015).

Hemodialysis patients are at high risk for hepatitis B virus infection due to variables such as shared equipments , high exposure to blood and blood products, immunosuppression, and frequent skin violations. Although most cases of hepatitis B virus infection in dialysis patients are mild and asymptomatic, some may develop chronic liver disease, including cirrhosis and liver cancer (Al-Muramdy, 2020).

According to (Kozyk et al., 2023) study, acute and chronic viral hepatitis develop through four distinct stages, as shown in Figure 2.



A previous study showed that HRQL in hepatitis B patients decreases as the disease progresses to more severe stages .Despite being the most prevalent viral infection in the world, only a few studies have been conducted on HRQL in people with chronic HBV (Freeland et al., 2021).

2.6 Quality of Life in Patients With Viral Infections Undergoing Hemodialysis.

Research on health-related quality of life dates back in 1980s. Improvements in health care delivery have been found the purpose of significantly improving the standard of living of those suffering from long-term diseases such as cancer, kidney disease and stroke,, Internal and environmental factors contribute to the reduced quality of life experienced by people with chronic hepatitis C. Poor quality of life, especially in the early stages of hepatitis B diagnosis when medication is not available, can worsen symptoms of the disease. Measuring quality of life is essential for the clinical care of hepatitis B patients to avoid the consequences of the disease (Miftahussurur et al., 2020).

The Dialysis Outcomes and Practice Patterns Study DOPPS data were used to analyze mortality, hospitalizations, and quality of life among HCV-positive and HCV-negative individuals undergoing dialysis. Between 1996 and 2015, HCV-positive patients recruited into the DOPPS showed a greater risk of all-cause mortality (1.12 times higher than HCV-negative patients) (Nguyen et al., 2019).

Hepatitis C virus (HCV) infection is also a major concern in hemodialysis patients, especially after kidney transplantation while taking immunosuppressive medications . This is the most serious pathological disease that can lead to a deterioration in their quality of life. If these individuals are viable candidates for kidney transplantation, they should be treated, Both treated and untreated chronic hepatitis C patients on dialysis have an unknown quality of life (Akyüz et al., 2009).

2.7 Assessment of Health Related-Quality of Life

Health-related quality of life (HRQoL) is a multidimensional concept that includes domains related to physical, mental, emotional, and social functioning (Alshehri, 2019) .

The components of quality of life that are considered essential are multidimensional and subjective. Subjectivism says that quality of life can be like that It can only be acquired from the individual's perspective, so the only way to learn it is from him or her, direct communication with the person mentioned previously. However, it shows how multiple aspects of life differ depending on your point of view. It includes the medical, psychological, social or pathological condition of the individual (Rasyid et al., 2022).

Aristotle and Plato believed that the quality of life depended on the happiness derived from virtuous and good actions of the soul, not on the quantity of material goods. In the early 20th century and after World War I, quality of life was defined by material possessions, excellent standards of living, and time off for relaxation (Kafkia et al., 2017).

According to Kafkia et al., (2017), the term health-related quality of life (HRQoL), used in the 1970s, refers to how an illness affects the psychological, physical, and social aspects of a person's life, as well as the coping mechanisms used based on previous health experiences. HRQoL assesses functional abilities, emotional, cognitive, social, and sexual functioning, as well as self-perceptions of illness and health . It is the most reliable indicator of the disease and the impact of treatment on the patient's life.

Due to subjectivity, it is impossible to accurately determine a person's quality of life. Only this person can make this decision. Quality of life is defined by the World Health Organization Quality of Life (WHOQOL) cluster as an individual's assessment of his or her station in

life, within the cultural and societal context and value system in which he or she lives. and in relation to her social status, Or its own goals and standards, expectations and desires. This idea combines several approaches to achieving adequate levels of an individual's physical and mental well-being, functional independence, social interactions, and connection to the environment (Rasyid et al., 2022).

QOL assesses whole-person well-being, including physical, emotional, social aspects, stress level, sexual function, and self-perceived health status, Quality of life (QOL) and patient satisfaction are increasingly crucial in healthcare delivery (Parimala, & Sofia, 2021).

The term "quality of life" refers to the degree to which people are satisfied with their daily lives. Physical and mental health are considered quality of life, which indicates that if a person is physically or mentally healthy, he can be satisfied with his life. physical health can be assessed based on function, limitations, discomfort, and cognition. Mental health can be defined by restricted social function and emotional roles . Gender, stage of chronic kidney disease, frequency of dialysis, and social support influence patients' quality of life. Hemodialysis treatment negatively impacts patients' quality of life, causing fatigue, discomfort, anxiety, and a lack of ambition to recover (Dwi Nurbadriyah et al., 2023).

Quality of life consists of two components: subjectivity and multidimensionality. Quality of life is subjective and can only be measured by asking the individual directly. Quality of life is multifaceted, taking into account biological/physical, social and environmental factors. Polinsky defined quality of life as a combination of physical, psychological, social, and disease-related factors (Rasyid et al., 2022) .

The health status of individuals greatly affects their quality of life ,researchers have been studying the idea of health-related quality of life (HRQOL). Improved health care services can improve the quality of life for

individuals with chronic conditions including cancer, end-stage kidney disease, and stroke (Miftahussurur et al.,2020).

Health quality of life (HRQoL) is often assessed using self-reported questionnaires representing the previous month's functional level. Previous research has linked these ratings of HRQoL, which include physical and psychological components, to survival , chronic dialysis patients often experience physical symptoms such as pain, decreased appetite, and dizziness, which can lead to mental dysfunction and depression. A study of dialysis patients found that medical comorbidity preceded depressive symptoms , Psychological impairment may refer to physical disability but not to a specific disease (Peng et al., 2010).

The international literature notes a number of factors influencing health-related quality of life (QoL) in patients with chronic kidney disease (CKD). The domains of physical functioning, vitality, energy, mental health, and overall health have shown the biggest variations . Because the condition that chronic and hemodialysis puts a greater strain on patients, these factors are especially crucial (Rikos et al., 2023).

Even in those who have not experienced kidney failure, people with chronic kidney disease (CKD) believe that their quality of life is lower than that of the general public. People with chronic kidney disease (CKD) have a significantly reduced quality of life due to the disease's symptoms, regardless of the disease's stage. In addition, quality of life declines with declining kidney function (de la Cuesta-Benjumea et al., 2023).

Patients undergoing dialysis experience symptoms that interfere with their routine activities, reducing their performance and quality of life. According to recent studies, dialysis patients have a significantly worse quality of life than control group . Dialysis has a significant impact on patients' quality of life. because it affects their physical, psychological and social health, low blood pressure, cramps, nausea, vomiting, headache,

itching, heart pain, pericarditis, and fever with chills are all possible complications of dialysis treatment. Participants may experience sequelae, symptoms, or clinical problems after sessions, leading to functional limitations in their physical health (Floria et al., 2022).

Frequent dialysis treatments may lead to social isolation, decreased independence, and increased dependence on others for daily tasks. Many people are unable to continue working and may become socially isolated .(Jesus et al., 2019). Patients' quality of life is affected by several social and economic factors, including their marital status, access to private or public health care, educational level, age, and family environment (Floria et al., 2022).

Patients with chronic diseases, including end-stage renal disease, often experience psychological issues related to morbidity, mortality, and other difficult situations. problems. These diseases are often misdiagnosed and not treated. Collaboration with multidisciplinary teams, such as nephrologists, palliative care providers, and mental health professionals, is critical to address the increasing prevalence of depression and anxiety in this group, Depression affects one in five individuals with chronic kidney failure, which is higher than the rate among kidney transplant patients (Marsinova Bakara et al. ,2018).

Additionally, anxiety disorders can have a detrimental effect on a variety of everyday tasks and activities. Individuals suffering from generalized anxiety disorder (GAD) worry about a wide range of everyday events and activities. According to a systematic review study that included research done between 1994 and 2009, people who have chronic illnesses are more likely to experience anxiety (Alshelleh et al., 2023).

Previous research has found mixed results about the relationship between physical and psychological functioning and survival.

Health related to Quality of life may be affected in a subset of HCV-infected individuals, but not all. Recent research in France, the UK and Germany has produced a specific benefit value for CHC patients classified by stage of liver disease. patient characteristics such as male gender, unemployment, intravenous drug use, comorbidities, stage of liver disease , Acceptance of the condition and its social implications may negatively impact the HRQoL of CHC patients, in addition to its severity (Cossais, et al. ,2019).

Throughout the treatment period, many physical and psychosocial aspects have a negative impact on the life satisfaction of dialysis patients . The following physical factors are taken into account: presence of chronic pathological disorders, severity of uremic symptoms, duration of dialysis, albumin, calcium, phosphorus, hematocrit, hemoglobin level, and KUN. , as well as treatment-related limitations, Psychosocial problems such as stress, guilt, anxiety, aggression, feelings of worthlessness, and depression may arise from increased dependence on others financial problems, marital discord, anxiety about death, decreased social engagement, changing family responsibilities. Although dialysis treatment prolongs people's lives, it can have a significant impact on their lifestyle. Family relationships and individuals' self-efficacy and self-care can be negatively affected by adhering to a diet during dialysis, experiencing treatment-related symptoms such as nausea, vomiting, and weakness, and, ultimately, by living in dependence on the device for survival and deteriorating (Yılmaz et al., 2023).

Patients with end-stage renal disease (ESRD) who undergoing hemodialysis (HD) may experience a decrease in their quality of life (QOL) at different stages of the disease. This can be attributed to factors such as the duration of dialysis sessions, accessibility of treatment, problems with vascular access, and the overall impact of the disease. Furthermore, their

general well-being, medical condition, satisfaction with health care, and demographic information all influence their quality of life. Moreover, the patient's social interactions, psychological well-being, physiological well-being, and ability to carry out routine activities may be affected. The health of individuals undergoing dialysis has a significant impact on their chances of survival, the frequency of hospitalizations, and the overall progression of their disease (Naseef et al., 2023).

Quality of life is often used to evaluate health outcomes .Assessing quality of life, documenting the burden of chronic disease, tracking health changes over time, evaluating treatment effectiveness, and calculating return on health investments are critical . patients with chronic kidney disease require dialysis for most of their lives, which can lead to poor physical and mental health. Symptoms such as weakness and dependence on family can negatively impact quality of life (Bayin donar, 2022).

2.8. Overview About Viral Infection

Individuals undergoing chronic hemodialysis (HD) are at high risk of infection because the procedure requires continuous vascular access. When a large number of patients undergo dialysis at the same time, disease-causing germs can spread through contaminated devices, equipments, supplies, surrounding surfaces, or the hands of health care personnel. HD patients are more susceptible to infections due to immunosuppression, frequent hospitalizations and surgeries, which increases the risk of nosocomial infections .(Athbi & Mohammed,2012)

In many countries, the prevalence of HCV infection ranges from 1–2%, with higher prevalence in hemodialysis patients. Long-term multicenter studies in developed countries have reported a prevalence of about 10% among hemodialysis patients, and the prevalence is much higher in less developed countries. According to an Indian study, the prevalence of HCV among hemodialysis patients ranges from 6.7 to 35.6%, and

incidence rates are largely influenced by infection control practices, nosocomial infections, hepatitis C virus transmission, and frequency and duration of dialysis (Kalita et al., 2021).

According to a new study by Neokosmidis et al. (2023) , infection with hepatitis C virus (HCV) is a risk factor for cardiovascular disease. Also, chronic HCV infection causes inflammation in the liver and organs, leading to elevated levels of pro-atherogenic chemokines and cytokines, which have been linked to atherosclerosis. Hepatitis C virus (HCV) infection can increase the risk of developing chronic kidney disease (CKD). HCV is associated with chronic kidney disease for two reasons: individuals with CKD may be exposed to the virus during dialysis, and HCV infection can cause kidney failure.

According to study, in European dialysis centers , the proportion of patients infected with hepatitis C virus ranges between 2% and 34%. Italy (27%), Poland (29%), and Romania (34%), with infection rates ranging from 2% in Great Britain to 5.7% in Switzerland, and the greatest in Poland and Italy. Between 41.9% and 45.5% of dialysis patients in Saudi Arabia who tested positive for anti-HCV were found to be infected with HCV. Long duration of systemic dialysis (>4 years) and number of blood transfusions (>5) In the past this has been calculated. Patients with chronic renal insufficiency (CRI) stage 5 were surveyed at 18 dialysis centers in Japan to determine the frequency of detection of hepatitis C virus (HCV) antibodies. It was found that 22.2% of them tested positive for hepatitis C virus, and the length of dialysis was associated with the frequency of recurrence of infection. According to studies, 90-95% of patients entering dialysis programs have no signs of hepatitis and only become infected during treatment (Venytska & Riabokon , 2022).

2.9. Complications

Acute complications of hemodialysis refer to clinical symptoms that develop during or within 24 hours after dialysis ,

Hemodynamic problems are a common complication for individuals receiving HD ,. Ultrafiltration (UF) or fluid removal during HD often lowers blood pressure. Intradialytic hypotension occurs in 20-30% of individuals receiving regular HD , anemia is a frequent issue in hemodialysis patients due to insufficient production of erythropoietin due to renal failure, arrhythmias are a common complication of hemodialysis, with rates ranging from +5% to 75%. Arrhythmias, particularly ventricular and ectopic, are the most frequent and fatal , during the first years of dialysis treatment, cramps problems occur in 24%-86% of cases. However, only 2% of patients experience cramps after ≥2 dialysis sessions per week . Common complications include nausea (5%-15%), headache (5%-10%), and itching (5%-10%) (Lubis et al., 2019).

Complications of CKD, including anemia, cardiovascular disease, osteodystrophy, depression, and muscular dystrophy, are associated with poor quality of life for HD patients. In addition to common symptoms such as fatigue, itching, anorexia, pain, sleep disturbances, anxiety, and nausea, CKD patients on HD face additional stressors such as severe dietary restrictions, sexual dysfunction, loss of function, dependence on machines, and high mortality rates. Unfortunately, some of these variables that reduce quality of life are not modifiable (Marques et al.,2021).

Initial symptoms include insomnia, apathy, nausea, and weakness. The consequences of uremia develop slowly and include profound coma, recurrent vomiting, convulsions, insomnia, pale and dry skin as well as Kussmaul-pattern breathing (Abu El Kass et al., 2020).

In study Dialysis patients often experience side effects such as cardiovascular disease, which reduces their quality of life. In addition,

patients receiving dialysis have a much lower quality of life due to comorbidities such as anemia, diabetes, hypertension, dyslipidemia, and thyroid problems, which have a detrimental impact on their social, economic, physical, and mental health (Alhajim, 2017).

In another study in Pakistan, patients on dialysis who also had HTN had a significant reduction in HRQoL. Among participants ,pain/discomfort was the most difficult dimension (Aslam et al., 2022).

Chronic kidney failure patients undergoing dialysis usually suffer from fatigue. Fatigue not only impairs physical and social functioning, but is also associated with worse quality of life in HD patients and mortality in chronic hemodialysis recipients, Fatigue in hemodialysis patients can lead to decreased motivation, disruption of social contacts, poor sleep quality, and increased pain, all of which can have an impact on patients' quality of life (Cahyati & Rosdiana, 2022).

Patients with end-stage renal failure often suffer from depression, a common psychological disorder. Depression is thought to be more prevalent in HD patients compared to the general population , end-stage renal disease (ESRD) patients on regular hemodialysis (HD) were 46% more likely to have depression compared with the general population, Patients with depression and chronic renal failure may experience decreased performance, decreased physical activity, and poor quality of life. Patients with ESRD have greater rates of depression than those with cancer or congestive heart failure (Moustafa et al., 2023).

2.10 Hemodialysis and Sociodemographic Characteristics

In end-stage chronic kidney disease (CKD), patients need life-sustaining treatments that can be physically and mentally demanding. Factors such as fatigue, impotence, unemployment, financial difficulties, limited transportation options, insurance and social service limitations, and depression all significantly impact dialysis patients (Moustafa et al., 2023).

Hemodialysis patients' HRQoL is impacted by medical care, illness duration, therapy, underlying illnesses, symptom intensity, side effects, and demographics (age, gender, race, academic background, occupation, and socioeconomic position) (Gahatraj et al., 2024).

Many factors affect quality of life in chronic diseases, such as the type and duration of condition, treatment and side effects, severity of symptoms, medications, patient age, limitations, and ability to self-care (Barreto et al., 2023).

Because of the impact of end-stage renal disease, comorbidities, and dialysis on daily life, hemodialysis patients are more likely to have psychological problems, limited economic activities, and worse quality of life (QoL) (Kim & Lee, 2023).

Dialysis patients frequently suffer from hypertension, diabetes, coronary artery disease, congestive heart failure, hepatitis B, and cerebrovascular disease (Cha & Han, 2020).

The impact of nutrition on the quality of life of patients with end-stage renal disease (QoL) has been extensively studied. previous research has found that a higher body mass index (BMI) is associated with a better quality of life. This behavior is often called the “obesity paradox”. Other research suggests that lean body mass (LBM) improves quality of life. Patients with a greater BMI and fat content had a higher mortality rate (Nugroho et al., 2022).

Patients with chronic kidney disease (CKD) face psychological challenges that affect their health, such as coping with a life-threatening diagnosis, ongoing treatment, dialysis, side effects, and consequences (Alshelleh et al., 2023).

Psychological problems are often associated with chronic diseases, especially in people with end-stage kidney disease. ESRD patients on dialysis had a 1.5 to 3 times greater rate of psychiatric hospitalization than

did other chronic conditions , because these patients are likely to face various problems as a result of treatment methods, in addition to the physical effects of the disease. Both the condition and continued dependence on the machine and/or treatment team have a negative impact on quality of life (Baykan & Yargic, 2012).

2.11. Previous related studies:

First Study:

Firoz et al (2023) a study was to conducted in the dialysis unit of Kasturba Hospital, Manipal to investigate the clinical profile and quality of life using KDQoL SF 36 questionnaire and variables affecting the quality of life of dialysis patients. methods the study included 45 people who started dialysis in 2018 or 2019 and were receiving treatment at our institution. result the average age of the 45 participants was 55.29 (11.29) years, 77.8% of whom were male and 22.2% female. Dialysis was initiated in 23 patients in 2018 and 22 patients in 2019. The prevalence of hypertension in this group was 95.2%, 35.6% for diabetes, and 8.9% for cardiovascular disease. Mean subscale scores were examined using manual scoring and descriptive statistics. Hemoglobin levels and intradialytic weight gain have been shown to correlate positively with the Summary of physical and mental components (PCS and MCS, respectively).conclusions disease of the kidneys was positively associated with dialysis. Due to the limited study sample size, we were unable to determine other factors that influence quality of life ratings.

Second Study:

A study was conducted by Afsar et al. (2022) sought to determine the quality of life of hemodialysis patients; hepatitis C virus (HCV) infection is a plausible explanation, Quality of life (QOL) is worse for individuals with hepatitis C virus (HCV) infection than for patients not on dialysis. It is unclear how HCV infection affects the quality of life of dialysis users. This

study specifically investigated the association between HCV infection and subjective well-being .Technique for collecting biomedical, socioeconomic, and ethnic data. Severity of depressive symptoms and quality of life were assessed using the Beck Depression Inventory (BDI) and the Short Form 36 (SF-36).A total of 165 patients were analyzed, 83 of whom tested positive for hepatitis C virus (HCV) antibodies and 82 of whom tested negative for antibodies. Patients who tested positive for HCV antibodies had lower BDI scores than those who tested positive for antibodies (P = 0.011). Except for social functioning, all SF-36 subscales were worse in HCV antibody-positive patients than in HCV-negative individuals. Compared with HCV antibody-negative individuals, those who tested positive for HCV antibody performed worse on the mental component summary (P = 0.018) and physical component summary (P = 0.003) tests. The physical component summary score was positively associated with hemoglobin (P < 0.0001), albumin (P = 0.002), sleep disturbance (P = 0.046), BDI score (P = 0.027), and length of dialysis (P = 0.003). Physical symptoms were not associated with being HCV antibody-positive. BDI score (P = 0.001), serum hemoglobin (P < 0.0001), hepatitis C virus antibody positivity (P = 0.016), and mental component summary score were significantly associated with each other.

Third Study

Touil et al.(2022) have studied about the quality of life and its generating factors in hemodialysis patients in morocco, many recent researchers have found that the quality of life of dialysis patients has changed. The purpose of this study was to evaluate the quality of life of patients with end-stage chronic renal failure undergoing dialysis and to identify the main causes of this condition, cross-sectional study was conducted on 70 dialysis patients with chronic renal failure at a regional hospital in Kenitra, over a period of three months. A questionnaire was

used to collect data on the sociodemographic, clinical and nutritional characteristics of dialysis patients, as well as the KDQOL scale to measure their quality of life. KDQOL-36 scores were used to assess family support, social support, and caregiver support .the mean age was 51.66 ± 15.96 years, and 57.1% of patients were female. The study found lower quality of life scores for the dimension "physical health component" (27.64 ± 29.13), "mental health component" (37.81 ± 22.99), and "effects of kidney disease on daily life" (48.41 ± 21.22). .), and the dimensions of "burden of kidney disease" (28.47 ± 21.50). The "kidney disease symptoms/problems" scale is 64.61 ± 17.98, which is close to normal. The results indicated that different aspects of quality of life are associated with age, gender, marital status, education level, presence of a transplant plan, presence of comorbidities, and duration of dialysis. The study discovered a link between family social support and quality of life, including "burden of kidney disease," "impacts of kidney disease on daily living," and an overall quality of life score. On the other hand, there is no significant association between caregiver support and outcomes. the study conclusion the quality of life of dialysis patients deteriorates. It is influenced by a variety of factors, including social support from family and caregivers. The involvement of the family and health care team in the psychological support process is crucial.

Fourth Study:

A study was conducted by Yonata et al (2022) to evaluate the quality of life in patients with chronic kidney disease receiving dialysis and to determine the factors that affect it. hemodialysis is one of the primary treatments for end-stage kidney disease. Quality of life is crucial in the treatment of chronic kidney disease (CKD) patients receiving dialysis. Factors that affect the quality of life of dialysis patients must be recognized. this study used an analytical survey using a cross-sectional design. The SGA questionnaire assessed nutritional status, while the

KDQOL-SFTM questionnaire measured quality of life. The bivariate statistical test used was either Student's t -test or Mann-Whitney U test. Logistic regression was used in multivariable analysis.

The research included a total of 124 dialysis patients. Their average age was 44 years. Patients were divided between 66 (53%) men and 58 (47%) women. Overall, 84 patients (67.7%) rated quality of life as high, while 40 (32.3%) reported low quality of life. The study found a significant association ($p = 0.029$) between economic status and quality of life, as well as an association ($p = 0.014$) between pathological components. There was no significant association between nutritional status and quality of life ($p = 0.121$). Logistic regression analysis revealed that comorbidities significantly influenced quality of life ($p = 0.004$).the study conclusion most dialysis patients have an excellent quality of life. A logistic regression study revealed that the number of comorbidities had a significant impact on the quality of life of dialysis patients. comorbidities in dialysis patients should be addressed to improve their quality of life.

Fifth Study:

A study by Munib et al (2021) was conducted impact on the patient's quality of life. The purpose of this study is to evaluate the health-related quality of life of dialysis patients. single-center cross-sectional survey was conducted in the Department of Nephrology at the Institute of Kidney Diseases, Peshawar, Pakistan, from March to June 2018. Patients' quality of life was measured using the validated 36-item Urdu KDQOL test.the research included 184 people with chronic kidney disease and undergoing dialysis, 63.6% of whom were male and 57.1% were Pashtun. Patients with kidney disease associated with hypertension had significantly higher levels of KDCS (45%), PCS (16%), and MCS (60%). Peshawari patients had a 22% lower PCS score than other ethnic groups, but a 16% higher MCS score, which was statistically significant. conclusion patients receiving

dialysis treatment have a lower quality of life in all three domains (PCS, MCS, and KDCS).

Sixth Study:

Abu El Kass et al. (2020) a study was to look at quality of life and the factors that affect it in dialysis patients , hemodialysis is a treatment option for people with end-stage renal disease (ESRD). ESRD and dialysis have a significant impact on individuals and families, including changes in health status, lifestyle and more duties, leading to a worse quality of life. used a cross-sectional descriptive design. The KDQoL-SF version 1.3 was used to evaluate the quality of life of 93 adult male and female patients from the dialysis unit at Al-Shifa Hospital in the Gaza Strip. the study found that the quality of life of individuals undergoing HD was severely affected. Many clinical and demographic characteristics, including gender, employment, and income, have been shown to have a significant impact on quality of life. However, physical and psychological problems were the strongest indicators of poor quality of life. conclusion the study found that age, gender, occupation, marital status, type of work, socioeconomic status, place of residence, and educational level all have an impact on patients' quality of life. Satisfaction is strongly influenced by spiritual dimensions and general health, while physical, psychological and social quality of life is least affected.

Seventh study

J.Cha et al., (2020) a study was to detect comorbidities in end-stage renal disease patients and measure their health-related quality of life (HRQOL) in relation to the type and number of comorbidities. (250)dialysis patients were recruited from local clinics. HRQOL was measured using the 12-item Short Medical Outcomes Study Questionnaire. The data was examined using descriptive statistics, analysis of variance, and t-tests. About 70.8% of patients with end-stage renal disease have one or more

comorbidities, the most common of which are hypertension, diabetes, and cardiovascular disease. HRQOL differed significantly from comorbidities ($F = 9.83$, $P < 0.001$). Comorbidities did not have a significant effect on the mental health domain scores of the HRQOL questionnaire, but the physical domain scores were final. Among comorbidities, diabetes was associated with poorer quality of life. Effective care for individuals with diabetes and hypertension is critical to preventing CKD, delaying its course, and controlling cardiovascular risk factors.

Eighth study

A study was conducted by Lee, et al.(2020) the impact of several components of health-related quality of life (HRQOL) on dialysis prognosis is limited. The study focused on clinical parameters that influence HRQOL and their impact on long-term survival in the Asian population. This nationwide prospective cohort study included 568 dialysis participants in total. At 3 months after starting dialysis, HRQOL was assessed using the Kidney Disease Quality of Life (KDQOL) short form TM 1.3 instrument. The effect of each KDQOL item score on mortality was studied. After controlling for age, sex, modified Charlson comorbidity index, and major causes of kidney disease, a multivariable Cox analysis was performed. Poor physical health was associated with factors such as age, diabetes, comorbidities, and low blood albumin levels. Low urine output was associated with poor physical and mental health. the three indicators of the kidney disease domain (impact of kidney disease, social support, and encouragement of dialysis staff) and the three indicators of the physical health domain (physical function, physical role limitation, and body discomfort) had significant relationships with mortality. The four mental health indicators and the mental composite score were not significantly associated with death. Higher somatic composite scores were associated with lower overall patient mortality ($P = 0.003$). Physical

composite scores had a significant impact on survival in the young or middle-aged groups. the study Conclusion Poor physical health three months after starting dialysis is strongly associated with overall mortality.

Ninth Study

A study was conducted by Elhadad et al.(2020) ,the cross-sectional study, patients' quality of life (QOL) and psychological evaluation of ESRD patients receiving dialysis were the main objectives. One hundred and seventeen patients with end-stage renal disease, aged 26 to 77 years, were admitted for dialysis from the hospital's dialysis unit and Menoufia University Hospital. Cases were recruited between October 2018 and May 2019 for the duration of the study, when ESRD patients with depression were compared with those without depression, lower scores were observed in all domains of quality of life. Between the quality of life of ESRD patients and the presence of diabetes or hypertension as a clinical condition, conclusions patients receiving dialysis for end-stage renal disease have a high incidence of mental distress. Anxiety and depression are two conditions that often show decreased quality of life (QOL). Patients with end-stage renal disease (ESRD) also showed a decrease in quality of life (QOL).

Tenth Study

A study by Khasal et al., (2019) was conducted on the impact of psychosocial difficulties on the health of hemodialysis (HD) patients is often overlooked. Chronic illness and treatment can increase stress, which may affect psychological and physical outcomes. A descriptive research was conducted to evaluate psychosocial distress among dialysis patients with chronic hepatitis C virus infection. 60 dialysis patients were unlikely to be infected with chronic hepatitis B and C virus. A pilot research confirmed the reliability of the questionnaire, while a panel of experts assessed its content validity. Data were obtained using an observation tool

(questionnaire) and evaluated using three statistical techniques. There are three types of statistical analysis: descriptive (frequencies, percentages, S.D., range, mean, and relative sufficiency), inferential (correlation coefficient and chi-square test), and analysis of variance (ANOVA).the study found that hemodialysis with chronic viral hepatitis had an effect on the psychosocial domain. The study found a negative association between socio-demographics and psychosocial factors, with the exception of income and socioeconomic position at the social relations/support domain. The study suggests that sharing health insurance and providing psychological support to hemodialysis patients with chronic viral hepatitis might help them accept their status and keep a pleasant life

Eleventh Study

Cossais et al (2019) a study was to identify clinical and non-clinical factors in France associated with HRQoL and untreated chronic hepatitis (CHC). methods between 2014 and 2015, untreated CHC patients at three French sites (Paris, Lille and Montpellier) were invited to complete a questionnaire measuring general health and fatigue using the EQ-5D and two visual analogue scales. Responses were assessed using mixed models (including cluster effects for centers and physicians).results five hundred and five individuals were included in the study; Men made up 52% of the population, the average age was 54 years, 41% had a body mass index (BMI) greater than 25, 64% had genotype 1, 36% were in the severe fibrosis stage (F3-F4), and 38% were % of them suffer from major comorbidities unrelated to the liver. Using univariate analysis, the EQ-5D was found to be useful with respect to: sociodemographic factors (e.g., age, place of birth, education, employment); Factors associated with CHC (eg, HCV screening conditions and severity of fibrosis); Non-CHC-related factors (eg, weight gain, psychiatric disorders, non-CHC-related comorbidities); and feelings related to CHC disease (eg, perception of

progress, lack of knowledge about CHC and its treatments, and entourage). Not being at work (0.72 vs. 0.80), having severe comorbidities other than CHC (0.72 vs. 0.79), being overweight (0.73 vs. 0.78), and worrying about getting CHC (0.66 vs. 0.72-0.84) all contributed to a lower incidence rate. With illness. Usefulness of the EQ-5D in multivariate analysis. With value-added services. conclusion there are serious comorbidities and concerns about the course of CHC, but stage is irrelevant. In French CHC patients, fibrosis was found to significantly affect the utility of the EQ-5D**.**

Study twelve

A study by Goodkin et al (2017) was conducted on the Hemodialysis Outcomes and Practice Patterns Study is a prospective cohort study of HD patients worldwide. Between 1996 and 2015, 76,689 people were registered and screened for hepatitis C virus infection. The study compared HCV-positive (HCV+) and HCV-negative (HCV2) individuals in terms of mortality, hospitalization, low hemoglobin concentration (8.5 g/dL), and red blood cell transfusion. We compared health-related quality of life ratings using the Kidney Disease Quality of Life Instrument and the Center for Epidemiological Studies Short Form Depression Scale. took into account age, sex, race, years of dialysis, 14 comorbid conditions (including hepatitis B infection), and serum albumin, phosphorus, and creatinine concentrations, results 7.5% of patients were HCV positive (HCV+) when they participated. Quality of life assessments showed that HCV+ patients had significantly worse ratings of physical function, pain, vitality, mental health, depression, pruritus, and anorexia , conclusions hepatitis C virus infection in HD patients increases the risk of death, hospitalization, anemia, and poor quality of life. hepatitis C virus (HCV) infection in individuals with HD is rarely treated globally.

Thirteenth Study

A study was conducted by Ezzat et al (2015) health-related quality of life (HRQOL) is a multidimensional term that measures a patient's subjective well-being. It has been clearly demonstrated that HCV has a detrimental effect on HRQOL. The purpose of this study was to evaluate HRQOL in Egyptian hemodialysis patients infected with hepatitis C virus (HCV) and identify potential risk factors. the study included 200 end-stage kidney patients who receive regular dialysis at Ain Shams University and the National Institute of Kidney and Urology. They were divided into two groups according to their HCV Ab status: seronegative or seropositive. Both groups received a complete medical history and evaluation. The levels of hemoglobin, blood urea, creatinine, calcium, phosphorus, PTH, ALT, AST, albumin, and viral indices were checked in the laboratory before lysis. The Short Form 36 (SF-36) was used to measure HRQOL, while Kt/v was used to measure dialysis adequacy. Each dimension is scored on a scale from 0 to 100 by participants. Higher scores mean better health. the study showed that HCV-seropositive patients had worse HRQOL than HCV-seronegative patients. This was evident in most of the SF-36 subscales, with higher scores for employed patients compared to unemployed patients and those with higher hemoglobin levels. Serum creatinine, dry weight, and serum albumin levels were significantly higher before dialysis compared to post dialysis results. Elevated liver enzymes and dialysis adequacy showed no statistically significant relationship with SF-36 scale scores. Serum phosphate and PTH had a significant negative relationship with HRQOL. conclusion HCV infection has a negative impact on HRQOL in hemodialysis patients. Male gender, younger age, employment, and increased hemoglobin, serum creatinine, and serum albumin all contribute to improved HRQOL.

Summary

Viral hepatitis infections is a major cause of morbidity and death in dialysis patients and is one that they are very susceptible to contracting.

Hemodialysis is the most widely used treatment for end-stage kidney disease. Medical professionals take a number of factors into consideration when choosing a dialysis method for patients with chronic kidney disorders, including health-related quality of life (HRQoL). Patients on hemodialysis should seek appropriate care and improve their HRQoL, and research like this can help people understand these patients' experiences better. The mental health of dialysis patients is particularly vulnerable to the adverse effects of hepatitis C virus infection on quality of life.

Chapter Three

Methodology

Chapter Three

Methodology

When conducting scientific research, it is important to adhere to a set of special standards and controls known as scientific research methodology. From the early stages of the research process to its conclusion, this section covers study design and all other scientific procedures. All methodological techniques used in designing this study will be discussed in this chapter: the study administrative agreement, ethical dilemma, sampling strategy, inclusion and exclusion criteria, investigation phase, study instrument, and collect and analyze data techniques.

3.1. Design of the Study:

Comparative study was conducted to evaluate impact of viral hepatitis infections on health-related quality of life in patients undergoing hemodialysis for two groups of samples (positive and negative) viral hepatitis .The study was initiated from the period of October 2023-Aguest 2024 .

3.2. Administrative Arrangements:

1-To officially start this research, an application must be submitted to the relevant official authorities in sector.

2- The title, objectives and prepared questionnaire were submitted to the Research Ethics Committee of the college of Nursing, which evaluated the study materials (questionnaire) and authorized the conduct of the study (Appendix A).

3- University of Kerbala / the College of Nursing issued an official administrative request to enable sample collection. After that, the college of nursing/university of kerbala submitted an official administrative request to the Holy Kerbala Health Directorate (see Appendix B).

4. The Kerbala Health Directorate (Training and Development Department) assigned the researcher to complete the research protocol/Ministry of Health permission form (Appendix B1), which includes related information to search ..

5. The permission form is then sent to the Training and Development Department. Obtain a permit from the hospital to collect samples.

6. Upon completion of the administrative procedures, an official letter from the Kerbala Health Directorate (Training and Development Department) permitting application to the College of Nursing/University of Kerbala (Appendix B2).

7. Consent enabled the researcher to interview dialysis patients at the Habib bin Mazahir and Adel Al-Sabah centers using the questionnaire format after obtaining their permission to participate.

3.3. Ethical Consideration

The researcher obtained informed consent from all patients. Before patients participate in the study, the researcher explains the aim of the research to them. According to the subject consent sheet, the researcher also informed participants that their participation in this study was voluntary and assured them that he would maintain the confidentiality and security of the data throughout and after the study. (Appendix A)

3.4. Setting of the Study:

This research was conducted in Imam Hussein Medical City. Two centers: Habib bin Mazaher for the negative group and Adel Al-Sabah center for the positive group. The deals with patients suffering from hemodialysis . It provides medical services daily for 24 hours. It receives emergency patients to provide the necessary therapeutic interventions.

3.5. The Sample of the Study:

Non-probability (purposive) sampling /100 patients participating in this study, the participants assigned into two groups: 1) Viral Hepatitis Infections, 2) Non-Viral Hepatitis Infections

3.5.1. Inclusion criteria:

- Patients aged 19 years and older,
- Who were diagnosed infection
- Receiving medical care at the dialysis unit.
- The diagnosis was done via a special test

3.5.2. Exclusion criteria:

- Dialysis less than 6 month ,
- Patients who refused participate in the study,

3.6. Data Collection:

Data were obtained through interviews .For the period from (10 April to May 12, 2024), interviews were conducted with dialysis patients in dialysis centers in the holy city of Karbala to fill out the questionnaire after obtaining permission from the Karbala Health Department and the patients' consent. To participate in the interview, the researcher then explains the goal of the study in a simple way. A questionnaire form for patients who are unable to read and write was filled out by the researcher. Patients visited the centers in the morning and evening, divided into three sections in each of the positive and negative centers for patients with viral liver diseases. The researcher collected this data within the centers, the average time (10-15) minutes required for each patient to complete the questionnaire form about. impact of viral hepatitis on health-related quality of life of dialysis users.

3.7. The Study Instrument:

To complete the aim of study, a form was designed and formulated after a comprehensive evaluation of previous research and literature. The questionnaire is divided into two parts [Appendix C].

Part One: - Details about patients demographics, including age, gender, marital status, place of residence and degree of education , occupation, economic status ,duration of dialysis treatment, duration of dialysis per hour per day ,duration of dialysis per week, chronic diseases.

Part Two:- The WHOQOL-BREF was the final section of the To evaluate health of quality of life. Answers varied since “not always” toward “to a great extent.”

In order to measure the quality of life of people with end-stage kidney disease (ESKD), the WHOQOL group created a health-related questionnaire called the WHOQOL-BREF. Physical health, mental health, social interactions, and environmental factors are the four aspects of quality of life that the 26-item examination examines. patient has the option of completing the questionnaire independently or having it conducted by an interviewer. Outcomes were assessed after completion of the WHOQOL-BREF questionnaire by study participants, were derived from the raw scores. Higher quality of life is associated with higher grades. analyzed the collected data. Assessment tool, including 26 questions, divided to items

-Physical health = $4x((6 – Q3) + (6 – Q4) + Q10 + Q15 + Q16 + Q17 + Q18)/7$

-Psychological health= $4x(Q5 + Q6 + Q7 + Q11 + Q19 + (6 – Q26))/6$

-Social relations = $4x(Q20 + Q21 + Q22)/3$

-Environment = $4x(Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25)/8$

used SPSS version 26 with a p value of less than 0.05. Normality was assessed. Data were found to meet the assumptions of parametric statistics using the Kolmogorov-Smirnov test.

3.8. The Validity of the Study Instrument

To improve the validity of the instrument, an expert panel of 9 . (face validity method) (Appendix D) study areas examined it. The experience of the members of the panel of experts are not less than thirteen years in their field of specialization. The researcher presented each expert member with a proposal, and the experts evaluated the study questionnaire in terms of content, style, appropriateness, simplicity, and relevance. The experts' evaluation of the questionnaire revealed that they all agreed with its suitability for the study's measurement and clarity. The tool is considered legitimate after taking into account the opinions and recommendations of experts, and the experts are distributed according to fields (Table 3-1).

Content validation is the process by which the components of a questionnaire are linked to and communicated with the intended idea of assessing a particular topic. After determining the content validity index, the researcher verified the information. In order to implement the content validity procedure, The validation was developed by evaluating the opinions of specialists who were well acquainted with the process and objectives.

Table (3-1): The Experts' Distribution According to the Field.

Experts	Number
Faculty member from College of Nursing/ Kerbala University	1
Faculty members from the College of Nursing/ Baghdad University	3
Faculty of Nursing at the University of Al-Ameed	1
Faculty of Nursing at University of Kufa	2
Ministry of Health	2
Total	9

3.9. The Pilot Study

perform a pilot study prior to collecting data in order to evaluate reliability of study instrument. It was conducted in the Habib Ibn Mazahir Center and the Adel Sabah Center in the period from (January 21 to 28),2024 on a pilot study sample consisting of (10) patients who were not included in the study's initial sample.

3.9. 1. The objectives of the pilot study

were as follows:

1. Evaluating the reliability of the questionnaire.

2- Ensure the clarity and adequacy of the content of the questionnaire form in terms of the extent of study individuals' understanding, and make a decision regarding any necessary changes.

3- Determine the time required to complete the questionnaire.

4. Determine best strategy required to determine the nature of any challenges that may arise.

3.9.2. Results of the pilot study:

1. The reliability of the questionnaire is assessed.

2.The questionnaire paragraphs should be clear, easy to understand, and sufficient to evaluate the phenomena under investigation.

3. The estimated time to complete the questionnaire is approximately 10 to 15 minutes.

3.10. Study Instrument Reliability

The reliability of the study tool was evaluated using Cronbach's alpha coefficients (Table 3-2). The test results showed satisfactory as shown below for the format of the structured questionnaire that was conducted on a sample of (100), which constitutes 10% of the total population.

Table (3.2) Reliability of the Study Questionnaire

Study Scale	Technique of Reliability Estimation	Number of Items	Minimum Accepted limit	Actual Value
Health-Related Quality of Life	**Cronbach's Alpha**	**26**	**0.70**	**0.87**

Normality Testing:

Before statistical analysis, the main studied domain (Health Related Quality of Life) is tested for statistical The standard model used evaluations using Kolmogorov-Smirnov and Shapiro-Wilk variables. Before analyzing the data, it is crucial to consider this aspect in order to determine the appropriate statistical procedures to be used, whether parametric or non-parametric statistics.Table (3.3) Hypothesis testing Summary for the Studied Domain and its Sub-Domains

Main Studied Domain	Kolmogorov-Smirnov[a]			Shapiro- Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Overall Assessment of Health-Related Quality of Life	.121	100	.001	.941	100	.000

Based on the significant value presented in table (3.2), the study results indicate that the null hypothesis is rejected at the overall assessment of the health-related quality of life. Therefore, The study data deviate from the normal distribution within a confidence range of 95%. Thus, non-parametric statistics is the appropriate method for analyzing the data in this study.

3.11 Analysis of data

The data was analyzed and interpreted using SPSS version 26, which is the Statistical Package for the Social Sciences.

3.11.1 Descriptive Statistical Tests

a. Descriptive Statistics:

1. Frequency and percentage tables.

2. Mean, standard deviation, minimum and maximum values.

3. Bar Charts

Frequency (F): In statistics, the frequency of an occurrence refers to how often it happened during an experiment or research. It was used to characterize the sociodemographic features of patients suffering from hemodialysis.

The percentage (%): A figure or rate given as a specified number of things divided by a hundred items. It was used to characterize the sociodemographic features of hemodialysis patients.

Standard Deviation is a measure that quantifies the amount of variance.

b. Inferential Statistics:

1- The Kolmogorov-Smirnov test is accustomed evaluate whether the studied domain follows a normal classification .

2- The Shapiro-Wilk test was used to evaluate the normal classification of the analyzed region.

3- The Mann-Whitney U test is used to compare two groups that are independent of each other.

4- Kruskal Wallis Test, to compare the difference between three or more independent groups.

A limitation is that the data collected included self-reported measures. Patients are likely to under- or overestimate their overall quality of life, spirituality, family support, and treatment adherence. As a result, they may report their own thoughts rather than accurate facts. Furthermore, end-stage

renal disease may present with varying degrees of functioning in daily life for each individual participant. In this study, individuals with end-stage renal disease and hemodialysis were treated, and thus responses may vary from Patient to Patient .

Chapter Four

Results of The Study

Results of The Study

This chapter provides a descriptive examination of the sociodemographic characteristics of the sample. The current study investigates the impact of viral hepatitis on health-related quality of life for hemodialysis patients in the holy city of Karbala.

Statistical processes were used to examine the data of the current study. then, the were arranged and analyzed. These results were based on the answers of the sample of the research tool.

Table (4.1) Assessment of The Study Sample Demographic Characteristics

Demographic Characteristics	Rating and Intervals	Statistics	Viral Hepatitis	
			Positive	Negative
Age / years	20-29	Freq.	3	1
		%	6.0%	2.0%
	30 – 39	Freq.	8	8
		%	16.0%	16.0%
	40 – 49	Freq.	11	7
		%	22.0%	14.0%
	50 – 59	Freq.	14	19
		%	28.0%	38.0%
	60+	Freq.	14	15
		%	28.0%	30.0%
Sex	Male	Freq.	29	25
		%	58.0%	50.0%
	Female	Freq.	21	25
		%	42.0%	50.0%
Marital Status	Single	Freq.	5	6
		%	10.0%	12.0%
	Married	Freq.	36	39
		%	72.0%	78.0%
	Widowed	Freq.	4	4
		%	8.0%	8.0%
	Divorced/Separated	Freq.	5	1
		%	10.0%	2.0%
Place of Residency	Urban	Freq.	31	35
		%	62.0%	70.0%

	Rural	Freq.	19	15
		%	38.0%	30.0%
Education Levels	No Reads and no writes	Freq.	1	6
		%	2.0%	12.0%
	Reads and writes	Freq.	5	6
		%	10.0%	12.0%
	Primary school	Freq.	25	19
		%	50.0%	38.0%
	Middle school	Freq.	11	11
		%	22.0%	22.0%
	Secondary school	Freq.	4	3
		%	8.0%	6.0%
	University	Freq.	4	5
		%	8.0%	10.0%
Occupation	Student	Freq.	1	0
		%	2.0%	0.0%
	Employee	Freq.	5	8
		%	10.0%	16.0%
	Gainer	Freq.	15	12
		%	30.0%	24.0%
	Housewife	Freq.	20	24
		%	40.0%	48.0%
	Retired	Freq.	9	6
		%	18.0%	12.0%
Economic Status	Sufficient	Freq.	16	22
		%	32.0%	44.0%
	Medium	Freq.	24	17
		%	48.0%	34.0%
	Insufficient	Freq.	10	11
		%	20.0%	22.0%
Duration of dialysis treatment / years	Less than 1 year	Freq.	0	14
		%	0.0%	28.0%
	1-3 year	Freq.	9	9
		%	18.0%	18.0%
	3-5 year	Freq.	16	20
		%	32.0%	40.0%
	More than 5 years	Freq.	25	7
		%	50.0%	14.0%
Duration of Dialysis in hour per day	3	Freq.	10	7
		%	20.0%	14.0%

	4	Freq.	40	43
		%	80.0%	86.0%
Number of Weekly Hemodialysis Sessions	One time/ week	Freq.	0	2
		%	0.0%	4.0%
	Two times/ week	Freq.	8	27
		%	16.0%	54.0%
	Three times/ week	Freq.	42	21
		%	84.0%	42.0%

Freq. %

Table (4-1) reveals that 38.0% and 28.0% from the participants enrolled in the positive and negative Viral Hepatitis study groups respectively are at the age group of 50 - 59 years old, 28.0% and 30.0% respectively are at the age group of 60+. and 58.0% from the participants in positive groups are males and 50.0% from the participants in negative groups are females and male respectively.

Regarding Marital Status , the result in this table indicate that the majority (78.0%) from negative group , and (72.0%) of the positive group had Married.

With respect to Place of Residency , the majority (70.0%), and (62.0%) of the positive and negative groups are from Urban.

Concerning educational level, 50.0% of the positive study group and approximately (38.0%) of the negative group have a Primary school and 22.0%for two groups have Middle school.

As for occupation, 40.0% of the positive group and 48.0% of the negative group had a housewife, and 30.0% of the positive group and 24.0% of the negative group were gainers.

As for Economic Status , 48.0% of the positive group are Medium, 44.0% of the negative group are Sufficient.

As for the duration of years of dialysis treatment, 50.0% of the positive group were more than 5 years and 40.0% of the negative group had a treatment duration of 2-5 years.

As for the duration of dialysis per hour per day, 80.0% of the positive group and 86.0% of the negative group had a treatment duration of 4 hours per day.

As for the number of weekly hemodialysis sessions, 84.0% of the positive group had three sessions/week and 54.0% of the negative group had two sessions/week.

Table (4.2) Assessment of The Chronic Diseases Among The Study Sample

Chronic Diseases	Responses	Statistics	Viral Hepatitis	
			Positive	Negative
Diabetes Mellitus	Yes	Freq.	13	26
		%	26.0%	52.0%
	No	Freq.	37	24
		%	74.0%	48.0%
Hypertension	Yes	Freq.	47	46
		%	94.0%	92.0%
	No	Freq.	3	4
		%	6.0%	8.0%
Heart Failure	Yes	Freq.	17	18
		%	34.0%	36.0%
	No	Freq.	33	32
		%	66.0%	64.0%

Table (4-2) demonstrated the items of the Chronic Diseases among the Study Sample (Positive and Negative Hepatitis) .

Among (74.0%) of positive group and (48.0%) negative group no Diabetes Mellitus and 52.0% of negative group with Diabetes Mellitus.

as reported among (94.0%) of positive group and (92.0%) negative group are with Hypertension.

as reported among (66.0%) of positive group and (64.0%) negative group are without Heart Failure

Table (4.3) Summery Statistics of the Health – Related Quality of Life among Study Sample (Positive and Negative Hepatitis)

Main Studied Domains	Mean	Std. Deviation	Range	Minimum	Maximum
Positive Viral Hepatitis					
Physical	56.32	7.221	32	44	76
Psychological	59.68	9.208	40	36	76
Social-relationship	30.00	8.010	36	12	48
Environmental	82.48	9.103	40	64	104
Overall Health Related Quality of Life	61.08	5.813	23	50	73
Negative Viral Hepatitis					
Physical	92.40	16.107	72	48	120

Psychological	83.60	11.606	60	44	104
Social-relationship	33.92	9.467	36	16	52
Environmental	99.68	17.02	40	64	104
Overall Health Related Quality of Life	84.30	10.436	51	51	102

S.D = Standard Deviation ;

The result in table (4.3)shows the Health – Related Quality of Life among Study Sample (Positive and Negative Hepatitis).The overall mean of score Health – Related Quality of Life among Study Sample (Positive Viral Hepatitis) was (61.08 ± 5.813). The overall mean of score Health – Related Quality of Life among Study Sample (negative Viral Hepatitis) was (84.30 ±10.436). about the Difference (Mean Difference) in Health-Related Quality of Life between Positive and Negative Viral Hepatitis showed that (56.32)physical ,(59.68)psychological ,(30) social –relationship ,(82.48) environmental ,(61.08) overall health related quality of life in positive viral hepatitis while Negative Viral Hepatitis was (92.4) physical ,(83.6) psychological,(33.92) social –relationship,(99.68) environmental,(84.3) overall health related quality of life.

Table (4.4) Statistical Difference in Health-Related Quality of Life between Positive and Negative Viral Hepatitis

Main Studied Domains	Viral Hepatitis	N	Mean Rank	Sum of Ranks	Mann-Whitney U	p-value
Physical	Yes	50	26.92	1346.00	71	0.001 S
	No	50	74.08	3704.00		
	Total	100				
Psychological	Yes	50	28.58	1429.00	154	0.001 S
	No	50	72.42	3621.00		
	Total	100				
Social-relationships	Yes	50	44.91	2245.50	970.5	0.05 S
	No	50	56.09	2804.50		
	Total	100				
Environmental	Yes	50	36.00	1800.00	525	0.001 S
	No	50	65.00	3250.00		
	Total	100				
Overall Health	Yes	50	27.39	1369.50	94.5	0.001

– Related Quality of Life	No	50	73.61	3680.50		S
	Total	100				

S= Significant .

Table (4-4) shows that there is significant association between Difference in Health-Related Quality of Life between Positive and Negative Viral Hepatitis at p- value =0.001, 0.05) respectively.

Table (4.5) Statistical Difference in Overall Assessment of Health-Related Quality of Life according to Some Demographic Characteristics Using the Mann-Whitney U Test

Demographic Characteristics	Rating	N	Mean Rank	Sum of Ranks	Mann-Whitney U	p-value
Sex	Male	29	30.16	874.50	169.5	.008 S
	Female	21	19.07	400.50		
	Total	50				
Place of Residency	Urban	31	26.56	823.50	261.5	.509 NS
	Rural	19	23.76	451.50		
	Total	50				
Duration of Dialysis in hour per day	3	10	22.40	224.00	169	0.45 NS
	4	40	26.28	1051.00		
	Total	50				
Number of Weekly Hemodialysis Sessions	Two Times/ Week	8	19.88	159.00	123	0.23 NS
	Three Times/ Week	42	26.57	1116.00		
	Total	50				
Diabetes Mellitus	Yes	13	23.54	306.00	215	0.57 NS
	No	37	26.19	969.00		
	Total	50				
Hypertension	Yes	47	24.97	1173.50	45.5	0.306 NS
	No	3	33.83	101.50		
	Total	100				
Heart Diseases	Yes	17	24.44	415.50	262.5	0.71 NS
	No	33	26.05	859.50		
	Total	100				

P= Probability, Sig= Significance, N.S= Not significant, S= Significant,

Table (4.5) Difference in Overall Assessment of Health-Related Quality of Life according to Some Demographic Characteristics Using the Mann-Whitney u test This table indicated that there was no significant relationship among viral hepatitis with regard to place of residency, duration of dialysis in hour per day, number of weekly hemodialysis sessions, diabetes mellitus, hypertension, heart diseases, except their sex was significant p-value = .008.

Table (4.6) Statistical Difference in Overall Assessment of Health-Related Quality of Life according to Some Demographic Characteristics Using the Kruskal-Wallis Test

Demographic Characteristics	Rating and Intervals	N	Mean Rank	Sig.
Age / years	20-29	3	36.83	Chi-square Value (11.50) d.f. (4) p-value (0.021) S
	30 – 39	8	21.44	
	40 – 49	11	21.55	
	50 – 59	14	34.75	
	60+	14	19.25	
	Total	50		
Marital Status	Single	5	31.20	Chi-square Value (6.08) d.f. (3) p-value (0.108) NS
	Married	36	27.33	
	Widowed	4	13.75	
	divorced/separated	5	16.00	
	Total	50		
Educational Levels	No Reads and no writes	1	9.00	Chi-square Value (4.99) d.f. (5) p-value (0.41) NS
	Reads and writes	5	19.20	
	Primary school	25	24.64	
	Middle school	11	25.82	
	Secondary school	4	35.38	
	University	4	32.13	
	Total	50		
Occupation	not work	1	37.00	Chi-square Value (7.68) d.f. (4) p-value (0.053) NS
	Employee	5	27.70	
	Gainer	15	23.97	
	Housewife	20	16.30	
	Retired	9	25.82	
	Total	50		
Economic Status	Sufficient	16	32.09	Chi-square Value (6.61)
	Medium	24	20.25	

	Insufficient	10	27.55	d.f. (2) p-value (0.037) S
	Total	50		
Duration of dialysis treatment / years	1-2 year	9	34.28	Chi-square Value (5.19) d.f. (2) p-value (0.075) NS
	2-5 year	16	20.47	
	More than 5 years	25	25.56	
	Total	50		

Table (4.6) Statistical Difference in Overall Assessment of Health-Related Quality of Life according to Some Demographic Characteristics Using the Kruskal-Wallis Test , This table indicated that there was no significant relationship among with viral hepatitis regard to marital status, educational levels, occupation, duration of dialysis treatment / years except their age , economic status was significant Chi-square Value (11.50) d.f. (4) p-value (0.021), Chi-square Value (6.61) d.f. (2) p-value (0.037)

Chapter Five

Discussion of The Results

Conclusions & Recommendations

Discussion of Results

review of the findings will be covered in chapter, thoroughly analyze Chapter four, which covers topics such as the socio-demographic characteristics of the participants and the effects of viral hepatitis on the quality of life of patients undergoing hemodialysis. Comorbidity of participants, which will be strengthened through further research.

Quality of life is an important indicator of how effective medical care . hemodialysis patients face a number of challenges that may have a negative impact on their health. The infection caused by hepatitis C virus is serious concern for hemodialysis patients. This is the most serious comorbidity that can have a negative impact on their quality of life.

5.1.1 Discussion of The Patients' Socio-demographic characteristic and medical data

The sample of the present study consists of (100) patients undergoing hemodialysis for two groups of samples (positive and negative) viral hepatitis. The findings of the current study in regards to the distribution of socio demographic characteristics variables of the respondents, as show Table (4-1) The greater percent of the patient were reveals that 38.0% and 28.0% from the participants enrolled in the positive and negative Viral Hepatitis study groups respectively are at the age group of 50 - 59 years old, 28.0% and 30.0% respectively are at the age group of more than 60 . The present findings agree with a study by Cossais et al.. (2019) which revealed that the majority of patients were over 50 years old (72%). another research of Touil et al .(2022) which showed the majority patient were in the age group was 51.66 .

The researcher estimated that elderly patients have less physical ability than younger patients. They had more chronic health problems, had greater pain and suffering because their quality of life was worse than other age groups.

Regarding sex, table (4-1) indicates that there are significantly more males 58.0% from the participants in positive groups and 50.0% from the participants in negative groups are females and male respectively, Similarly, a significant positive association between quality of life and the male (p=0.034*) <0.05), (Touil et al, 2022). Kalita et al. (2020) agree with the study predominantly males (M: F = 7:1)

In agreement with Alshehri & Algosadi (2021) the study of hepatitis C patients, males had significantly higher PCS and MCS values than females. This can be explained by the fact that they usually have a more active physical routine than females, and they also have greater freedom of movement in Saudi culture.

According to Khalaf & Hussein (2022), many variables contribute to differences in prevalence rates between males and females. the most important of which are: sex hormones and their effect on gene expression, including the immune system, may contribute to these disparities. In contrast to androgens, estrogens stimulate the immune system. Immunosuppression. After menopause, gender differences in HCV disease are attenuated by significantly reduced estrogen levels.

The marital status of the majority of positive patients in this research (72.0%) and negative patients (78.0%) is indicated by the results in table (4-1).

The study conducted by Tawil et al. (2022) revealed that 54.3% of participants were married. Another study conducted by Mounib et al. (2021) focuses on individuals with CKD. It reported that majority of dialysis patients in Pakistan, specifically 85.3%, were married.

In Abu Al Kass et al . (2020), influences the health related of quality of life of patients undergoing a dialysis program in the Gaza Strip, it was found that 67.74% of the patients were married.

In terms of residency, Table (4-1) shows that there are significantly more urbanites in both group (positive and negative) , respectively. (62.0%) (70.0%)

In agreement with the study carried out by Khasal et al. (2020), psychosocial Disturbance among dialysis patients with persistent hepatitis B infection and C virus infection is more prevalent in urban areas than in rural areas in southern Iraq.

It is consistent with the study conducted in the city of Sulaymaniyah /Iraq, by Abdulqader et al (2023), and most of the patients lived in the city (75.2%).Because of their proximity to the city, the researcher assumed they could receive medical care faster and more effectively than people in rural areas. As for the educational level, the majority of the study 50.0% of the positive study group and about (38.0%) of the negative group had primary school, and 22.0% of two groups had middle school.

The results of a study are consistent with Alshelleh et al (2023) which revealed that school education in 39 (60%),

This study is consistent with the study of Al Shehri et al. (2021) The majority of patients had a school education, with middle/high school (42.20%) and elementary school (34.70%) being the most common levels.

It contradicts the results of Abdulqader et al (2023) research, which found that 75 (33.8%) of the participants were illiterate, It contradicts the results of Munib et al (2021) study, which revealed that 53 (28.8%) of the participants were illiterate. Lack of information and poor literacy among patients.

The researcher anticipated that the importance of education level in comprehending the nature of the HD process, adhering to health education on fluid and meal restriction schedules, and adhering to the scheduled HD timetable guidelines.

In terms of occupation, most of the female (40.0% of the positive group and 48.0% of the negative group) were a housewife, while the men (30.0% of the positive group and 24.0% of the negative group) were gainers. It is in consistent with Gebrie et al.(2023) study that found almost half of the participants were unemployed (49.7%). It is in consistent with a study in Saudi Arabia Al Shehri et al (2021).where the majority of patients are unemployed 38.90%.

It is not consistent with Cossais et al (2019) study that found the majority of patients (0.86 for those working vs. 0.73 for those not working).

Based on the study conducted by Ezzat et al (2015), patients who were employed exhibited significantly superior rates of physical activity, energy, social participation and general health compared to patients who were unemployed.

Concerning economic status, 48.0% of the positive group is medium, while 44.0% of the negative group is sufficient. This agreed with Gebrie et al (2023), monthly household income 52.4 and Afsar et al (2009) income (satisfactory) HCV positive 55 HCV negative 59,

This study disagrees with Munib et al. (2021) which found that monthly income is insufficient at 73.9%,and Khasal et al. (2020) study found a positive association between socio-demographics and psychosocial factors.

In terms of treatment duration, 50.0% of the positive group had undergone dialysis for more than 5 years, while 40.0% of the negative group had undergone dialysis for 2–5 years. as well as, this result is in consistent with a study conducted in Egypt, Ezzat et al (2015), the duration of dialysis (in years) was 4.24 + 2.53 in HCV negative patients, duration of dialysis (years) 7.6 + 5.69 if HCV positive. Consistent with the study in Turkey by Afsar et al (2009), the average duration of dialysis in HCV-negative patients was 47.9. Duration of dialysis is 68.8 if HCV positive.

It contradicts Abdulqader et al (2023) study that found the majority of patients (n = 149, 67.1%) remain on HD for less than 35 months. Research in Egypt conducted by Abdelsalam et al (2020) found that HCV-negative individuals had a dialysis duration of 3.32 ± 1.74 years, duration of dialysis (in years) is 4.57 ± 2.69 if HCV positive. according to research Costa, Gabrielle et al (2016), Most patients (58.97) had Up to 4 years.

The majority of patients had dialysis treatment in two groups, 80.0% of the positive group and 86.0% of the negative group, for 4 hours daily, It agrees with Tayea et al (2022) study which found duration of dialysis session were 4 hours in 88.3% of the patients.

Finally, regarding the weekly washing sessions, the majority of patients, 84.0% of the positive group, had three sessions per week, while 54.0% of the negative group had two sessions. It agrees with the study Abu El Kass et al (2020) where patients have three times hemodialysis sessions per week were (73.12%), This result is consistent with Munib et al (2021) study , the majority of 94.0 patients were in the 2-session negative group.

According to research conducted by Abdulqader et al., (2023), the negative group. Most patients(55.4%) had two weekly HD sessions. According to research by Gebrie et al (2023), Most patients (61.3) had two weekly HD sessions.

In study Jesus et al., (2019), longer dialysis sessions were associated with higher ratings in the physical, social, and environmental categories. One possible reason for the connection to the physical realm is that people with longer dialysis sessions have lower levels of nitrogenous waste and feel a greater reduction in uremia symptoms, all of which enhances their physical condition. The study found that prolonged dialysis sessions lead to less intense ultrafiltration and fewer muscle spasms.

The researcher estimated that patients were very extremely exhausted at the beginning of the HD procedure because of problems with ESRD.

However, as excess fluid and metabolic waste are eliminated, the patient's condition improves. When the HD process becomes part of a patient's daily life and has a detrimental impact on patients' physical, psychological and economic health, their quality of life is also affected.

According to Table (4-2), the majority of patients (74.0%) were in the positive group, 48.0% in the negative group were non-diabetic, and 52.0% in the negative group were diabetic. And among (66.0%) of positive group and (64.0%) negative group were without Heart Failure.

Not consistent with the study in Saudi Arabia, Alshehri et al (2021) the prevalence of hepatitis among diabetics is 42.50%.

According to a study in Saudi Arabia , Alshehri et al (2021) the prevalence of hepatitis among Hypertension is 81.70% ,it contrasts with the findings of Firoz et al. (2023), who found that hypertension, diabetes, and cardiovascular disease were prevalent in the study population at 95.2%, 35.6%, and 8.9%, respectively.

Consistent with Goodkin et al.'s (2017) study, hepatitis C infection in HD had lower prevalence rates of hypertension, Diabetes, coronary artery disease, congestive heart disease ,Heart failure.

Diabetes was present in Al-Sharifain et al (2022) research with a percentage of 28.6%, in addition to end-stage kidney disease, two-thirds of them suffered from chronic diseases, and high blood pressure was the most common (49.3%). Elhadad et al. (2020) found that most patients: 26.5% of patients suffer from diabetes, 19.7% suffer from high blood pressure, while 45.3% do not suffer from comorbidities .It does not agree with the study of Abdulqader et al. (2023) where most patients had comorbidities (91.9%). Consistently, the main risk factors for chronic renal failure were hypertension (47.3%), followed by diabetes (32.4%).According to a study by Tawil et al. (2022) , 44.3% had no comorbidities.

The researcher believed that people who suffer from diabetes and high blood pressure have low immunity. This makes them vulnerable to viral hepatitis**,** while the Alhajim (2017) the social, economic, physical and mental health of dialysis patients is negatively affected by comorbidities such as diabetes, high blood pressure that leads to a significant decrease in the quality of life of patients for these individuals.

5.1.3. Discussion of the Health-related quality of life, focusing on the positive and negative aspects of hepatitis:

The health-related quality of life for the study sample (both positive and negative for hepatitis) is displayed in table (4.3).In the study sample with positive viral hepatitis, the overall mean score for health-related quality of life was (61.08 ± 5.813). In the study sample with negative viral hepatitis, the total mean score for health-related quality of life was (84.30 ±10.436). The results suggest that viral hepatitis may have had an impact on the dialysis patient's quality of life in comparison to the negative group. Given that the negative group's rate of quality of life was greater,

Consistent with study Raju et al (2012), the most dialysis patients, 68.3% to be exact, report an average quality of life .Consistent with the study by Pompe et al. (2019). Overall quality of life was good at 1 year, with a mean of 82.54 (SD = 11.63). Consistent with study Tayea et al (2022) that average total quality of life was seen in 85% of the studied negative hepatitis patients.

Touil et al., study (2022) conducted in Morocco revealed a decline in the overall quality of life in all its dimensions. Specifically, there was a significant association (P = 0.016) indicating that the overall quality of life score decreased, with a significance level of less than 0.05.

5.1.4 . Discussion the impact of positive and negative viral hepatitis on health-related quality of life:

Table (4-4) shows that there is significant differences relationship between disparities in (HRQOL) between individuals with positive ,negative viral hepatitis at p- value = 0.05) respectively.

The mean difference in health-related quality of life between the viral hepatitis positive and negative groups, as seen in Figure (4.1), indicates that relationships give the lowest degree of quality for both the positive and negative groups. The results of positive viral hepatitis were as follows: physical (56.32), psychological (59.68), social-relationship (30), and overall health-related quality of life (61.08); in contrast, negative viral hepatitis showed results of physical (92.4), psychological (83.6), social-relationship (33.92), and overall health-related quality of life (84.3).

Supporting the findings of Yonata et al. (2022) who found that the majority of patients reported a high quality of life (84 out of 67.7%), while a small proportion (32.3% to be precise) reported a low quality of life.

Increased mortality and comorbidities including grief were also associated with poor quality of life. The results may be influenced by anemia, age, length of dialysis, comorbidities, and medication use, all of which are associated with poor health-related quality of life in hemodialysis patients.

Not consistent with the study conducted by Pretto et al., (2020), the HRQoL ratings are poor on the dimensions of the physical component, the mental component, with greater value related to assistance with the dialysis team. These results indicate that the health of dialysis patients is at risk due to their physical, psychological and emotional state, and the difficulty of continuing to work, and that support is a vital tool in coping with this situation.

According to Pretto et al., (2020), Hospitalization and infections reduce healthy quality of life, but can be managed with health-promoting preventive and therapeutic treatments.

Disagree with Malleshappa study (2018), social support indicated excellent quality of life in dialysis patients. Good social support is crucial to maintaining a positive quality of life in these individuals.

Disagree with results of Shahrin's et al (2019) study, individuals performed worse physically than mentally. The mental component summary score was 50.23 ± 8.88 and the physical component summary score was 33.89 ± 11.83.

Barreto et al (2023) study , dis agrees with the study found that mental health provided the highest quality of life, while physical health provided the lowest. These data are supported by component summaries, which show that the mental component is superior to the physical component, with the lowest scores being physical performance (26.78) and the highest scores being mental health (72.16).

In contrast to what was found in the study, Psychological quality of life had the highest rating (M = 62.83, SD = 14.80), but physical health had the lowest rating. most surprising parts of the report were the sections on social relations (100) and the environment (94).considering mental and physical health, as well as kidney-related symptoms, dialysis patients in Ethiopia have poor HRQOL, according to research by (Gebrie et al. 2023).

The research revealed that ability to maintain one's physical health within optimal limits is an essential element of this disease that enables patients to maintain their quality of life.

According to Afsar (2009) in HD patients, infection with hepatitis C virus results in decreased quality of life, especially in the area of mind. Cognitive impairment in hepatitis C patients infected with HCV may be exacerbated by the presence of mild encephalopathy. Cognitive

impairment, also called “mild encephalopathy,” is known to be frequently present in patients with cirrhosis even in the absence of clinical encephalopathy. There may be an association between increased prevalence of depression and lower MCS in HD patients infected with HCV, which may be explained by the effect of infection on cognitive function.

Research showed that the decline in cognitive aspects of health-related quality of life (HRQOL) can be attributed to patients knowing their diagnosis, leading to a greater decline in HRQOL compared to those who do not know it. Kamal et al. study (2018) revealed that most hepatitis C patients come from poorer socioeconomic backgrounds than the general population, and the disease faces stigma in society. Furthermore, revealed that HCV may reduce HRQOL even in the absence of severe liver disease. This may be due to HCV-related cognitive dysfunction, additional hepatic symptoms, or an unfavorable synergy between HCV and comorbid psychosocial disorders.

5.1.5. Discussion of The Difference of Health-Related Quality of Life according to Some Demographic Characteristics Using the Mann-Whitney u test:

Table (4.5) is about Difference in Overall Assessment Quality of Life giving to Some Demographic Characteristics Using the Mann-Whitney u test . This table offers no evidence of a relationship between viral hepatitis and the place of residency, duration of dialysis in hour per day, number of weekly hemodialysis sessions, diabetes mellitus, hypertension, heart diseases, except their sex which was significant p-value = .008.

Safauldeen, (2017), when it comes to quality of life, all three areas physical health, psychosocial interactions, and the environment . Older age, worse socioeconomic status, central line vascular access, diabetes, positive hepatitis, and longer duration of dialysis are all factors associated with poor quality of life.

Elhadad et al, (2020) study found that ESRD patients with depression had lower ratings on all aspects of quality of life than those without depression. Quality of life has been shown to be significantly associated with clinical quality of diabetes or hypertension in patients with ESRD ($P < 0.05$). It has been found that people with clinical disease have a lower quality of life than people without it .

The results were similar to those of the gender-influenced study conducted by Ezzat et al. (2015), who noted that, with the exception of the physical functioning subscale, the majority of HD patients who tested positive for HCV antibodies had worse scores than those who tested negative. Gender was the only factor influencing quality of life (QOL) in this sample; Men reported more positive feelings about their roles, physical pain, and postpartum syndrome (PCS) than females.

Table (4.6) indicated that there was no significant relationship among with viral hepatitis regard to marital status, educational levels, occupation, duration of dialysis treatment / years their except age , economic status was significant Chi-square Value (11.50) d.f. (4) p-value (0.021), Chi-square Value (6.61) d.f. (2) p-value (0.037).

Agree with Khasal et al, study (2020), the Psychosocial domain has the effect due to hemodialysis with chronic viral hepatitis, indicated a negative correlation between sociodemographic and psychosocial outcomes, with the exception of income and socioeconomic status in the area of social relations/support.

Ezzat et al (2015) found the infection with hepatitis C virus reduced quality of life patients in dialysis various mental aspects, specifically in the subscales of the components of mental health, social functioning, emotional well-being, physical vitality, and mental health. A better quality of life is linked to being a man, being younger, and having a job.

Agree with Mittal et al ,study (2015), hepatitis patients had a significantly lower quality of life compared to the control group. When compared to female patients, males with hepatitis C tend to be healthier and more physically productive. I disagree with the study findings that men also have superior social connections compared to women. There was no statistically significant difference between genders in the SF-36 when it came to role limitations caused by physical health, mental health, social functioning, pain, and general health; However, women reported higher scores.

The researchers in palestine found that hemodialysis patients without hepatitis had lower scores on the KDQOL-SFTM questionnaire (Naseef, H.H., et al., 2023). Patients' socioeconomic status and education level also had a negative effect on all three types of questions. Physical role, occupational status, and emotional role also received the worst ratings among the three basic categories.

Not consistent with study Floria et al., study (2022), age was negatively associated with total and most quality of life measures ($P < 0.01$).

The researcher believes that the majority of people infected with hepatitis C virus do not suffer from any symptoms at all. This is likely because the incubation period for these infections is decades rather than years, and that negative effects of viral infection may not appear immediately in patients who are monitored for only a short period (Rostami et al (2013) . It is plausible that the symptoms of our HD patients did not significantly affect their quality of life.

Conclusions and Recommendations

Conclusions and Recommendations

5 .2 Conclusions

Based on the findings of the current study, The following conclusions are obtained:

1- the participants in study are within the age groups of (55 –59) years are opposed to the negative group in the study group, the age was 60 years old and about more than half percentage of them were males, married and place of residency in urban,

2. Most of the participants in this study had completed the primary education.

3. Patients who had been on dialysis for more than five years.

4.The results showed a remarkable association between the sociodemographic characteristics of HCV patients, including age, gender, and economic status.

5-The study shows that the viral hepatitis infections was effective in health related quality of life in patients undergoing hemodialysis .

5.3 Recommendations

The following recommendations have been made on the basis of the findings of the study:

1- Educational initiatives should be planned with the aim of improving the quality of life of patients, , by raising awareness, enhancing self-confidence, and helping them cope with the disease.

2- Educational initiatives should be planned and implemented in a way that makes the work relevant to real-life conditions, and enables them to work and earn income to support themselves and their families.

3- Through awareness campaigns or awareness courses conducted in the centers by specialized nurses, improve the quality of life for patients receiving hemodialysis and offer good health information regarding dialysis treatment, viral hepatitis infections, and lifestyle adjustments.

4- Assist patients receiving HD with the necessary detailed, illustrated, and simplified booklets, brochures, and posters that include advice on how to follow care with viral infections , take medicine, and preserve safety Vascular access and changes in quality of life .

5- Regular HRQOL assessments are necessary, as is appropriate management, to improve the quality of life for HD patients, hemodialysis patients quality of life (QOL) must be improved, and this requires identifying and eliminating variables that lower QOL.

.

References

References

القران الكريم ، سورة البقرة ، الآية (٢٨٦)

Abbasi, S. H., Aftab, R. A., & Chua, S. S. (2020). Risk factors associated with nosocomial infections among end stage renal disease patients undergoing hemodialysis: A systematic review. *In PLoS ONE* (Vol. 15, Issue 6 June). Public Library of Science. https://doi.org/10.1371/journal.pone.0234376

Abdelsalam, M., Tawfik, M. M., Habib, A., Abdel-Razik, A., Anber, N., Zaki, M., & Marie, M. S. (2019). Occult hepatitis C virus infection among Egyptian hemodialysis patients and its potential effect on anemia management. *The Egyptian Journal of Internal Medicine*, 31(4), 783–789. https://doi.org/10.4103/ejim.ejim_94_19

Abu El Kass, S. M., Ahmed El-Senousy, T., & Allah Jumaa, N. (n.d.). Factors Affecting Quality of Life among Patients Undergoing Hemodialysis Program in Gaza Strip. *In International Journal of Caring Sciences* (Vol. 13).

Afsar, B., Elsurer, R., Sezer, S., & Ozdemir, N. F. (2009). Quality of life in hemodialysis patients: hepatitis C virus infection makes sense. *International urology and nephrology*, 41, 1011-1019.

Akhtar, S., Nasir, J. A., Usman, M., Sarwar, A., Majeed, R., & Billah, B. (2020). The prevalence of hepatitis C virus in hemodialysis patients in Pakistan: A systematic review and meta-analysis. *In PLoS ONE* (Vol. 15, Issue 5). Public Library of Science. https://doi.org/10.1371/journal.pone.0232931

Akyüz, F., Beşişik, F., Pinarbaşi, B., Demir, K., Kaymakoğlu, S., Çakaloğlu, Y., Sever, M. Ş., & Ökten, A. (2009). The quality of life in hemodialysis patients with chronic hepatitis C virus infection. *Turkish Journal of Gastroenterology*, 20(4), 243–246. https://doi.org/10.4318/tjg.2009.0020

Alhajim, S. A. (2017). Assessment of the quality of life in patients on hemodialysis in Iraq. *Eastern Mediterranean health journal*, 23(12), 815-820.

Alshehri, M. (2019). Health Related Quality of Life Among Hepatitis C Infected Patients On Hemodialysis and Its Associated Factors in Saudi Arabia 2018-2019. http://www.imedpub.com/british-journal-of-research/

Alshelleh, S., Alhawari, H., Alhouri, A., Abu-Hussein, B., & Oweis, A. (2023). Level of Depression and Anxiety on Quality of Life Among Patients Undergoing Hemodialysis. *International Journal of General Medicine*, 16, 1783–1795. https://doi.org/10.2147/IJGM.S406535

Alshraifeen, A., Al-Rawashdeh, S., & Rababa, M. (2022). Quality of Life and General Well-being in People Receiving Hemodialysis Treatment: A Cross-sectional Study. *Jordan Journal of Nursing Research*, 2(1), 45–54. https://doi.org/10.14525/JJNR.v2i1.07

Amber, A. A., AL-Kaseer, E., Al-Diwan, J. K., & Ffph, F. (2021). Hepatitis C Virus Infection among Patients in Hemodialysis Unit at Baghdad Teaching Hospital. *In Iraqi Med J* (Vol. 67, Issue 2).

Al-Ani, B. A. J., & Mahmood, F. M. (2014). Assessment Of Hemodialysis Patient's Compliance To The Treatment And Follow Up In Baghdad Teaching Hospitals. *kufa Journal for Nursing sciences*, 4(2), 128-137.

Al-Muramdy, W. H. K. (2020). Prevalence Rate of Hepatitis C virus (HCV) and Hepatitis B virus (HBV) Infection in Iraqi Patients on Hemodialysis: Cross-Sectional Study. *Medico-legal Update*, 20(3), 123-128.

Arasu, R., Gdipsurganat, M., Jegatheesan, D., Fracp, M., Sivakumaran, Y., & Fracs, M. (2022). Overview of hemodialysis access and assessment.

Aslam, A., Shah, S., Abbas, G., Rehman, A. ur, Malhi, T. H., Alotaibi, N. H., Alzarea, A. I., Rasool, M. F., Khurram, H., Noureen, S., & Bokhari, M. T. S. (2022). Assessment of health-related quality of life in hypertensive hemodialysis patients. *PeerJ*, 9. https://doi.org/10.7717/peerj.12690

Athbi, H. A., & Jasim, N. A. (2015). Prevalence and Risk Factors for Hepatitis Cand B Viruses Infection among Hemodialysis Patients in Holy Karbala, Iraq". *Kufa Journal for Nursing Sciences*, 5(3), 4.

Athbi, H. A. A., & Mohammed, W. K. (2012). Effect of Infection Control Education Program on Nurses Staff's Knowledge in Hemodialysis Units in Baghdad Teaching Hospitals. *In Tenth National Scientific Conference* (pp. 529-50).

Balaban, Ö. D., Aydin, E., Keyvan, A., Yazar, M. S., Tuna, Ö., & Devrimci Özgüven, H. (2017). Psychiatric comorbidity, sexual dysfunction, and quality of life in patients undergoing hemodialysis: A case-control study. *Noropsikiyatri Arsivi, 54(2), 137–142*. https://doi.org/10.5152/npa.2016.12677

Barreto, M. A., Cattafesta, M., da Cunha, A. C., Paixão, M. P. C. P., dos Santos Neto, E. T., & Salaroli, L. B. (2023). Relationship between quality of life and sociodemographic, clinical and lifestyle characteristics of patients undergoing hemodialysis. *Journal of Human Growth and Development*, 33(3), 444–469. https://doi.org/10.36311/JHGD.V33.15422

BAYIN DONAR, G. (2022). The Effect of Chronic Kidney Disease Treatment on The Quality of Life Assessed by Using SF-36 in Turkey: A Systematic Review. *Acibadem Universitesi Saglik Bilimleri Dergisi*, 13(1). https://doi.org/10.31067/acusaglik.863563

Baykan, H., & Yargic, I. (2012). Depression, anxiety disorders, quality of life and stress coping strategies in hemodialysis and continuous ambulatory peritoneal dialysis patients. *Klinik Psikofarmakoloji Bulteni*, 22(2), 167–176. https://doi.org/10.5455/bcp.20120412022430

Cahyati, Y., & Rosdiana, I. (2022). Contribution of anxiety and dialysis factors to the event of fatigue in hemodialysis patient. *Enfermeria Nefrologica, 25(2), 156–161*. https://doi.org/10.37551/52254-28842022017

Castro, M. C. M., Carlquist, F. T. Y., De Fátima Silva, C., Xagoraris, M., Centeno, J. R., & De Souza, J. A. C. (2020). Vascular access cannulation in hemodialysis patients: Technical approach. *Brazilian Journal of Nephrology,* 42(1), 38–46. https://doi.org/10.1590/2175-8239-JBN-2019-0031

Cha, J., & Han, D. (2020). Health-related quality of life based on comorbidities among patients with end-stage renal disease. *Osong Public Health and Research Perspectives,* 11(4), 194–200. https://doi.org/10.24171/j.phrp.2020.11.4.08

Cossais, S., Schwarzinger, M., Pol, S., Fontaine, H., Larrey, D., Pageaux, G. P., ... & Deuffic-Burban, S. (2019). Quality of life in patients with chronic hepatitis C infection: severe comorbidities and disease perception matter more than liver-disease stage. *PLoS One*, 14(5), e0215596 .

Darsini, D., Notobroto, H. B., Afiyah, R. K., Cahyono, E. A., Aryani, H. P., & Rahman, F. S. (2022). Quality of Life of Hemodialysis Patients during COVID-19 Pandemic in Gatoel Hospital, Mojokerto City. *Open Access Macedonian Journal of Medical Sciences, 10(E*), 293–302. https://doi.org/10.3889/oamjms.2022.7583

de la Cuesta-Benjumea, C., Hernádez-Ibarra, L. E., & Arredondo-González, C. P. (2023). Living normally without being oneself: A qualitative study on the experience of living with advanced chronic kidney disease. *PLoS ONE, 18(12 December)*. https://doi.org/10.1371/journal.pone.0295506

Dwi Nurbadriyah, W., Nursalam, N., Yuni Widyawati, I., . H., Wahyu Kurniawan, A., & Santi Fatmawati, D. (2023). Correlation Between the Quick of Blood and Quality of Life of Chronic Kidney Disease

Patients in Dialysis Therapy in the Hemodialysis Unit at Wava Husada Hospital. *KnE Medicine*. https://doi.org/10.18502/kme.v3i2.13067

Firoz, I., Prabhu, R., Rao, I., N.K, V., Nayak, M. N., & Quadri, B. A. (2023). Clinical Profile and Quality of Life of Incident Hemodialysis Patients. *Annals of International Medical and Dental Research*, 9(2), 9–14. https://doi.org/10.53339/aimdr.2023.9.2.2

Floria, I., Kontele, I., Grammatikopoulou, M. G., Sergentanis, T. N., & Vassilakou, T. (2022). Quality of Life of Hemodialysis Patients in Greece: Associations with Socio-Economic, Anthropometric and Nutritional Factors. *International Journal of Environmental Research and Public Health, 19(22*). https://doi.org/10.3390/ijerph192215389

Freeland, C., Racho, R., Kamischke, M., Moraras, K., Wang, E., Cohen, C., & Kendrick, S. (2021). Health-related quality of life for adults living with hepatitis B in the United States: a qualitative assessment. *Journal of Patient-Reported Outcomes*, 5, 1-8.

Gahatraj, J., Visudtibhan, P. J., Junda, T., & Butsing, N. (2024). Predicting Factors of Health-related Quality of Life Among Persons with End-stage Renal Disease Receiving Hemodialysis at a Tertiary Level Hospital in Nepal. *Journal of Health Research*, 38, 146–153. https://doi.org/10.56808/2586-940X.1070.

Gebrie, M. H., Asfaw, H. M., Bilchut, W. H., Lindgren, H., & Wettergren, L. (2023). Health-related quality of life among patients with end-stage renal disease undergoing hemodialysis in Ethiopia: a cross-sectional survey. *Health and Quality of Life Outcomes, 21(*1). https://doi.org/10.1186/s12955-023-02117-x

Goodkin, D. A., Bieber, B., Jadoul, M., Martin, P., Kanda, E., & Pisoni, R. L. (2017). Mortality, hospitalization, and quality of life among patients with hepatitis C infection on hemodialysis. *Clinical Journal of the American Society of Nephrology*, 12(2), 287-297.

Guerra, V. G. (2020). Factors associated with quality of life and dialysis compliance (Doctoral dissertation, *The University of Texas Rio Grande Valley).*

Guntipalli, P., Pakala, R., Kumari Gara, S., Ahmed, F., Bhatnagar, A., Endaya Coronel, M. K., ... & Andrews, K. (2021). Worldwide prevalence, genotype distribution and management of hepatitis C. *Acta Gastroenterol Belg*, 84(4), 637-56. DOI 10.51821/84.4.015

Jesus, N. M., Souza, G. F. de, Mendes-Rodrigues, C., Almeida Neto, O. P. de, Rodrigues, D. D. M., & Cunha, C. M. (2019). Quality of life of individuals with chronic kidney disease on dialysis. *Jornal Brasileiro de Nefrologia : 'orgao Oficial de Sociedades Brasileira e Latino-Americana de Nefrologia*, 41(3), 364–374. https://doi.org/10.1590/2175-8239-JBN-2018-0152

Kamal, N. N., Mahfouz, E. M., Ewis, A. A., Refaei, S. A., & Soliman, W. A. (2018). Quality of life among hepatitis C patients on treatment, Minia, Egypt. *International Journal of Community Medicine and Public Health*, 5(5), 1707.

Kalantar-Zadeh, K., & Unruh, M. (2005). Health related quality of life in patients with chronic kidney disease. *International Urology and Nephrology*, 37(2), 367–378. https://doi.org/10.1007/s11255-004-0012-4

Kalita, D., Deka, S., & Chamuah, K. (2021). Circulation of an atypical hepatitis C virus (HCV) strain at a dialysis unit in northeast India. *Microbiology Open, 10(1*). https://doi.org/10.1002/mbo3.1147

Khalaf, S. K., & Hussein, A. A. (2022). Detecting and Genotyping of HCV among Hemodialysis Patients in Diyala Governorate. *AIP Conference Proceedings, 2398*. https://doi.org/10.1063/5.0095298

Khasal, Q. A., Rashash, D. S., Shinjar, F. J., & Jasim, A. A. (2020). Psychosocial Disturbance of Hemodialysis Patients with Chronic Hepatitis B and C Virus Infection at Southern Provinces in Iraq. *Prof.(Dr) RK Sharma*, 20(4), 41730.

Kim, S. G., & Lee, I. H. (2023). The impact of quality of life measured by WHOQOL-BREF on mortality in maintenance hemodialysis patients: a single center retrospective cross-sectional study. *Journal*

of Yeungnam Medical Science, 40(1), 49–57. https://doi.org/10.12701/jyms.2022.00080

Kozyk, M., Strubchevska, K., Yuzkiv, V., Bezkorovayna, U., & Nedilko, R. (2023). Symptoms of Acute and Chronic Viral Hepatitis: Effects on Human Body. *Journal of Medicinal and Chemical Sciences*, 6, 2580–2587. https://doi.org/10.26655/JMCHEMSCI.2023.11.2

Lewis ,S., Bucher , L., Heitkemper , M., Harding, M. ,Barry, M., Lok , J.,& Tyerman,J.,(2019). Medical-Surgical Nursing in Canada Assessment and Management of Clinical Problems, 4th Canadian ed., *Elsevier Canada, a division of Reed Elsevier Canada, Ltd., Canada*.

Lee, J., Kim, Y. C., Kwon, S., Li, L., Oh, S., Kim, D. H., An, J. N., Cho, J. H., Kim, D. K., Kim, Y. L., Oh, Y. K., Lim, C. S., Kim, Y. S., & Lee, J. P. (2020). Impact of health-related quality of life on survival after dialysis initiation: A prospective cohort study in Korea. *Kidney Research and Clinical Practice*, 39(4), 426–440. https://doi.org/10.23876/j.krcp.20.065

LUBIS, A. A., NASUTION, A., & ROSIDAH. (2019). PHARMACEAUTICAL CARE IMPROVED THE QUALITY OF LIFE OF PATIENT WITH HEMODIALYSIS. *International Journal of Current Pharmaceutical Research, 49–54*. https://doi.org/10.22159/ijcpr.2019v11i6.36341

Malleshappa, P. (2018). Coping strategies and quality of life in patients receiving chronic hemodialysis. *Türk Nefroloji Diyaliz ve Transplantasyon Dergisi*, 27(2), 146-149.

Marques, S., Landim, L., Santos, P. R., Cardoso, M., Sousa, L. A., & Santos, V. L. (2021). Can risk of sarcopenia predict poorer quality of life in hemodialysis patients.14 (*version 1) (YYYY-MM-DD)*. 2021–2033. https://doi.org/10.1590/SciELOPreprints.3352

Marsinova Bakara, D., Mardiani, M., & Kurniyati, K. (2018). Psychoeducation On Quality of Life And Ureum Levels Of Hemodialysis Creatinine Patients *At Curup General Hospital Rejang Lebong Regency*.

Matreja, P. S., S Matreja, P., Rao, H., & Khanna, P. (2015). Prevalence and Impact of Hepatitis on the Quality of Life of Patients. *Euroasian Journal of Hepato-Gastroenterology, 5(2), 90–94*. https://doi.org/10.5005/jp-journals-10018-1142

Miftahussurur, M., Priyantini, D., Mahmudah, I., Alfaray, R. I., Vidyani, A., Lucia, M., Lusida, I., Waskito, L. A., Annisa, Y., & Rezkitha, A.). Quality of Life and Related Factors Among Hepatitis B Virus Infected Individuals. *In Systematic Reviews in Pharmacy (Vol. 11).*

Mittal, P., Matreja, P. S., Rao, H. K., & Khanna, P. M. L. (2015). Prevalence and impact of hepatitis on the quality of life of patients. *Euroasian journal of hepato-gastroenterology, 5(2), 90*.

Mohammed, S. G. S., & Abdallah, F. A. A. (2019). Nutritional Status and Quality of Life among Hemodialysis Patients in Omdurman Military Hospital (Hemodialysis Center)(November 2017–March 2018). *Clin J Nutr Diet, 2(1), 1-8.*

Mohamed, S. N., Eweda, S. M., Gamiel, E., El-Sayed, A., & Mohamed, Z. F. (2023). Effect of intradialytic exercise on physiological parameters, biochemical markers, and quality of life among patients on hemodialysis. *Alexandria Scientific Nursing Journal*, 25(1), 58-69.

Moustafa, D. K., Ibrahim, M. E., El-Sayed, S. S., & Abd-Elmaksoud, S. F. (2023). Depression among Egyptian End Stage Renal Disease Patients Under Maintenance Hemodialysis. *In Benha Journal of Applied Sciences (BJAS) (Issue 8)*. http://bjas.journals.ekb.eg

Namdar, A., Naghizadeh, M. M., Namdar, F., Alizadeh, S., & Montazeri, A. (2023). Health-related Quality of life in Patients on Hemodialysis Compared to Peritoneal Dialysis: A cross-sectional Study. *Journal of Advanced Biomedical Sciences.* https://doi.org/10.18502/jabs.v13i3.13219

Naseef, H. H., Haj Ali, N., Arafat, A., Khraishi, S., Abukhalil, A. D., Al-Shami, N., Ladadweh, H., Alsheikh, M., Rabba, A. K., Asmar, I. T., & Sahoury, Y. (2023). Quality of Life of Palestinian Patients on Hemodialysis: Cross-Sectional Observational Study. *Scientific World Journal, 2023*. https://doi.org/10.1155/2023/4898202

Nasser Mohamed Zyada, S., lecturer, A., Mostafa Eweda, S., Professor, E., El-Sayed El Gamiel, A., Fikry Mohamed Abd El Rasol, Z., & Professor, A. (2023). *Intradialytic exercise (Vol. 25, Issue 1).*

Neokosmidis, G., Protopapas, A. A., Stogiannou, D., Filippidis, A., & Tziomalos, K. (2023). Cardiometabolic effects of direct-acting antivirals in patients with hepatitis C. *In Gastroenterologia y Hepatologia (Vol. 46, Issue 1, pp. 58–66). Ediciones Doyma, S.L.* https://doi.org/10.1016/j.gastrohep.2022.03.007

Nguyen, D. B., Bixler, D., & Patel, P. R. (2019). Transmission of hepatitis C virus in the dialysis setting and strategies for its prevention. *In Seminars in Dialysis (Vol. 32, Issue 2, pp. 127–134). Blackwell Publishing Inc.* https://doi.org/10.1111/sdi.12761

Nilsson, Evalill. (2012). Aspects of Health-Related Quality of Life Associations with Psychological and Biological Factors, and Use As Patient Reported Outcome in Routine Health Care. *Linkopings Universitet*.

Nordyke, R. J., Nicholson, G., Gage, S. M., Lithgow, T., Himmelfarb, J., Rivara, M. B., Hays, R. D., Woo, K., & Peipert, J. D. (2020). Vascular access-specific health-related quality of life impacts among hemodialysis patients: Qualitative development of the hemodialysis access-related quality of life (HARQ) instrument. *BMC Nephrology, 21(1).* https://doi.org/10.1186/s12882-020-1683-5

Nugroho, P., Wijaya, S., Putranto, R., Rumende, C. M., William, D., & Lydia, A. (2022). Correlation of Body Composition and Quality of Life in Maintenance Hemodialysis Patients. *Nephro-Urology Monthly, 14(4)*. https://doi.org/10.5812/numonthly-129587

Nurbadriyah, W. D., Nursalam, N., Widyawati, I. Y., & Kurniawan, A. W. (2023). Factors associated with quality of life among patients undergoing hemodialysis in Indonesia. *Jurnal Ners, 18(3), 252–256.* https://doi.org/10.20473/jn.v18i3.46280

Parimala, L., & Sofia, M. (2021). Assessment of satisfaction level and quality of life among haemodialysis patient's on dialysis therapy. *Medico Legal Update, 21(1), 734-737.*

Peng, Y. Sen, Chiang, C. K., Hung, K. Y., Chang, C. H., Lin, C. Y., Yang, C. S., Chen, T. W., Hsia, C. C., Chen, D. L., Hsu, W. D., Chang, C. F., Wu, K. D., Lin, R. P., Tsai, T. J., & Chen, W. Y. (2010). Are both psychological and physical dimensions in health-related quality of life associated with mortality in hemodialysis patients: A 7-year Taiwan cohort study. *Blood Purification, 30(2), 98–105.* https://doi.org/10.1159/000319002

Polukchi, T., Zhankalova, Z., Abuova, G., & Muborakhon, A. (2022). Quality of life assessment in chronic viral hepatitis. *Journal of Clinical Medicine of Kazakhstan, 19(3), 19–23.* https://doi.org/10.23950/jcmk/12149

Pompey, C. S., Ridwan, M. N., Zahra, A. N., & Yona, S. (2019). Illness acceptance and quality of life among end state renal disease patients undergoing hemodialysis. *Enfermeria clinica, 29, 128-133.*

Pretto, C. R., Winkelmann, E. R., Hildebrandt, L. M., Barbosa, D. A., Colet, C. D. F., & Stumm, E. M. F. (2020). Quality of life of chronic kidney patients on hemodialysis and related factors. *Revista latino-americana de enfermagem, 28, e3327.*

Raju, R., & Latha, S. (2012). A correlational study on quality of life and coping Strategy among dialysis patients in selected hospital at Mangalore. *Journal of Health and Allied Sciences NU, 2(04), 08-11.*

Raad Humudat, Y., & Kadhim Al-Naseri, S. (2021). Hematological parameter of the blood count in patients undergoing hemodialysis therapy. www.techniumscience.com

Rasyid, H., Kasim, H., & Sampebuntu, J. (2022). Quality of life in patients with renal failure undergoing hemodialysis. *Acta Medica Indonesiana*, 54(2), 307. *(Vol. 54, Issue 2).*

Ravindran, A., Sunny, A., Kunnath, R. P., & Divakaran, B. (2020). Assessment of Quality of Life among End-Stage Renal Disease Patients Undergoing Maintenance Hemodialysis. Indian journal of palliative care, 26(1), 47–53. https://doi.org/10.4103/IJPC.IJPC_141_19

Rikos, N., Kassotaki, A., Frantzeskaki, C., Fragiadaki, M., Mpalaskas, A., Vasilopoulos, G., & Linardakis, M. (2023). Investigation of Perception of Quality of Life and Psychological Burden of Patients Undergoing Hemodialysis—Quality of Life of Hemodialysis Patients. *Nursing Reports, 13(3), 1331–1341.* https://doi.org/10.3390/nursrep13030112

Rostami Z, Lessan Pezeshki M, soleimani Najaf Abadi A, Einollahi B. Health Related Quality of Life in Iranian Hemodialysis Patients With Viral Hepatitis: Changing Epidemiology. *Hepat Mon. 2013;13(6):e9611*. DOI: 10.5812/hepatmon.9611

Sajadi, S. A., Ebadi, A., & Moradian, S. T. (2017). Quality of life among family caregivers of patients on hemodialysis and its relevant factors: a systematic review. *International journal of community based nursing and midwifery*, 5(3), 206.

Shahrin, F. I. M., Omar, N., Daud, Z. A. M., & Zakaria, N. F. (2019). Assessment of health-related quality of life in the elderly on maintenance hemodialysis. *Malaysian Journal of Medicine and Health Sciences* (eISSN 2636–9346).

Sievert, W., Altraif, I., Razavi, H. A., Abdo, A., Ahmed, E. A., AlOmair, A., ... & Negro, F. (2011). A systematic review of hepatitis C virus epidemiology in Asia, Australia and Egypt. *Liver international*, *31*, *61-80*.

Söderholm, J., Millbourn, C., Büsch, K., Kövamees, J., Schvarcz, R., Lindahl, K., & Bruchfeld, A. (2018). Higher risk of renal disease in chronic hepatitis C patients: Antiviral therapy survival benefit in patients on hemodialysis. *Journal of Hepatology, 68(*5), 904–911. https://doi.org/10.1016/j.jhep.2017.12.003

Sutrisno, S., Fawzi, A., & Dwianggimawati, M. S. (2019). The Different of Quality of Life Between Patient with Kidney Failure Undergoing Hemodialysis and Continous Ambulatory Peritoneal Dialysis (CAPD). *STRADA JURNAL ILMIAH KESEHATAN, 8(1), 28–33.* https://doi.org/10.30994/sjik.v8i1.199

Syamsiah, N., Mohd Said, F., Hafizah Che Hassan, D., Fachrudin, D., & Nurjanah, U. (2022). The Relationship Between Depression and Quality of Life in Patients Undergoing Hemodialysis in Indonesia. *KnE Life Sciences*. https://doi.org/10.18502/kls.v7i2.10298

Tayea, K., Hussein, M., Khalil, B., & El Wasif, S. (2022). Effect of Hemodialysis Long Life Program on the Quality of Life of Patients with End Stage Renal Disease. *In Original Article Egyptian Journal of Health Care (Vol. 13, Issue 2).*

Timmers, L., Thong, M., Dekker, F. W., Boeschoten, E. W., Heijmans, M., Rijken, M., Weinman, J., & Kaptein, A. (2008). Illness perceptions in dialysis patients and their association with quality of life. *Psychology & Health, 23(6), 679–690.* https://doi.org/10.1080/1476832

Touil, D., Boualam, A., El Harchaoui, I., Louragli, I., Aouane, M., & Touhami Ahami, A. O. (2022). Quality of life and its generating factors in hemodialysis patients hospitalized at the regional hospital idrissi kénitra morocco. *Acta Neuropsychologica, 20, 67-79.*

Vachharajani, T. J., Taliercio, J. J., & Anvari, E. (2021). New Devices and Technologies for Hemodialysis Vascular Access: A Review. *In American Journal of Kidney Diseases (Vol. 78, Issue 1, pp. 116–124). W.B. Saunders*. https://doi.org/10.1053/j.ajkd.2020.11.027

Venytska, H. V., & Riabokon, O. V. (2022). Effectiveness of antiviral treatment of patients with chronic hepatitis C GT 1b depending on the presence of comorbid chronic renal insufficiency. *Current Issues in Pharmacy and Medicine: Science and Practice, 15(3), 301–306.* https://doi.org/10.14739/2409-2932.2022.3.265483

Wigneswaran, J., Van Wyck, D., Pegues, D., Gholam, P., & Nissenson, A. R. (2018). Hepatitis C virus infection in patients with end-stage renal disease. *Hemodialysis International, 22(3), 297-307.*

Yılmaz, E. N., Bal, C., Harbali, S. M., Sağlam, Z., & Koç, Z. (2023). The relationship between quality of life and dietary fluid restriction non-adherence in hemodialysis patient. *New Trends and Issues Proceedings on Humanities and Social Sciences, 10(2), 15–31.* https://doi.org/10.18844/prosoc.v10i2.9097

Yonata, A., Islamy, N., Taruna, A., & Pura, L. (2022). Factors Affecting Quality of Life in Hemodialysis Patients. *International Journal of General Medicine, 15, 7173–7178.* https://doi.org/10.2147/IJGM.S375994

Zedan, K. A., Amein, N. M., & Mohammed, A. A. (2022). Quality of Life among Chronic Hemodialysis Patients at Minia City. *Minia Scientific Nursing Journal, 12(1), 142-148.* https ://doi.org/10.21608/msnj.2022.176342.1042

Appendices

Appendix A
Ethical Considerations

Ministry of Higher Education and Scientific Research
University of Karbala / College of Nursing
Scientific Research Ethics Committee

UOK.CoN.25.024
Ethical Committee Code:
Date: 3 / 12 /2023

Research Ethical Approval Form

Title of the research project	
In the English language	**In the Arabic language**
Impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis	**تأثير عدوى التهاب الكبد الفيروسي على جودة الحياة المتعلقة بالصحة بين المرضى الخاضعين للإنفاذ الدموي**

Data About the Main Researcher /Student:			
Full Name	**Scientific Title**	**Mobile Number**	**Email**
Mithal yaseen Abed	Master student	07815211709	mithal.y@uokerbala.edu.iq

Data About the Co-author /Supervisor:			
Full Name	**Scientific Title**	**Mobile Number**	**Email**
Dr. Fatma Makee	Professor	07702934031	Fatima.makki@uokerbala.edu.iq

Study objectives

- **Assess health related-quality of life in patients undergoing hemodialysis.**
- **Determine the impact of viral hepatitis infections on health-related quality of life in patients undergoing hemodialysis.**
- **Determine the association between socio-demographic characteristics (such as age, sex, educational levels, occupation, economic status, pre-existing disease) and quality of life in patients undergoing hemodialysis.**

Time and Setting of the Study

October 2023-Aguest 2024 /Imam Al-Hussain Medical City.

Study Design

Quantitative /Descriptive study

Sampling method and sample size

Sampling method: propablity randomize sampling/100 patients will be participating in this study, the participants will be assigned into two groups: 1) Viral Hepatitis Infections, 2) Non-Viral Hepatitis Infections

Statement of Ethical Commitment

The study will be conducted in accordance with what was mentioned in the protocol above and to commitment that all rules set by the ethical committee are followed in present research process. The researcher also makes a commitment to abide by ethical principles, moral values, law and instruction of the institutions. There is no bias will be during collecting the data, gender, regional aspects and is totally impartial and objective. The researcher will have taken an informed consent from the participants, and provide clarifications and information about the study to the sample members. The researcher deals with the data of the sample members in complete confidentiality.

منال ياسين عبد

Name and signature of the researcher

Recommendation of the College's Research Ethical Committee

☑ **Agreement to conduct the study** ☐ **Disagreement to conduct the study**

Instructor Dr. Sajidah Saadoon Oleiwi
Member

Ass. Prof. Dr. Zeki Sabah Musihb
Member

Ass. Prof. Dr. Ghazwan Abdalhussein
Member

Ass. Prof. Dr. Hassan Abdullah Athbi
Chairman of the Committee

Appendix B

Administrative Agreements

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جـــامعة كربلاء
كـلية التـمريـض
شعبة الدراسات العليا

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

العدد : د.ع/ 389

التاريخ: 2023/12/4

الى / دائرة صحة كربلاء المقدسة – مركز التدريب و التنمية البشرية

م/ تسهيل مهمة

تحيـة طيبـة...

يرجى التفضل بالموافقة على تسهيل مهمة طالبة الدراسات العليا / الماجستير (مثال ياسين عبد طه) في كليتنا للعام الدراسي (2023-2024) لغرض جمع العينات الخاصة برسالتها الموسومة :

" تأثير عدوى التهاب الكبد الفيروسي على جودة الحياة المتعلقة بالصحة بين المرضى الخاضعين للإنفاذ الدموي"

"Impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis"

** مـع التقديـر **

جامعة كربلاء - كلية التمريض - شعبة الدراسات العليا

أ.م.د. سلمان حسون فارس
العميـد
2023/12/5

نسخة منه الى :
- مكتب السيد المعاون العلمي المحترم .
- شعبة الدراسات العليا .

العنوان : العراق - محافظة كربلاء المقدسة - حي الموظفين - جامعة كربلاء
Mail: nursing@uokerbala.edu.iq
website:

Appendix B1

Ministry of Health & Environment
Karbala Health Directorate
Training and Human Development Center
Research Committee

Form number 53
Decision number:2023272
Date 24/12/2023

Research committee decision

The Research Committee of Karbala Health Directorate has examined the research protocol number(**2023272**Karbala) entitled:

"تأثير عدوى التهاب الكبد الفيروسي على جودة الحياة المتعلقة بالصحة بين المرضى الخاضعين للانفاذ الدموي"

"Impact of viral Hepatitis infections on Health-Related Quality of life in Patients Undergoing Hemodialysis"

Submitted by researchers: **Mithal Yaseen Abed**

to the research and Knowledge Management Unit at the Training and Human Development Center of Karbala Health Directorate on 24/12/2023

The unit has decided to:
*** Accept the above-mentioned research protocol as it meets the standards adopted by the Ministry of Health for the implementation of research, and there is no objection to implementing it in the Directorate's institutions.**

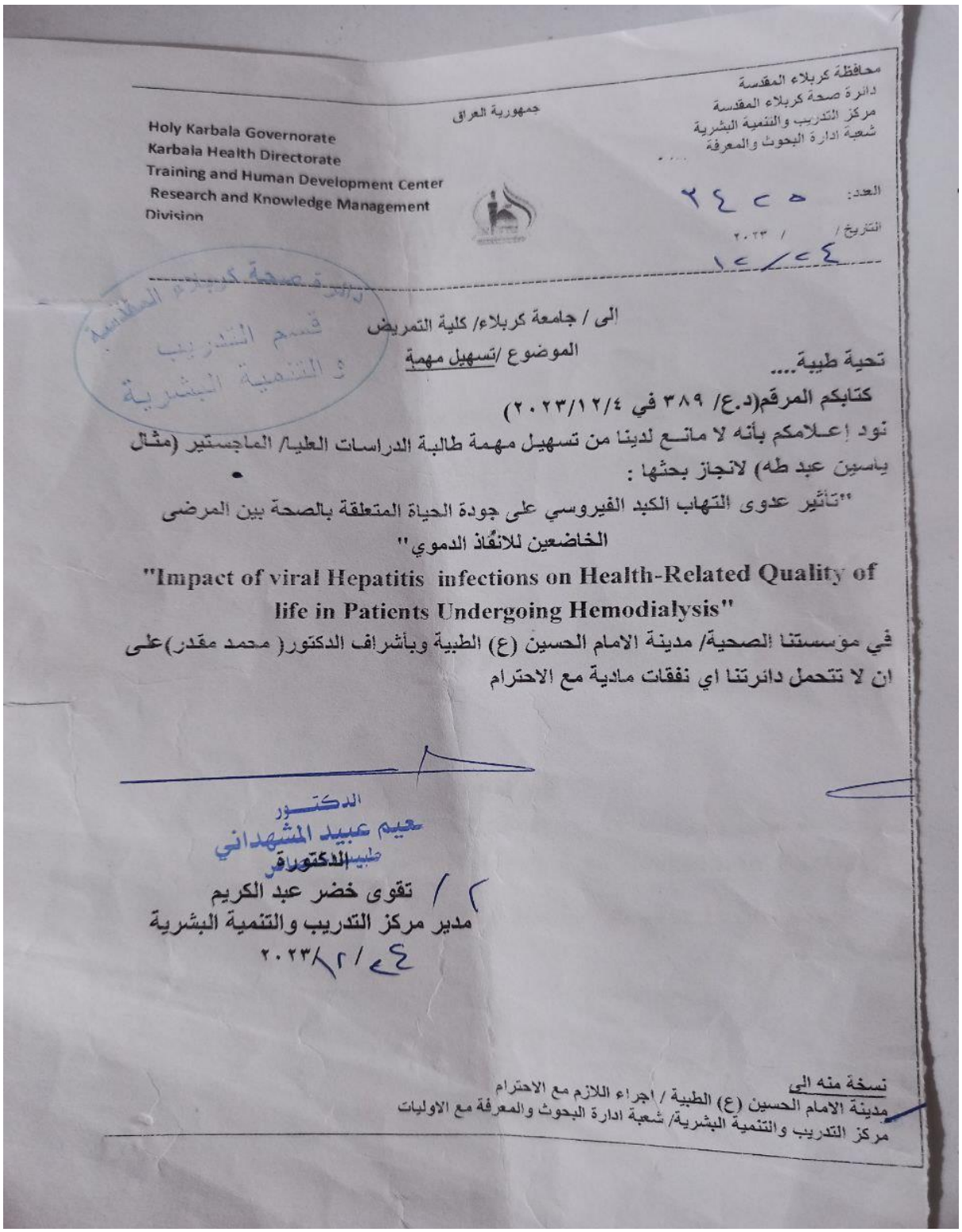
الدكتور
نعيم عبيد المشهداني
طبيب اختصاص

Rapporteur of the committee

24/12/2023

Notes:
- The committee member (Dr. Taqwa Khudhur Abdulkareem)/ committee rapporteur (Dr. Naeem Obaid. Talal) were authorized to sign this decision on behalf of the remaining members of the committee under the rules of procedures of the research committee.
- The research committee approval means that the research project submitted to the aforementioned committee has fulfilled the ethical and methodological standards adopted by the Ministry of Health for conducting a research. As for the implementation of the research, it depends on the researchers adherence to the instructions of the health institution in which the research will be implemented as well as the laws, instructions and recommendations in force that govern the practice of medical and health action in Iraq.

Appendix B2



محافظة كربلاء المقدسة
دائرة صحة كربلاء المقدسة
مركز التدريب والتنمية البشرية
شعبة ادارة البحوث والمعرفة

جمهورية العراق

Holy Karbala Governorate
Karbala Health Directorate
Training and Human Development Center
Research and Knowledge Management
Division

العدد: ٢٤٠٥
التاريخ / ٢٠٢٣ / ١٢ / ٤

الى / جامعة كربلاء/ كلية التمريض
الموضوع /تسهيل مهمة

تحية طيبة....

كتابكم المرقم(د.ع/ ٣٨٩ في ٢٠٢٣/١٢/٤)

نود إعلامكم بأنه لا مانع لدينا من تسهيل مهمة طالبة الدراسات العليا/ الماجستير (مثال ياسين عبد طه) لانجاز بحثها :

"تأثير عدوى التهاب الكبد الفيروسي على جودة الحياة المتعلقة بالصحة بين المرضى الخاضعين للانڤاذ الدموي"

"Impact of viral Hepatitis infections on Health-Related Quality of life in Patients Undergoing Hemodialysis"

في موسستنا الصحية/ مدينة الامام الحسين (ع) الطبية وبأشراف الدكتور(محمد مقدر)على ان لا تتحمل دائرتنا اي نفقات مادية مع الاحترام

الدكتور
حيم عبيد المشهداني
طبيب الدكتوراه

تقوى خضر عبد الكريم
مدير مركز التدريب والتنمية البشرية
٢٠٢٣/١٢/٤

نسخة منه الى
مدينة الامام الحسين (ع) الطبية / اجراء اللازم مع الاحترام
مركز التدريب والتنمية البشرية/ شعبة ادارة البحوث والمعرفة مع الاوليات

Appendix C

Questionnaire of the Study- Arabic

(تأثير عدوى التهاب الكبد الفيروسي على نوعية الحياة المتعلقة بالصحة بين المرضى الخاضعين للإنفاذ الدموي)

القسم ١:الخصائص الديمغرافية للمريض

No.	الخصائص	اجابة			
1.	العمر				
2.	الجنس	ذكر		انثى	
3.	الحالة الزوجية	اعزب		ارمل	
		متزوج		مطلق /منفصل	
4.	مكان الاقامة	حضري		ريفي	
5.	المستوى التعليمي	لا يقرأ و يكتب		متوسطة	
		يقرأ و يكتب		اعدادية	
		ابتدائية		جامعة	
6.	المهنة	لا يعمل		كاسب	
		طالب		ربة منزل	
		موظف		متقاعد	
7.	الحالة الاقتصادية	كافي		متوسط	
		غير كافي			
8.	مدة العلاج بالإنفاذ الدموي	أقل من ١ سنة		١-٣سنة	
		٣-٥ سنة		أكثر من ٥ سنوات	
9.	مدة الإنفاذ الدموي بالساعة في اليوم	١		٢	
		٣		٤	
10.	عدد جلسات بالإنفاذ الدموي في (عدد جلسات الديلزة)الاسبوع	مرة واحدة /اسبوع		مرتين /أسبوع	
		ثلاث مرات / أسبوع			
11.	الامراض المزمنة الاخرى	داء السكري		ارتفاع ضغط دم	
		فشل القلب		التهاب الكبد الفيروسي	
		اخرى			

WHOQOL-BREF

الأسئلة التالية تستفسر عن مدى تعرضك لأشياء معينة خلال الأسبوعين الماضيين

		لا يوجد	قليلا	بدرجة متوسط	كثير جدا	بدرجة بالغة
(F1.4) 3	إلى أي حد تشعر بأن الألم الجسدي يمنعك من القيام بالأعمال التي تريدها	١	٢	٣	٤	٥
(F11.3)4	الى أي مدى أنت بحاجة للعلاج الطبي لتتمكن من القيام بأعمالك اليومية ؟	١	٢	٣	٤	٥
(F4.1)5	إلي أي مدى تستمتع بالحياة ؟	١	٢	٣	٤	٥
(F24.2)6	إلي أي مدى تشعر بأن حياتك ذات معنى ؟	١	٢	٣	٤	٥
(F5.3)7	الى أي مدى أنت قادر على التركيز ؟	١	٢	٣	٤	٥
(F16.1)8	الى أي مدى تشعر بالأمان في حياتك اليومية ؟	١	٢	٣	٤	٥
(F22.1)9	إلى أي حد تعتبر أن البيئة المحيطة بك صحية ؟	١	٢	٣	٤	٥

الأسئلة التالية تستفسر عن مدى قدرتك على إتمام أمور معينة خلال الأسبوعين الماضيين

		لا يوجد	قليلا	بدرجة متوسط	كثير جدا	بدرجة بالغة
(F2.1)10	هل لديك طاقة كافيه لمزاولة الحياة اليومية؟	١	٢	٣	٤	٥
(F7.1)11	هل أنت قادر على قبول مظهرك الخارجي؟	١	٢	٣	٤	٥
(F18.1)12	هل لديك من المال ما يكفي لتلبية احتياجاتك؟	١	٢	٣	٤	٥
(F20.1)13	ما مدى توفر المعلومات التي تحتاجها في حياتك اليومية ؟	١	٢	٣	٤	٥
(F21.1)14	إلي أي مدى لديك الفرصة لممارسة الأنشطة الترفيهية؟	١	٢	٣	٤	٥

		سيئة للغاية	سيئة	لا بأس	جيدة	جيدة جدا
(F9.1)15	الى أي مدى أنت قادر على التنقل بسهولة؟	١	٢	٣	٤	٥

يرجى قراءة كل سؤال و تقيم ما تشعر به ووضع دائرة حول الرقم الذي يعطي أفضل إجابة بالنسبة لك

		سيئة	سيئة	لا بأس	جيدة	جيدة جدا
(G1)1	كيف تقيم نوعية	١	٢	٣	٤	٥

		غير راض على الاطلاق	غير راض	لا راض ولا غير راض	راض	راض تماما
(G4)2	ما مدى رضاك عن	١	٢	٣	٤	٥

الأسئلة التالية تطلب منك أن تعبر عن مدى رضاك نحو جوانب مختلفة من حياتك خلال الأسبوعين الماضيين

		غير راض على الاطلاق	غير راض	لا راض ولا غير راض	راض	راض تماما
(F3.3)1	كم أنت راض عن نومك ؟	١	٢	٣	٤	٥
(F10.3) 17	إلي أي مدى أنت راض عن قدرتك على القيام بنشاطاتك اليومية ؟	١	٢	٣	٤	٥
(F12.4)	كم أنت راض عن قدراتك على العمل	١	٢	٣	٤	٥
(F6.3)1	كم أنت راض عن نفسك ؟	١	٢	٣	٤	٥
(F13.3)	كم أنت راض عن علاقاتك	١	٢	٣	٤	٥
(F15.3)	كم أنت راض عن حياتك الجنسية ؟	١	٢	٣	٤	٥
(F14.4) 22	كم أنت راض عن الدعم أو المساعدة من الأصدقاء ؟	١	٢	٣	٤	٥
(F17.3) 23	كم أنت راض عن الأوضاع في مكان سكنك؟	١	٢	٣	٤	٥
(F19.3) 24	كم أنت راض عن الخدمات الصحية المتوفرة لك ؟	١	٢	٣	٤	٥
(F23.3) 25	كم أنت راض عن وسائل المواصلات التي تستخدمها ؟	١	٢	٣	٤	٥

الأسئلة التالية تشير إلى كم من المرات شعرت أو تعرضت فيها لأشياء معينة خلال الأسبوعين الماضيين

		أبدا	نادرا	غالبا	غالبا جدا	دائما
F) 8.1)2	كم من المرات كانت لديك مشاعر سلبية مثل المزاج السئ، اليأس، القلق، الاكتئاب؟	١	٢	٣	٤	٥

Section(1):Demographic characteristics of patient

No.	Characteristics	Response			
1.	Age (yrs)				
2.	sex	Male		Female	
3.	Marital status	Single		Widowed	
		Married		Divorced/ Separated	
4.	Place of residence	Urban		Rural	
5.	Educational level	No Reads and no writes		Primary school	
		Reads and writes		Middle school	
		Secondary school		University	
6.	Occupation	not work		Gainer	
		Student		Housewife	
		Employee		Retired	
7.	Economic status	Sufficient		Medium	
		Insufficient			
8.	Duration of dialysis treatment	Less than 1 year		1-3 year	
		3-5 year		More than 5 years	
9.	Duration of Dialysis in hour per day	1		2	
		3		4	
10-	Duration of Hemodialysis per week	One time/ week		Two times/ week	
		Three times/ week			
11-	Pre-existing chronic diseases	Diabetes mellitus		Hypertension	
		Heart failure		Virus hepatitis	
		other			

Please read the question, assess your feelings, for the last two weeks, and circle the number on the scale for each question that gives the best answer for you.

		Very poor	Poor	Neither poor nor good	Good	Very good
1	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Fairly Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2	How satisfied are you with health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the **last two**

		Not at all	A Small amount	A Moderate amount	A great deal	An Extreme amount
3	To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
4	How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
5	How much do you enjoy life?	1	2	3	4	5
6	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	Slightly	Moderately	Very	Extremely
7	How well are you able to concentrate?	1	2	3	4	5
8	How safe do you feel in your daily life?	1	2	3	4	5
9	How healthy is your physical environment?	1	2	3	4	5

		Not at all	Slightly	Somewhat	To a great extent	Completely
10	Do you have enough energy for everyday life?	1	2	3	4	5
11	Are you able to accept your bodily appearance?	1	2	3	4	5
12	Have you enough money to meet your needs?	1	2	3	4	5
13	How available to you is the information you need in your daily life?	1	2	3	4	5
14	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Not at all	Slightly	Moderately	Very	Extremely
15	How well are you able to get around physically?	1	2	3	4	5

The following questions ask you to say how good or satisfied you have felt about various aspect your life over the over the **last two weeks**.

		Very Dissatisfied	Fairly Dissatisfied	Neither Satified nor Dissatisfied	Satisfied	Very satisfied
16	How satisfied are you with your sleep?	1	2	3	4	5
17	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18	How satisfied are you with your capacity for work	1	2	3	4	5
19	How satisfied are you with yourself?	1	2	3	4	5
20	How satisfied are you with your personal relationships?	1	2	3	4	5
21	How satisfied are you with your sex life?	1	2	3	4	5

22	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24	How satisfied are you with your access to health services?	1	2	3	4	5
25	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to **how often** you have felt or experienced certain things in the last two weeks.

		Never	Infrequently	Sometimes	Frequently	Always
26	How often do you have negative feelings such as blue mood, despair, anxiety or depression?	1	2	3	4	5

Appendix D

Expert's Panel

ت	اسم الخبير	اللقب العلمي	التخصص	مكان العمل	السنة
1.	د. حسن عبد الله عذبي	أستاذ مساعد	تمريض بالغين	كلية التمريض /جامعة كربلاء	22سنة
2.	د. ضياء كريم عبد علي	أستاذ مساعد	تمريض بالغين	كلية التمريض /جامعة العميد	18 سنة
3.	د. . ابراهيم علوان آل عاشور	أستاذ مساعد	تمريض بالغين	كلية التمريض /جامعة الكوفة	18 سنة
4.	د. جهاد جواد كاظم	أستاذ مساعد	تمريض بالغين	كلية التمريض /جامعة الكوفة	15 سنة
5.	د. وفاء عبد علي حطاب	أستاذ مساعد دكتور	تمريض بالغين	كلية التمريض /جامعة بغداد	17 سنة
6.	د. صادق عبدالحسين حسن	أستاذ مساعد	تمريض بالغين	كلية التمريض /جامعة بغداد	14 سنة
7.	د. حيدر محمد حالوب	أستاذ مساعد	تمريض بالغين	كلية التمريض /جامعة الكوفة	13سنة
8.	د. حسنين صلاح جعفر الخياط	طبيب اختصاص	دكتور اختصاص طب و امراض الباطنية	مدينة الحسين الطبية / ردهة الكلية الصناعية	24 سنة
9.	د. محمد مقدر مكي	طبيب اختصاص	دكتور اختصاص امراض و زرع الكلى	مدينة الحسين الطبية / ردهة الكلية الصناعية	19سنة

Appendix E

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جـــامعة كربلاء
كـلية التـمريـض
شعبة الدراسات العليا

إقرار الخبير اللغوي

أشهد بـأن الرسالـة الموسومـة :

" تأثير عدوى التهاب الكبد الفيروسي على جودة الحياة المتعلقة بالصحة بين المرضى الخاضعين للإنفاذ الدموي "

" impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis "

قد جـرى مراجعتـها مـن الناحيـة اللغويـة بحيـث أصبحت بإسلوب علمـي سليـم خـالٍ من الأخطـاء اللغويـة و لأجلـه وقعت .

توقيع الخبير اللغوي :

الإسم و اللقب العلمي: Prof. Azhar Hassan

الإختصاص الدقيق : Linguistics

مكان العمل : جامعة كربلاء \ كلية التربية للعلوم الصرفة

التاريخ: 28/ 7 / 2024

العنوان : العراق - محافظة كربلاء المقدسة ـ حي الموظفين - جامعة كربلاء
Mail: nursing@uokerbala.edu.iq website: nursing.uokerbala.edu.iq

Appendix F

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة كربلاء
كلية التمريض
شعبة الدراسات العليا

إقرار الخبير الإحصائي

أشهد بأن الرسالة الموسومة :

" تأثير عدوى التهاب الكبد الفيروسي على جودة الحياة المتعلقة بالصحة بين المرضى الخاضعين للإنفاذ الدموي "

" impact of Viral Hepatitis Infections on Health-Related Quality of Life in Patients Undergoing Hemodialysis "

قد تم الإطلاع على الإسلوب الإحصائي المتّبع في تحليل البيانات و إظهار النتائج الإحصائية وفق مضمون الدراسة و لأجله وقعت .

توقيع الخبير الإحصائي :

الإسم و اللقب العلمي : م.د سكينة شاكر جاسم

الإختصاص الدقيق : احصاء تطبيقي

مكان العمل : جامعة كربلاء \ كلية الادارة والاقتصاد

التاريخ : 5 / 6 / 2024

العنوان : العراق ـ محافظة كربلاء المقدسة ـ حي الموظفين ـ جامعة كربلاء
Mail: nursing@uokerbala.edu.iq website: nursing.uokerbala.edu.iq

الخلاصة

غسيل الكلى هو إجراء طبي معقد ومستمر يتضمن قيودًا كبيرة على نمط الحياة وآثارًا جانبية غير مرغوبة ، يعاني مرضى غسيل الكلى من ضعف في جهاز المناعة مما يجعلهم أكثر عرضة للإصابة بالعدوى.

الهدف من هذه الدراسة هو تقييم تأثير عدوى التهاب الكبد الفيروسي على .جودة الحياة المتعلقة بالصحة لدى المرضى الذين يخضعون لغسيل الكلى

تم إجراء دراسة كمية وصفية وعينة غير احتمالية (غرضية) من ١٠٠ مريض يخضعون لغسيل الكلى لمجموعتين من العينات (إيجابية وسلبية) لالتهاب الكبد الفيروسي. أجريت الدراسة في مدينة الإمام الحسين الطبية، بدأت من الفترة من تشرين الاول ٢٠٢٣ إلى أب٢٠٢٤

تم الحصول على البيانات من خلال المقابلات، تم تقسيم الاستبيان إلى قسمين، الجزء الأول: - يتضمن الخصائص الديموغرافية للمريض. الجزء الثاني هو (WHOQOL-BREF) جودة الحياة لمنظمة الصحة العالمية

تم استخدام تطبيق SPSS، الإصدار ٢٦ وتفسير البيانات.

كانت مجموعات دراسة التهاب الكبد الفيروسي في الفئة العمرية ٥٠ ـ ٥٩ سنة، ٢٨,٠٪ و ٣٠,٠٪ على التوالي في الفئة العمرية ٦٠. و ٥٨,٠٪ من المجموعات الإيجابية هم من الذكور و ٥٠,٠٪ من المجموعات السلبية هم من الإناث والذكور، وتظهر النتيجة أن المتوسط الكلي لدرجات جودة الحياة المرتبطة بالصحة بين (التهاب الكبد الفيروسي الإيجابي) كان (٦١,٠٨ ± ٥,٨١٣)، وكان المتوسط الكلي لـ (التهاب الكبد الفيروسي السلبي) (٨٤,٣٠ ± ١٠,٤٣٦). هناك ارتباط كبير بين الفرق في جودة الحياة المرتبطة بالصحة .(0.05، p = 0.001 بين التهاب الكبد الفيروسي الإيجابي والسلبي عند قيمة ، العمر، الوضع الاقتصادي p = .008 كان الجنس ذا دلالة إحصائية قيمة .p (0.037) ، قيمة(0.021) p كانت قيمة

وخلصت الدراسة إلى أن التهاب الكبد الفيروسي له درجات متفاوتة من التأثير على نوعية الحياة على الأبعاد الجسدية والنفسية والاجتماعية. وأوصت بإنشاء برنامج تثقيفي صحي واسع النطاق لزيادة فهم ووعي المرضى حول الوقاية من التهاب الكبد الفيروسي وكيفية انتقاله والإجراءات الوقائية.

وزارة التعليم العالي والبحث العلمي

جامعة كربلاء / كلية التمريض

تأثير عدوى التهاب الكبد الفيروسي على جودة الحياة المتعلقة بالصحة بين المرضى الخاضعين للإنفاذ الدموي

رسالة تقدم بها

الى مجلس كلية التمريض/ جامعة كربلاء جزء من متطلبات نيل درجة

الماجستير في علوم التمريض

مثال ياسين عبد

بإشراف

أ.د فاطمة مكي محمود

محرم - ١٤٤٦ هـ **تموز - ٢٠٢٤ م**