An-Najah National University

Faculty of Graduate Studies

Quality of Life for patients undergoing Hemodialysis Patients compared with Patients after Renal Transplant: A Cross Sectional Study

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Dedication

To the first teacher of humanity, the Prophet Mohammad, peace is upon him, and to all who have followed his path.

To my dear parents.

With whom I huddled around winter fire, and during the long nights in sweet and bitter times, to my lifetime mates, and my siblings. May Allah protect them from all evil.

I also dedicate this work to the souls of martyrs of Palestine and to prisoners of freedom in Israeli jails.

Raya Jarareh

2018

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الإقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

Quality of Life for patients undergoing Hemodialysis Patients compared with Patients after Renal Transplant: A Cross Sectional Study

أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وأن هذه الرسالة ككل، أو أي جزء منها لم يقدم لنيل أية درجة أو لقب علمي أو بحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's name: **اسم الطالب:**

Signature: **التوقيع:**

Date: **التاريخ:**

Table of content

List of Tables

List of Annexes

List of abbreviations

Abbreviations	Full Name
ANOVA	Analysis of Variance
BP	Bodily Pain
BUN	Blood Urea Nitrogen
CRF	Chronic Renal Failure
CKD	Chronic Kidneys Disease
ESRD	End-Stage Renal Disease
GFR	Glomerular Filtration Rate
GH	General Health
HD	Hemodialysis
ICU	Intensive Care Unit
IRB	Institutional Review Board
MCS	Mental Component Summary
MH	Mental Health
MOH	Ministry of Health
PCBS	Palestinian Central Bureau of Statistics
PCS	Physical Component Summary
PF	Physical Function
PMC	Palestine Medical Compound
PMP	Per Million Population
RE	Role Emotional
RF	Role Physical
RRT	Renal Replacement Therapy
SD	Standard Deviation
SF-36	Short Form -36
SPSS	Statistical Package of Social Sciences
USA	The United States of America
VT	Vitality
WHO	World Health Organization

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Abstract

Background of the study: Renal transplant is considered the best therapeutic treatment for patients with chronic kidney failure. Its success has positive effects on psychological and physical health of patients as opposed to hemodialysis patients who suffer from a lot of psychological and physical stress in their life.

Little research has been done in Palestine to assess the quality of life of both the hemodialysis patients and post renal transplant patients.

Objective of the study: This study sought to compare the quality of life of post- renal transplant patients with the quality of life of hemodialysis patients undergoing dialysis at Palestine Medical Complex and An-Najah National University Teaching Hospital.

Methodology: To achieve the objective of the study, the researcher used a quantitative cross-sectional study, using quality of life questionnaire which included demographic information. She also concluded face-to-face interviews with 100 post-renal transplant patients and another 272

hemodialysis patients who were undergoing routine dialysis at Palestine Medical Complex and An-Najah National University Teaching Hospital.

Findings of the study: After data collection and analysis, it was found that the overall SF-36 among post- renal transplant patients was better than that among hemodialysis patients on all domains save the physical function. The mean difference between the two groups in this domain was 41.79.

The PCS for the hemodialysis patients was 45.94 + 13.22 while the MCS was 50+24.39. In contrast, the PCS, for the post- renal transplant patients, was 65.81 + 11.13 while the MCS was 80.31+ 5.53. It was also found that gender, age and level of education played a significant role in the quality of life of both groups of patients. However, place of residence had no effect on the quality of life of the two groups.

In the light of these findings, the researcher recommends raising awareness of post- renal transplant patients. She also recommends conducting further research on assessment of the quality of life of hemodialysis patients and post -renal transplant patients and its relationship with other factors**.**

Keywords: Quality of Life, Hemodialysis, Renal Transplantation.

Chapter One
Introduction

1. Introduction

1.1 Background

Chronic renal failure is a global public health problem worldwide [(1)]. There are two major renal replacement therapies for End Stage Renal Disease (ESRD) patients: kidney transplantation and hemodialysis. Therapies for patients with ESRD include procedures that can save patient's life and prevent complications resulting from ESRD. Renal transplantation is more preferable by patients who have ESRD. They choose it for many reasons: avoid frequency of hemodialysis per week, improve quality of life, desire to lead normal life [(2)] and increase of survival rate [(3)].

Physical health is defined as "the ability to complete activities required for safe independent living." [(4)] In contrast, mental health is a "state of emotional, psychological and social wellness evidenced by satisfying interpersonal relationships, effective behavior and coping, positive self-concept and emotional stability" [(5)].

1.2 End Stage Renal Disease (ESRD)

ESRD, or kidney failure, is a permanent deterioration and impairment in kidney's functions due to accumulation of the body's wastes which the kidneys cannot get rid of, leading to retention of human waste such as urea and nitrogenous in the blood. This is called Uremia and Azotemia [(6)].

ESRD is a very poor prognosis that can threaten health life [7]. It has been found that the major risk factors, that possibly cause ESRD, are diabetes mellitus, hypertension, cystic disease, urologic diseases, recurrent taking of non–steroidal anti-inflammatory drugs and cardiovascular disease. Diagnosis of ESRD requires review of the patient's physical assessment and examination. It includes blood test: serum creatinin, Blood Urea Nitrogen (BUN) and other waste products. Another test is Glomerular Filtration Rate (GFR) which measures the amount of plasma filtered through the glomerular per unit of time. This is in addition to Microalbuminuria test, Urine Analysis , Imaging test Ultrasound, CT scan, intravenous pylography by X ray and kidney biopsy [8] .Chronic Kidney Diseases (CKD) are divided into five stages based on severity. Usually in the early stages , a proper life style such healthy diet and medications may assist in keeping balances in the body so that the kidney would normally function, and that is the best treatment for patients with early stage of CKD. However, there is no permanent cure for those who reach the fifth stage, also known as ESRD. This stage is the first consequence of CKD, although renal replacement therapy can slow or prevent the progression of illness and which can prevent complications or serious condition exacerbation and which can be life –threatening. These are second impacts of CKD [9].

1.3 Hemodialysis

One of the renal replacement therapies can be performed at dialysis unit or at home to remove toxic waste products, such nitrogenous substances, and extract the blood from excess electrolytes and fluids. A special machine, called artificial kidney or dialyzer, is used to clean the blood from it. With a special needle, intravenously, the blood is drawn via a dialyzer. This filters out surplus fluids, waste products and electrolytes. Subsequently, via another set of tubes, the cleaned blood is then returned to the patient's body[10].

Therapy usually takes three to four times per week for three to four hours per session. The objective of hemodialysis is to remove toxic nitrogenous substances from the blood and to extract excess water. During the process, the blood with nitrogenous wastes and toxins are diverted from the hemodialysis patients to the machine, a dialyzer, where toxin is removed and the blood is returned to the patients [11] .

Hemodialysis therapy is the most common dialysis technique [12] , though it does not cure ESRD. The patient's life style is affected; the patient is may be deprived of enjoying his/her and social relationships, employment, vocational activities, eating habits, self -esteem, and sense of security. These are the aspects of could be affected by hemodialysis [13] .

1.4 Epidemiology of ESRD

Globally, in both developed and developing countries, ESRD is a public health problem [14]. Epidemiological studies have varied. Patients who stay alive due to receiving renal replacement therapy are approximately over 2 millions around the worldwide [15].

Statistics have revealed that 7.2% of patients,30-63 years old, had CKD as opposed to 23.4% -35.8% of patients who were more than 64 years old[16] .In USA, the kidney disease statistics reported that the overall prevalence of CKD was approximately 14% in 2015 and the number of patients on dialysis was 661,000.These included 468,000 patients on dialysis and roughly193,000 patients who had renal transplants [17] .

Globally, the average prevalence was 215 dialysis patients per million. Around 8-10% of the European population suffers from different stages of CKD.

Interestingly, in Europe, at present, the number of patients undergoing hemodialysis is almost double the number that underwent dialysis 15 years ago. In the United Kingdom, the annual incidence of ESRD is around 100 patients / million but it's expected to increase by 5-8% annually. Over the past decade, the incidence has doubled [18] .

Pertaining to the Arab countries, one study, conducted in 2006, reported that the incidence and prevalence of ESRD among the Arabs were the

highest when compared with developed countries. For example, in Egypt, the incidence was about 200 per million population [19] .

1.5 Renal Transplantation

Renal transplantation is a surgical operation in which a new functioning and healthy kidney or two kidneys are placed into patients who have a renal failure. Renal transplantation is usually classified as a donation from another live person or deceased donor [20]. The donated kidney does sufficiently the functions of the patient's two failed kidneys. It maintains patient' good health and without having undesirable symptoms .

A specialist surgeon transplants a new kidney inside the lower abdomen and connects the vein and artery of the new healthy kidney to the vein and artery. The patient's blood then begins to flow through the donated kidney. The new kidney may begin functioning right away or may require a few weeks to make urine [21]. It is necessary after renal transplantation to use the immunosuppressive agents and continuous nephrology clinics. However, renal transplantation has become the optimal choice of treatment for patients with CKD. Renal transplants are the most frequently performed compared with other organ transplants.

Most complications of renal transplantation are cardiovascular disease ([22]). Immunosuppressant agents make patients vulnerable to infection and other illnesses. Most complications or risks of kidney transplantation are cardiovascular disease, infection, liver disease, and high blood cholesterol. During pregnancy, there is an increase risk of renal rejection or occurrence

of fatal complications, and weakness of all bones .Some side effects of immunosuppressant agents are puffiness of face, increase in weight, high blood sugar and blood pressure, bone disease, cataracts, stomach acidity, skin changes, acne and facial hair. Late complications include ureteric stenosis, an obstruction or narrowing of the ureters that prevents flow of urine from kidney to bladder, infection or pylonephritis of the kidney, kidney stone, renal artery stenosis, heart disease, such high blood pressure, high cholesterol and blood lipid [(23)] .

Types of Kidney Donors

1. Living donors who choose to donate one of their kidneys.

2. Non- living donors are those who have allowed organs to be taken from their bodies after their death.

Both types can be successful for transplants. For kidney transplantation to succeed, the recipients and donors must have similar chemical characteristics called antigens.

The kidney transportation procedure is as follows: the new kidney is placed on the lower left or right side of the abdomen where it is connected to adjacent blood vessels. Then it is connected to blood vessels and the bladder. By this positioning, the new kidney's ureture is connected to bladder to let urine pass out of the body. The diseased kidneys are not removed, except in the following three cases: repeated infection that could affect the transplantation kidney, uncontrolled hypertension brought on by

the original kidneys and back flow of urine into kidneys[24] .After renal transplantations, patients face many challenges such as regular nephrology clinic, close monitoring, compliance with immunosuppressant agents, regimen and life style changes such nutrition, weigh control and exercises. All these challenges are considered stressors.

1.6 Renal Transplantation Worldwide

Renal transplantation is the most commonly procedure conducted worldwide. Globally, there was a 6.6% increase in the total kidney transplants from 2015 to 2016. The total number in the USA in 2015 was 17,878 as opposed to19, 061 in 2016 [25] .

Kidney transplant programs given improved between 2011-2014 in South – Eastern Europe's health network. About 19, 406 kidneys transplants were performed in 2014. That equated an overall unadjusted transplant rate of 36 pmp [26] .About 40,000 transplant surgeries were performed in 10 countries in 2015.These countries were the USA, Brazil, the UK, France, Mexico, Germany, Italy, Japan, Argentina and Spain [27] .

The first successful renal transplantation in the Middle East was performed in Iran in 1967. In the Arab countries, the first renal transplantations were performed in Jordan and Iraq in 1972 [28] .

In Saudi Arabia, the total number of kidneys transplanted in 2015 was 762[29] . currently, there are active kidney transplantation programs in all

the countries of the Middle East. The total number of transplantation procedures in this region in 2012 was about 8,000 [30] .

1.7 Renal Replacement Therapy (Hemodialysis and Rental Transplantation) in the West Bank

The Palestinian Ministry of Health (MOH) provides free care for patients who undergo hemodialysis and kidney transplantation. There are 11 governmental hemodialysis departments for Ministry of Health. There is one unit in every city of the West Bank. In 2015 the total number of patients who received hemodialysis was 1,004.

Palestine Medical Complex (PMC) and An-Najah National University Teaching Hospital are the two main medical facilities for kidney transplantation procedure in the West bank. In PMC, there is a dialysis unit which currently serves 149 patients and the total number of dialysis machines is 22.

Pertaining to mortality rate in 2014, resulting from ESRD in the West Bank, the Palestinian Central Bureau Of Statistic (PCBS) reported that ESRD was major chronic disease; it ranked eighth disease among other diseases. 3.9% average ESRD mortality rate out of the total number of mortalities in the West Bank [31].

The largest dialysis unit is based in An-Najah National University Teaching Hospital. It currently serves 225 patients and the total number of

dialysis machines is 33. The total numbers of patients who have had renal transplantation since 2010 is 255 [32] .

The total number of ESRD patients has increased over the last 5 years. In the first quarter of 2011 and 2012, ESRD patients increased by 11.3%. The total number of patients in 2011was 622 as opposed to 692 in 2012 . The total of patients that had hemodialysis in the West Bank's hospitals was 1, 004 patients in 2015. In 2016, there were 1,119 patients who received regular hemodialysis [33] .

The prevalence of ESRD in the West Bank was 240.3. Khader (2013) found that 57.7% of patients were males and 42.4% were females. It was also found that 45% of patients were between 45-64 years old, 62% of patients were living in villages, whereas 28% were living in cities. The majority of patients had diabetic mellitus disease (22.5%). Other patients had hypertension (11.1%). Some had both diseases (10.6%) [34] .

In the West Bank, renal transplantation surgeries depend on live donors, rather than cadaveric donors. In the last six years, Palestine Medical Complex managed kidney transplants, so the patients did not have to undergo dialysis forever. The first renal transplantation procedure was in October 2010. Since then, there have been 255 procedures. Throughout this period there was no referral of these patients to overseas for transplant procedures [35].This has had a positive effect on the budget of MOH since local hospitals have started to perform renal transplantation procedure domestically. PMC has advanced medical experience in RT. It has

succeeded in bringing laparoscope technology to perform the procedure. In the laparoscope procedure, the first step is to open a small incision in the bottom of donor's abdomen and remove the kidney. The advantages of this procedure are the decrease of the donor's pain after the operation and quick recovery [(36)]. Due to the high cost of the renal transplantation, the Ministry of Health has started to cover all the cost of treatment after 2010. The procedure starts with a recommendation from the nephrology doctor who follows up on the patient's health condition. Then he prepares the patient and the donor. The main condition here is that the patient and the donor have to be relatives. This has a direct effect on the success rate of the operation. During the operation, the donor and the recipient are kept in separate rooms. The kidney is taken from the donor and washed with special liquids and then it is transferred to the recipient's room. There it is transplanted, and the ureter is performed via the urologist. This finishes the operation and then the patient is transferred to the ICU where a special staff provides care for such cases. In the ICU, the nephrologists take care of the patient by giving him/her the necessary medicine and special fluids and special quantities. They follow the patient until the kidneys start to function normally. The patient who has gone through renal transplantation is given an immunosuppressive agent so the body can adapt to the new kidney. Without this medication, the body starts to fight and reject the foreign organs. It will be an intensive dose at the beginning and then it gets less and less over time. The patient is discharged after 8 days and he/she needs

to be followed up by the nephrologists because the tube needs to be removed after 3 weeks by the urologist [37] .

1.8 Health- Related Quality of Life

The World Health Organization (WHO) defines health as a "state of complete physical, mental, and social well-being and not merely an absence of disease and infirmity." [38] WHO recognized the importance of evaluating and improving people's quality of life in a position paper. Health-related quality of life is of major consequence across the whole spectrum of the human health continuum.

The term quality of life is difficult to define because it consists of several aspects: physical, mental and social health.

According to the Centers for Disease and Preventions (2016), quality of life is the main component of health effect. It is a broad multidimensional

Concept that usually includes subjective evaluations of both positive and negative aspects of life.

WHO defines the quality of life as "the individuals' perceptions of their life status concerning the context of culture and value system in which they live and their expectation, goals, concerns and Standards." When the quality of life is considered in the context of health and disease, it's referred to as health-related quality of life. Health-related quality of

Life is multidimensional and has domains that are related to physical, psychosocial, and social health and the social context in which people live. It refers to the psychological, physical, social health domains that are unique to any individual [39] .

Health is seen by the public health community as a multidimensional construct that includes physical, mental, and social domains .Some public health researchers have defined health-related quality of life as "the optimum level of physical and mental health relationship with others , and perception of health ,life – satisfaction fitness and well-being" [40] .

In the physical domain, perception and notice of normal or disruptive physical functioning, such as pain, limitations in mobility and physical dimensions, can be assessed objectively through health care workers or different instruments such as impaired physical strength and disabilities. The social domain includes performance of societal functioning such as responsibilities at and outside the home such as the relationship with family members, friends and colleagues. The psychological domain examines emotional and mental functioning such as mood, distress and patient's concern [41]. Physical limitations may lead to an increase in incidence of mental health problems, thus affecting negatively the physical well- being of a person.

1.9 Significance of the Study

The technological development of medical procedures (such as renal transplant procedure) and critical care of chronic diseases have led to the

increase of survival rate and improvement of quality of life. In the last few years, renal transplantation was introduced as a new advanced procedure in the West Bank.

Against this background, this study was conducted to assess dimensions of qualitxy of life, to expand the knowledge and information about multiple aspects of physical and mental well being, after renal transplantation, compared with patients who have undergone hemodialysis. The results would help to plan the patient's treatment strategy. Also this study sought to encourage hemodialysis patients to undergo renal transplant procedure to improve their life. Furthermore, this study is very important in relation with the kidney transplantation when compared with hemodialysis. This would help the doctors and the patients to decide which one is more important: dialysis or kidney transplantation. Finally, the study can be a guide to explore the quality of life of the patients suffering from other diseases.

1.10 Statement of the Problem

In the West Bank, health statistics show that ESRD is a public health problem and is one of chronic diseases leading to disabilities in different aspects of individual’s life, and it ranks eighth place in causing death , according to Palestine Health Information Center [(42)] . However, a few studies have been conducted in the West Bank to identify the quality of life after renal transplantation procedure. Patients with CRF can undergo either hemodialysis or renal transplantation to improve quality of life for

Survival. After renal transplantation procedure, the patient's life style may changes and interferes with his/her daily life activities.

The patient's aspects of life influenced by renal transplantation are eating habits, social relationship with others, vacation activity, ability to enjoy life [43] and exposure to pain. As a result, the physical and mental well-being of patient are negatively affected. If renal transplantation procedure functioned well, it would contribute to better quality of life. Furthermore,

the side effects of immunosuppressive medications include frequent nephrology clinic visits for medical follow up, infections after renal transplantation, anxiety and stress concerning rejection grafts and fear from potential loss of graft which could lead to negative emotional effects on patients.

1.11 Aim of the Study

The aim of this study was to identify the quality of life (mental and physical well-being) of patients who had renal transplantation in comparison with patients who underwent hemodialysis in Palestine Medical Complex and An- Najah National University Teaching Hospital.

1.12 Research Questions

1. Is the quality of life of renal transplantation patients better than hemodialysis patients in all dimensions?

2. Do the socio-demographic characteristics influence quality of life?

1.13 Specific Objectives

1. To identify of quality of life (mental and physical well-being) patients who have undergone renal transplantation.

2. To identify quality of life (mental and physical well-being) of patients currently undergoing hemodialysis in Palestine Medical Complex and An-Najah National University Teaching Hospital.

3. To compare the quality of life of patients undergoing hemodialysis with patients after kidney transplant**.**

1.14 Hypotheses

1. There is no significant difference between variables of gender, age, level of education, and place of residence due to quality of life scores among two groups of patients.

2. There is no significant correlation between low quality of life and renal transplantation at level of (p value ≤ 0.05).

3. There is no significant correlation between high quality of life and patients who have undergone hemodialysis at level of (p value ≥ 0.05).

Chapter Two
Literature Review

Renal Replacement Therapy and advanced technology options such renal transplantation and hemodialyses are used to manage ESRD and CKD, thus improving the patient's quality of life and survival rate.

Many studies have used SF-36 instrument to evaluate and assess the quality of life after renal replacement therapy to facilitate assessment and evaluation of therapy benefits both physically and psychologically.

2.1 Hemodialysis and Quality of Life

Several studies have been conducted on the quality of life of hemodialysis patients. Researchers have conducted studies on hemodialysis patients who have experienced negative changes: physical, psychological and social.

Maria Carolina et al .2011compared the dimensions of quality of life of 155 patients in all stages of their chronic kidney disease . Results revealed that their quality of life of patients with renal diseases had decreased[(44)].

In Egypt by Abdelghany M et al. (2016), conducted a cross sectional descriptive study to assess self-perceptions of 81 adult patients with ESRD for ≥1years. It was found that the quality of life of hemodialysis patients declined in all domains, using the 36- item health survey. The mean physical composite scale was 35.57 ± 7.34 while the mean of mental composite scale was 36.6 ± 10.22. The lowest scores were those related to the role of limitations caused by physical health problems. The mean was

21.6± 31.56 while the mean for role limitations caused by mental health was 24.96 ± 35.27. This means all dimensions of the quality of life

(physical and mental well –being) decreased among hemodialysis patients[45] .

However, ESRD leads to many medical problems and complications such as cardiovascular disease, anemia, hypotension, air embolism, headache, transmission of blood –born infection such as hepatitis B and C and neurological complications. All these combined lead to decreasing vitality and energy level and physical functioning and difficulties in coping with social and family interactions [46] .

Quality of life can be measured according to two major dimensions: physical and mental components scores. Literature in the field has shown changes in the dimensions of physical and mental components among hemodialysis patients.

Physical limitations and fatigue have been described in many studies as most common symptoms among hemodialysis patients. Fatigue is one of the common symptoms associated with negative quality of life of hemodialysis patients [47].

In India, a comparative study reported that patients undergoing hemodialysis got poorer quality of life than patients after renal transplantation [48] .

In 2005a study was performed by Cleary J, & Drennan, to measure the quality of life of patients receiving hemodialysis. The results revealed that the patients undergoing hemodialysis had problems in an area related to physical component summary and included the following: vitality and physical function. It was also found there was a negative effect on overall quality of life among patients receiving hemodialysis [(49)] .

In Brazil, 2010, a cross sectional-study by Silveira CB et al was conducted on 50 patients. The results revealed the highest score of dimension that was negatively affected the most was the role of limitations due to the physical condition.

It was found that 58% of patients had a lower score when measuring quality of life, using SF 36 [(50)] .

Another study was conducted on 134 hemodialysis patients, with the purpose of investigating and correlating the levels of fatigue with quality of life of hemodialysis patients. It was also found that fatigue was the complex problem which negatively affected the quality of life among hemodialysis patients [(51)] .

Ghonemy, T.A. et al (2016) found that fatigue was negatively correlated with physical activity levels of hemodialysis patients. However, pain is a common symptom and causes physical limitations and affects negatively the quality of life. In this field, literature showed that hemodialysis patients complained about bodily pain and had an effect on quality of their life. Pain is a common problem and has a negative outcome on the quality of life. It

was also found that chronic pain was highly experienced among hemodialysis patients [52] .

In addition, Calls, J. et al (2009) described the bodily pain experienced by hemodialysis patients and found that patients experienced a high degree of pain especially during the hemodialysis session [53] .

Jhamb et al (2008) conducted a longitudinal cohort study on 917 hemodialysis patients and peritoneal hemodialysis patients. The authors assessed fatigue, using SF-36, according to vitality scale. They found the lowest score among patients with dialysis was vitality [54] .

Patients who undergo hemodialysis experience mental health problems, because it is a lifelong therapy. They report feeling of loss of perception and hopelessness and change in social relationship. These are psychological difficulties experienced by all patients during hemodialysis[55].

Hemodialysis is debilitating procedure. A patient needs three to four sessions per week. It requires restrictions on dietary, life style, fluids to keep patient alive and increase quality of life and accommodate his/her

Illness. The restrictions also have an impact on psychological function Literature has showed patients who experienced depression and anxiety as primary mental health problems.

There is also a decrease in the quality of life among HD patients [56] .

Another study was conducted to compare symptoms of depression and quality of life among 90 patients with ESRD and 87 patients with CKD. SF-36 was administered to measure the quality of life. The findings suggested that ESRD suffered from physical symptoms and depression and had lower quality of life [57] .

Santos, P. R. (2011) carried a study in Brazil; he found that 7.8% of ESRD patients had symptoms of depression according to SF-36 scale, and the study showed a lower mental component summary score when assessed quality of life. This means that hemodialysis patients had a poor quality of life [58] .

Tezel et al (2011) conducted a study in Turkey; they found that the mean of depression was 23.2 ± 10.2, and the scores were very high [59] .

However, one study reported that social and family interaction among hemodialysis patients experienced a change [60] .

To sum up, literature has investigated patients with ESRD patients who suffered from physical impact (fatigue and decreased energy level), leisure activity problems and social interaction, and symptoms of depression feelings. All this clearly indicates that hemodialysis has both psychological and physical burdens, and these negatively affect the quality of life of patients.

2.2 Renal Transplantation and Quality of Life

Patients with ESRD, after choosing renal transplantation, would be expected to become more active and to return to their normal lives. Renal transplantation procedure is the best therapeutic for ESRD and has been associated with improvement in quality of life. This is one of the important issues for discussion to measure the importance of renal transplantation for patients who have kidney failure. The major goal of renal transplantation is the achievement of optimal quality of life.

A study reported of renal transplantation effect on patient's physical and mental well-being. Relevant literatures showed renal transplant recipients had better quality of life than patient on dialysis such as study in Korean concluded that kidney transplant patients have a higher QOL and how patients perceive their health is the strongest influencing factor for QOL[(61)]. The psychological and physical aspects are considered indicators of quality of life among patients after renal transplantation [(62)].

There is evidence suggests that renal transplants patients may experience improvement in life participation compared to patients receiving dialysis. They have greater engagement in social activities, better physical functioning, greater recreational activities and better ability to work. In other words, all aspects of quality of life tend to improve after renal transplantation.

Physical function is one important determinant of health. A cross-sectional observational study evaluated and described the different components of

physical performance and the quality of life. It was found that the renal transplant patients had different degrees of physical weakness and body function [63].

In addition, a cohort prospective study was carried out in the UK by Griva, K et al in 2011 to evaluate changes in quality of life after renal transplantation for 6 years for 102 patients. After SF-36 analysis, it was found that pain, physical summary score and vitality were the most negatively affected domains [64] .

However, the immunosuppressive agents after graft may lead to weight gain [65] and this may lead to physical impairments, and the negative health results of anti-rejection medications lead to less vitality and less general health status than general population.

Other studies have addressed quality of life of hemodialysis and renal transplants patients. One study done in India (2010) by Mini , A et al compared quality of life of 50 renal transplants patients and 50 patients who underwent hemodialysis. It was found that the scores of quality life in renal transplant patients in all domains were higher than those of the hemodialysis patients [66].

There was also a national cohort study which described life situation and life style of 280 renal transplants (18 to 35 years old) in comparison with 2, 360 respondents of the same age of general population. The authors of the study used the multiple linear regressions to analyze SF-36 to assess quality of life. They found the kidney transplant patients adapted well in their

families and life situation. However, they were compared with other healthy people and it was found, after analysis of SF-36, that their physical component summary and mental component summary were lower than that of the general population [67] .

Mendonça carried out a study and found that the renal transplantation had a positive impact on the quality of life of patients in all domains [68] .

A cohort longitudinal prospective study by Von der Lippe, N et al in 2014, which lasted for five years, was conducted on 110 patients to assess the change of quality of life in the transition period from hemodialysis to kidney transplantation, using SF36. It was reported that the quality of life after renal transplantation improved [69] .

A retrospective cross- sectional study by Parajuli S in 2016 carried out on 200 patients who received a transplant ≥1years ago and who also received previously hemodialysis for ≥ 1 year, with the purpose of assessing the employment status and social participation after renal transplantation. It was found that the renal transplant patients were more frequently engaged in social participation and leisure activities than when there were on dialysis [70].

However, social relationship is considered an important parameter for assessing the success of renal transplantation. A related literature has showed that the social relationship has a good effect on patients' outcomes. One study reported that depression ameliorated in the post renal transplant patients, and there was improvement in life satisfaction.

One study compared anxiety and depression levels between renal transplant recipients and hemodialysis patients. It was found that patients after renal transplant had less symptoms of anxiety as compared with hemodialysis patients [71] .

Álvarez-Rangel, L. E et al (2015) compared the differences in quality of life among hemodialysis patients and those with renal transplantation and identified the factors associated with patient's quality of life. The outcome was measured using SF-36. They found that the best quality of life among three treatment modalities was renal transplantation [72].

In a similar longitudinal prospective study, the SF-36 questionnaire was administered to assess the quality of life of 106 patients. It was found that the quality of life improved mental and physical health after renal transplantation procedure [73].

To sum up, renal transplantation is the best effective procedure for ESRD. Physical, psychological and social health well-being usually improves after using this procedure.

2.3 Factors Associated with Quality of Life in Renal Replacement Therapy

In serious diseases, like ESRD, many factors have been assessed to find association between them and quality of life. One study by Anees, M et al in 2014 assessed the variables that influenced the quality of life, using SF-36 instrument, of 1,061 participants who had functioning kidney transplant

over 18 years. The study concluded that the socio-demographic variables played a role in the quality of life after renal transplantation. These factors were gender, old age (patients older than 75 years old, patients who had high BMI (more than 30kg), loneliness, primary education, no schooling, hospitalization in the last 4 weeks, diabetes and long duration of dialysis (more than 3 years). All these factors were associated with lower quality of life. Another study revealed that female participants had worse score of quality of life than male participants. The low social status and lack of employment may lead to decrease of scores of quality of life. Lower educational level and worse financial situation impaired the quality of life, and long duration of dialysis led to deterioration of the quality of life of hemodialysis patients [(74)].

In Egypt, a cross- sectional descriptive study was conducted and showed that the patients undergoing hemodialysis had decreased PHC and MHC[(75)].

Literatures also has proved that socio-demographic factors of male, high educational level, patient's higher family income and young aged patients had better quality of life.

In Uruguay by Galain AI , a cross -sectional study was done to identify the variables that affected the quality of life of 243 patients undergoing dialysis. It was found that biomedical, socio-demographic and psychosocial variables influenced physical and mental components summary of SF36 subscale [(76)].

2.4 Studies in the West Bank

Few studies in the West Bank have focused on quality of life of patients undergoing hemodialysis and have been conducted on quality of life after renal transplantation. A cross- sectional study by Sa'ed HZ et al (2016) was conducted on 267 patients undergoing hemodialysis. This study assessed quality of life and related factors. The sample was taken from all hemodialysis units in the West Bank. The study found that the factors that negatively affected the quality of life were the following: low level of education, refugee camp life, gender, elderly patients, patients taking chronic medications, and patients suffering from multiple diseases [77] .

Another study by Basheer , K (2011) was conducted to identify the major risk factors that caused Onset End-Stage Renal Disease in the northern West Bank. It was found that 15.5% of ESRD cases were related to genetic diseases and 11.5% were due to polycystic kidney disease, 4.7% were due to prostate and bladder cancer and 2% were related to accidental causes. It was concluded that hypertension, diabetes mellitus, cardiovascular disease, urinary tract infections, recurrent taking non-steroidal anti-inflammatory drugs were associated with onset of renal failure [78].

Chapter Three
Methods

This chapter describes the methodological design, the sample selection, the setting, data collection procedure, SF-36 questionnaire and statistical analysis.

3.1 Study design

This study used a quantitative, cross-sectional design to assess the quality of life (mental and physical heath) of patients undergoing hemodialysis and renal transplant in Palestine Medical Complex and An-Najah National University Teaching Hospital, Nablus.

3.2 Setting

The study settings were two hospitals. The first one is a public hospital established in 1963. A decision was made in 2010 to make it the largest hospital in the West Bank. It consists of five buildings: Ramallah Public Hospital, National Center for Blood Diseases-Hippocrates, Al-Sheikh Zayed, Al-Kuwaiti (specialized in kidney transplant procedures) and Bahrain Pediatric Hospital. The 250- bed compound has a dialysis department that serves 150 hemodialysis patients with 22 dialyzer machine. It managed to offer 1,900 dialysis sessions in 2016.

The second hospital is An-Najah National University Teaching Hospital. Located in Nablus, its total area is about 17,000 square meters and was established in 2013 jointly with the Faculty of Medicine and Health

Sciences at An-Najah. It's classified as non-governmental and non-profit. The hospital has 120 beds, and includes many departments. Its dialysis unit serves 255 patients and has 33 dialyzers machines.

3.3 Population and Sample size

The participants were more than 18 years old and were of both sexes at the dialysis units. They had functioning renal grafts which followed nephrology clinic in dialysis units in Palestine Medical Complex and An-Najah National University Teaching Hospital.

The study field work was conducted between 25 May – 25 August 2017 . All of the 272 hemodialysis patients were treated by the two hospitals. The number of the renal transplantation patients, who have undergone the procedure in Palestine Medical Complex since 2010, was 255; these patients were included in this study.

3.4 Sampling technique

A convenient sampling technique was used to collect the sample. Participants were taken from Palestine Medical Complex and An-Najah National University Teaching Hospital, the total ESRD patients number who underwent hemodialysis in two hospitals are 374 and total renal transplanted patients number 258, not all were included in the study, only patients met inclusion criteria . The data was collected from patients who had renal transplant and patients who underwent hemodialysis in the two

medical facilities. The study sample was classified into two groups: renal transplant patients and hemodialysis patients.

3.5 Sample selection

3.5.1 Inclusion criteria

1. Patients underwent hemodialysis in the two medical facilities.

2. Patients after renal transplantation procedure one year ago.

3.5.2 Exclusion criteria

1. Patients with severe clinical conditions (physical and mental limitations) which may limit their ability to fill out the questionnaire.

2. Patients under 18 years old were not authorized to fill out the questionnaire and sign the Consent Form.

3. Patients who refused to participate in the study.

4. New diagnosis of renal failure less than three months because, prior to this period, the researcher couldn’t notice clearly the changes in quality of life.

5. Patients who couldn’t be reached and who failed to visit the nephrology clinic during the data collection period.

3.6 Study Instrument: SF-36 Questionnaire

The SF-36 instrument was developed by Ware and Shebourne in 1992. It focuses on the person's experience, perceptions, beliefs, convictions and feelings about their quality of life in the past four weeks. It contains close-ended structure items related to eight quality of life indicators with two major summary measures that revolved around both mental and physical health. The participants had to choose their answers from a set that complied with the methodological guidelines for close- ended questions. There were no loaded items; they were clearly formulated; they used easy theoretical concepts and all questions measured quality of life [(79)] .

The SF-36 instrument was chosen to evaluate the physical and mental components of the quality of life (See Annex1); it assessed eight dimensions of quality of life. The physical role domain consisted of four items; the physical functions consisted of ten items; general health consisted of six items and bodily pain consisted of two items and were related to physical components summary. The social functioning domain consisted of two items. The emotional role consisted of three items; energy/vitality consisted of four items and mental functioning consisted of five items and were related to mental health component summary. All domain scores were transformed on scale range from 0 (worst level of health) to 100(best level of health). These eight domains can be grouped into two major summaries. The first one is a physical component score which evaluated perception of disabilities or limitations in self –care, social, and physical roles, presence of fatigue and bodily pain. The mental

component score evaluated the patient's feeling of psychological distress, social and emotional role disabilities because of emotional problems. The scale (social functioning, general health and vitality) can be considered a mental or physical component [80] . Figure 1shows the eight domains covering physical and mental performance. In addition to SF-36 instrument, the questionnaire had socio-demographic questions about patient's age, gender, level of education, place of residence and patient's condition: renal transplants or hemodialysis.The statistics and scoring of each dimension were completed using a special method (Annex 2).

3.7 Study Variables

The variables in this study were divided into dependent and independent variables. The dependent variables were classified into eight dimensions. They contained 36 questions, and were also classified into two major summaries: physical component and mental component scores

3.7.1 Dependent Variables

The dependent variables were quality of life scale and its components

3.7.2 Independent Variables

Independent variables were categorical variables: patient type, gender, age group, level of education and the place of residence.

3.8 Data Collection and Procedure

The researcher met the hospitals' directors and head nurses of the dialysis units in the two hospitals and with the nephrologists in the nephrology clinics to explain to them the aim and significance of the study before data collection. All patients were undergoing hemodialysis as they came in dialysis units for routine dialysis at An-Najah National University Teaching Hospital and Palestine Medical Complex. The renal transplant recipients approached came for routine follow –up to nephrology units in these hospitals. Then the researcher met with the hemodialysis patients in dialysis units and renal transplants patients in nephrology clinics. To explain the purpose of the study, and confidential issues, the participants were given a consent form (Annex 4). Face to face interviews were conducted, using structured interview (Annex 5). The researcher took into consideration the rights of the patients to choose the

appropriate time for the interviews because on dialysis they may feel discomfort during dialysis session. Each interview lasted 25-35 minutes.

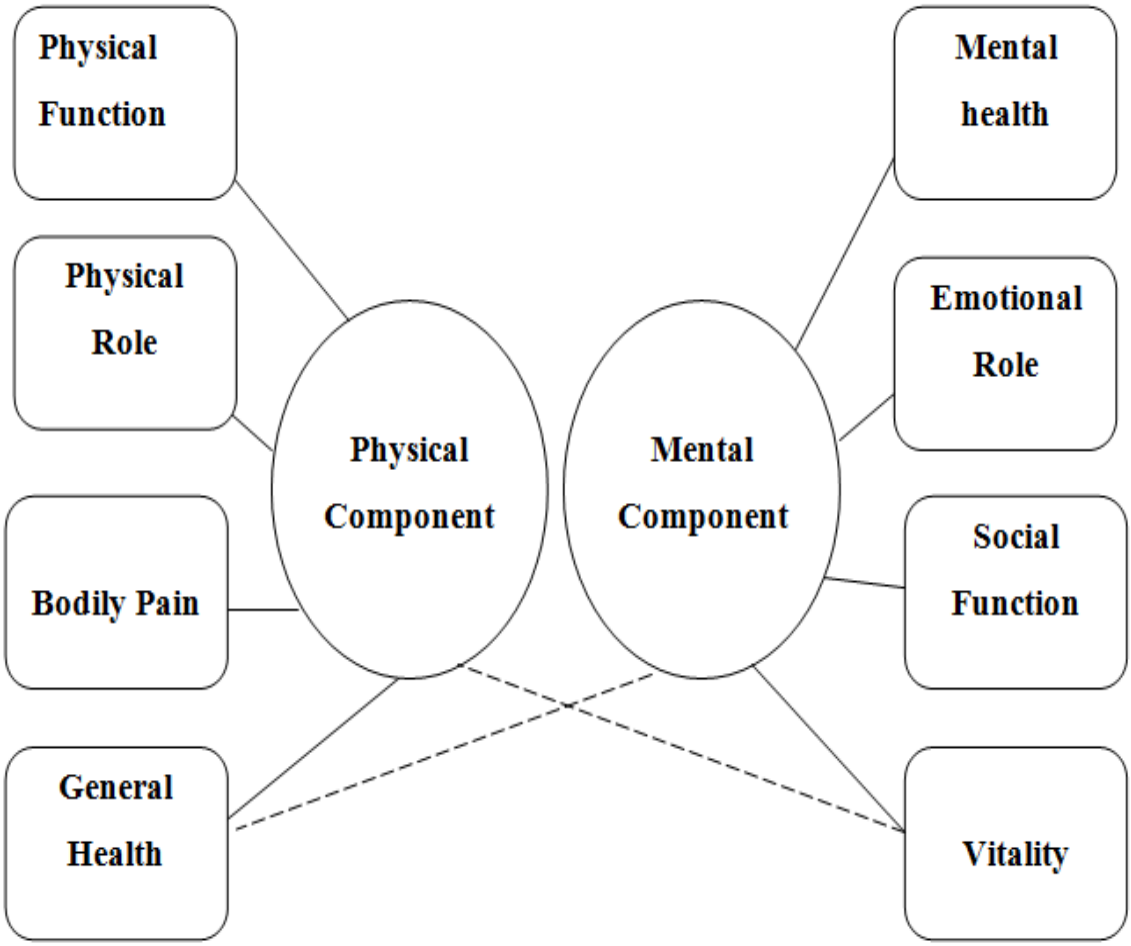


Figure 1: SF-36 Two Component Model. [81]

3.9 Validity

3.9.1 Translation

Standard translation and backward-forward procedure by Abdulaziz et al (1997) were applied to translate SF-36 questionnaire from English into Arabic (82). The translation was done by a bilingual person who had the same culture adaptation.Therefore, the Arabic language version is reliable and it's like the English language version [83].

3.10 Reliability

The SF-36 was found to be a valid, reliable, concise, and generic measure of state of health in previous studies. In one study, the overall statistical value for Cronbach's alpha was equal to 0.91 (95% CI: 0.91-0.94) and in all domains, this value ranged from 0.7 to 0.92 [84]., another Arabian study at Saudi Arabia found SF-36 to be valid and reliable , it concluded the internal consistency for this questionnaire was high (α 0.72–0.90) across the eight subscales and the results suggest that the SF-36 questionnaire is a useful scale to measure the quality of life [85].

3.11 Ethical considerations

The study was approved by An-Najah National University Institutional Review Board. Permission letters were obtained from the officials of An-Najah National University Teaching Hospital and Palestine Medical Complex to conduct this study. A consent form was obtained from all patients after discussing with them the purpose of the study and all matters related to the study purposes. If patients became tired during the interview, the researcher would cancel it until he/she could start again.

3.12 Statistical Analysis

The questionnaires were administered to the patients. Then the researcher collected the answers from them. The SPSS program was used to analyze the current study findings and to compare the mean differences in the different components of the questionnaire: PF, RP, RE, BP, GH, VT, SF,

MH, MCS and PCS. This was in accordance with the categorical independent variables. Independent t-tests and ANOVA were used for the inferential statistics. Analysis of variance (ANOVA) was followed by a post hoc test (Tukey test) to check if the categories differed significantly.

Chapter 4
Results of the Study

This chapter reports the results of data analysis. It includes socio-demographic characteristics of all participants (hemodialysis and renal transplantation) and their quality of life domains. It also includes frequency of personal opinions on health in general and proportion of patients in each category of personal opinions on health status compared to one year ago among all patients and then each one separately. The chapter ends with health comparison of quality of life of hemodialysis and renal transplant patients.

4.1 Socio-demographic Characteristics

Hypothesis 1: There is no correlation between demographic data, namely gender, age, level of education, and place of residence and quality of life scores among the two groups of patients.

Table 4.1: Socio-demographic characteristics of Hemodialysis and Renal Transplants

	Group	Males: n (%)	Females: n (%)	Total: n (%)
Number (%)	HD RT	158(58.1%) 75(75%)	114(42.9%) 25(25%)	272(100%) 100(100%)
Age: (Mean ± SD)	HD RT	51.12 ± 12.40 38.69± 17.06	52.92± 13 35.54 ± 19.28	
18-29	HD RT	10(6.3%) 25(33.3%)	7(6.1%) 11(44%)	17(6.3%) 36(36%)
30-60	HD RT	93(58.9%) 47(62.7%)	58(50.9%) 14(56%)	151(55.5%) 61(61%)
>60	HD RT	55(34.8%) 3(4%)	49(43%) 0	104(38.2%) 3(3%)
Qualification :				
Primary	HD RT	50(31.6%) 2(2.7%)	63(55.3%) 3(12%)	113(41.5%) 5(5%)
Preparatory	HD RT	27(17.1%) 20(26.7%)	25(21.9%) 3(12%)	52(19.1%) 23(23%)
Secondary	HD RT	36(22.8%) 28(37.3)	12(10.5%) 12(48%)	48(17.6%) 40(40%)
Post-Secondary	HD RT	45(28.5%) 25(33.3%)	14(12.3%) 7(28%)	59(21.7%) 32(32)
Place of Residence :				
City	HD RT	49(31%) 24(32%)	27(23.7%) 9(36%)	76(27.9%) 33(33%)
Village	HD RT	85(53.8%) 44(58.7%)	66(57.9%) 14(56%)	151(55.5%) 58(58%)
Camp	HD RT	24(15.2%) 7(9.3%)	21(18.4%) 2(8%)	45(16.5%) 9(9%)

According to the previous table, the total number of eligible hemodialysis participants was 272, about 58% of them were males with mean age of 51.12 years as opposed to 43% females with mean age of 52.92 years. Most of hemodialysis patients were 30-60 years old (55.5%), and 38.2% of them were from age group >60. Only 6.3% of them belonged to 18-29 age groups.

Concerning the qualifications, most of the hemodialysis patients had primary education (41.5%), 21.7%of them had post- secondary education, 19.1% of them had preparatory education and 17.6% of them had secondary education. The hemodialysis patient were mostly residents of villages (55.5%), 27.9% of them were city residents and 16.5% of them were refugee camp residents.

The total number of eligible renal transplants patients was 100. Of these, 75% of them were males with mean age of 38.69 years and 25% of them were females with mean age of 35.54 years. Most of the renal transplants patients were 30-60 years old (61%), and only 3% belonged to age group (>60) while 36% of them belonged to 18-29 age group.

Concerning qualifications, most of the renal transplants participants had secondary education (40%) and post- secondary (32%). Close to 23% of them had preparatory education as opposed to only 5% who had primary education .The renal transplants participants were village residents (58%), 33% of them were city residents and 9% of them were refugee camp residents.

Table 4.2: Age group differences in aspects of the SF-36 questionnaire among hemodialysis and renal transplant patients

Aspect	Group	18-29 Mean ± SD	30-60 Mean ± SD	>60 Mean ± SD	F	P-value
Physical Functioning	HD	24.71 ± 21.47	49.11 ± 28.26	69.28 ± 28.21	27.034	0.004
	RT	12.36 ± 17.75	13.2 ± 16.48	33.33 ± 49.07	1.860	0.161
Physical Role	HD	51.47 ± 41.9	42.05 ± 41.17	21.15 ± 32.45	11.024	0.003
	RT	79.17 ± 34.59	84.02 ± 25.83	58.33 ± 52.04	1.218	0.300
Bodily Pain	HD	62.79 ± 23.85	55.81 ± 29	49.98 ± 30.11	2.056	0.130
	RT	88.33 ± 20.31	88.52 ± 20.43	62.5 ± 22.91	2.347	0.101
General Health	HD	57.6 ± 19.22	42.69 ± 22.97	32.65 ± 21.8	12.002	0.001
	RT	75.35 ± 20.13	83.27 ± 17.82	88.89 ± 10.49	2.368	0.099
Vitality	HD	54.12 ± 24.12	43.18 ± 26.16	31.3 ± 21.9	10.557	0.000
	RT	63.75 ± 21.02	71.15 ± 18.63	60 ± 13.23	1.912	0.153
Social Functioning	HD	86.03 ± 17.61	72.6 ± 28.78	66.23 ± 27.97	4.228	0.016
	RT	91.67 ± 17.17	95.49 ± 10.71	87.5 ± 21.65	1.222	0.299
Emotional Role	HD	52.94 ± 45.73	46.58 ± 46.04	24.68 ± 37.45	9.022	0.004
	RT	81.48 ± 34.22	85.25 ± 26.19	55.56 ± 50.92	1.472	0.235
Mental Health	HD	52.24 ± 22.2	50.15 ± 30.33	52.23 ± 27.68	0.175	0.840
	RT	71.56 ± 22.72	79.15 ± 20.72	72 ± 8	1.500	0.228
Physical Composite Summary	HD	49.14 ± 11.42	47.41 ± 13.87	43.27 ± 12.14	3.634	0.028
	RT	63.8 ± 12.68	67.25 ± 10.18	60.76 ± 5.95	1.417	0.247
Mental Composite Summary	HD	61.33 ± 22.48	53.13 ± 25.2	43.61 ± 22.04	6.935	0.001
	RT	77.11 ± 16.67	82.76 ± 14.48	68.76 ± 14.33	2.419	0.094

Pertaining to hemodialysis patients, the results showed that there were statistically significant differences between the age groups in physical functioning, physical role , general health, vitality, social functioning, emotional role, physical composite summary and mental composite summary(P-values<0.05). However, the results showed no statistically significant differences between the age groups in bodily pain and mental health(P-values>0.05).Therefore, the first hypothesis was rejected according to the age variable in all domains except in bodily pain and mental health domains among hemodialysis patients.

Pertaining to renal transplant patients, the results showed no statistically significant differences between the age groups in all the quality of life domains(all P-values>0.05), but it was clear that in physical functioning, the age group >60 mean(33.3) was higher than the mean value of other groups and its mean was less than that of the other groups in the physical role (mean=58.33) , in the bodily pain (mean=62.5) and in the emotional role (mean=55.56).This result is because this group in these domains had a high standard deviation relative to the mean values. Therefore, the first hypothesis was accepted according to the age variable among the renal transplantation patients.

Table 4.3: Comparison between males and females in SF-36 domains score among hemodialysis and renal transplantation patients

Aspect	Group	Male Mean ± SD	Female Mean ± SD	Mean Difference	T	P-value
Physical Functioning	HD	46.68 ± 28.8	67.24 ± 28.68	-20.56	-5.820	0.001
	RT	12.47 ± 19.37	16.6 ± 14.84	-4.13	-0.975	0.332
Physical Role	HD	37.97 ± 40.86	30.04 ± 37.21	7.93	1.639	0.102
	RT	81.67 ± 31.12	81 ± 27.27	0.67	0.096	0.924
Bodily Pain	HD	61.91 ± 27.51	43.07 ± 28.18	18.84	5.517	0.001
	RT	86.63 ± 22	90.8 ± 16.28	-4.17	-0.870	0.387
General Health	HD	43.35 ± 23.58	34.83 ± 21.83	8.52	3.033	0.003
	RT	80.06 ± 19.64	82.17 ± 16.38	-2.11	-0.484	0.630
Vitality	HD	44.43 ± 25.76	32.24 ± 23.03	12.19	4.024	0.020
	RT	69.33 ± 19.48	64.6 ± 20	4.73	1.046	0.298
Social Functioning	HD	75.32 ± 27.54	65.02 ± 28.28	10.29	3.008	0.003
	RT	93.5 ± 14.29	95 ± 11.97	-1.50	-0.472	0.638
Emotional Role	HD	43.46 ± 46.19	31.87 ± 40.5	11.59	2.148	0.033
	RT	82.22 ± 32.11	85.33 ± 23.73	-3.11	-0.445	0.657
Mental Health	HD	53.57 ± 29.21	47.61 ± 28.03	5.96	1.687	0.093
	RT	76.37 ± 20.32	75.68 ± 24.79	0.69	0.140	0.889
Physical Composite Summary	HD	47.48 ± 13.62	43.8 ± 12.4	3.68	2.285	0.023
	RT	65.21 ± 11.48	67.64 ± 10.01	-2.44	-0.947	0.346
Mental Composite Summary	HD	54.19 ± 25.3	44.19 ± 21.89	10.01	3.403	0.001
	RT	80.36 ± 16.07	80.15 ± 14.07	0.20	0.057	0.955

Concerning hemodialysis patients, the results showed that there were statistically significant differences between males and females in physical functioning, bodily pain, general health, vitality, social functioning, emotional role, physical composite summary and mental composite summary (P-values<0.05). In contrast, the results showed no statistically significant differences between males and females in physical role and mental health(P-values>0.05). Females were significantly higher than males only in physical functioning. In the light of these findings, the first hypothesis was rejected due to the gender variable in all domains except in physical role and mental health domain among hemodialysis patients

Pertaining to renal transplant patients, the results showed that there were no statistically significant differences between males and females in all quality of life domains (all P-values>0.05). Therefore, the first hypothesis was accepted due to the gender variable among renal transplant patients.

Table 4.4: Differences in levels of education in SF-36 domains among hemodialysis and renal transplant patients.

Aspect	Group	Primary Mean ± SD	Preparatory Mean ± SD	Secondary Mean ± SD	Post-Secondary Mean ± SD	F	P-value
Physical Functioning	HD	68.54 ± 27.1	56.35 ± 31.3	43.02 ± 25.47	38.98 ± 28.05	18.359	0.000
	RT	23 ± 23.08	15.22 ± 23.33	11.63 ± 15.95	13.13 ± 16.74	0.650	0.585
Physical Role	HD	20.8 ± 32.37	37.02 ± 43.01	41.67 ± 39.39	53.39 ± 40.06	10.657	0.003
	RT	80 ± 20.92	66.3 ± 38.14	85.63 ± 27.67	87.5 ± 24.59	2.780	0.045
Bodily Pain	HD	43.92 ± 27.28	57.5 ± 31.6	63.54 ± 27.53	62.54 ± 26.71	8.796	0.000
	RT	91 ± 20.12	86.85 ± 24.93	85 ± 21.66	91.09 ± 16.23	0.560	0.642
General Health	HD	32.82 ± 21.74	39.9 ± 23.17	41.93 ± 21.72	51.27 ± 22.75	9.098	0.007
	RT	75.83 ± 21.33	78.26 ± 16.81	77.92 ± 20.06	86.33 ± 17.75	1.507	0.218
Vitality	HD	31.68 ± 23.63	38.85 ± 26.49	44.17 ± 22.91	50.42 ± 24.92	8.432	0.060
	RT	61 ± 24.08	65.65 ± 19.09	67.38 ± 20.13	72.03 ± 18.87	0.779	0.508
Social Functioning	HD	63.5 ± 29.84	74.28 ± 25.54	78.65 ± 24.05	76.27 ± 27.82	4.952	0.002
	RT	82.5 ± 24.37	94.02 ± 14.04	92.81 ± 14.68	96.88 ± 8.98	1.782	0.156
Emotional Role	HD	24.19 ± 36.8	37.18 ± 46.04	47.22 ± 46.04	60.45 ± 44.41	10.429	0.009
	RT	73.33 ± 27.89	66.67 ± 38.92	87.5 ± 26.89	90.63 ± 22.77	3.677	0.015
Mental Health	HD	47.61 ± 30.5	50 ± 24.28	52.67 ± 28.64	57.36 ± 28.89	1.561	0.199
	RT	83.2 ± 27.19	77.22 ± 19.57	72.8 ± 25.75	78.63 ± 15.19	0.663	0.577
Physical Composite Summary	HD	41.52 ± 11.8	47.69 ± 13.35	47.54 ± 13.15	51.55 ± 13.29	9.023	0.008
	RT	67.46 ± 9.61	61.66 ± 12.4	65.04 ± 11.45	69.51 ± 9.04	2.450	0.068
Mental Composite Summary	HD	41.74 ± 23.24	50.08 ± 22.96	55.68 ± 23.05	61.13 ± 23.63	10.219	0.000
	RT	75.01 ± 19.09	75.89 ± 15.08	80.12 ± 17.3	84.54 ± 12.14	1.641	0.185

The results showed that there were statistically significant differences due to the level of education in physical functioning, physical role, bodily pain, general health, vitality, social functioning, emotional role, physical composite summary and mental composite summary (P-values<0.05). However, the results showed that no statistically significant differences due to the level of education of the groups in mental health (P-value>0.05), the first hypothesis was rejected due to the level of education variable in all domains except in mental health domain. Among renal transplant patients , the results showed statistically significant differences due to the level of education of the groups only in the physical role and emotional role(P-values<0.05). In contrast, the results showed that there were no statistically significant differences, due the level of education of the groups, in the other domains(P-value>0.05). Therefore, the first hypothesis was rejected due to the level of education variable in all domains except in role physical and role emotional domain among renal transplants patients.

Table 4.5: Differences in quality of life due to place of residence of two groups of patients.

Aspect	Group	City Mean ± SD	Village Mean ± SD	Refugee Camp Mean ± SD	F	P-value
Physical Functioning	HD	50.79 ± 32.54	55.99 ± 29.97	60.56 ± 27.84	1.550	0.214
	RT	11.52 ± 13.89	14.05 ± 20.29	17.22 ± 20.78	0.399	0.672
Physical Role	HD	37.83 ± 39.89	35.26 ± 39.82	27.22 ± 37.62	1.061	0.348
	RT	84.85 ± 25.72	81.47 ± 30.19	69.44 ± 42.9	0.926	0.399
Bodily Pain	HD	53.26 ± 30.38	55.15 ± 29.24	51.5 ± 27.83	0.304	0.738
	RT	90.76 ± 15.02	87.28 ± 22.63	78.89 ± 25.13	1.190	0.309
General Health	HD	43.48 ± 25.4	38.38 ± 22.29	38.24 ± 22.16	1.340	0.264
	RT	81.44 ± 16.77	79.45 ± 19.84	84.72 ± 20.62	0.351	0.705
Vitality	HD	41.18 ± 28.12	39.14 ± 23.98	36.78 ± 25.18	0.434	0.648
	RT	67.73 ± 21.94	68.53 ± 17.57	67.22 ± 25.14	0.028	0.972
Social Functioning	HD	68.59 ± 30.1	72.1 ± 27.63	71.39 ± 27.52	0.395	0.674
	RT	95.83 ± 9.72	93.75 ± 14.48	87.5 ± 19.76	1.322	0.271
Emotional Role	HD	44.74 ± 45.4	37.75 ± 44.17	31.11 ± 41.68	1.412	0.246
	RT	87.88 ± 24.75	82.18 ± 30.73	70.37 ± 42.31	1.249	0.291
Mental Health	HD	50.16 ± 30.4	52.42 ± 28.35	48.09 ± 28.01	0.444	0.642
	RT	73.7 ± 23.64	78.28 ± 19.53	72 ± 25.22	0.668	0.515
Physical Composite Summary	HD	46.34 ± 13.89	46.2 ± 12.9	44.38 ± 13.33	0.375	0.688
	RT	67.14 ± 9.42	65.56 ± 11.31	62.57 ± 15.71	0.626	0.537
Mental Composite Summary	HD	51.17 ± 26.45	50.35 ± 23.78	46.84 ± 23.07	0.478	0.621
	RT	81.28 ± 15.31	80.69 ± 13.93	74.27 ± 24.83	0.759	0.471

As the table shows, there were no statistically significant differences due to the place of residence of groups in all quality of life domains (all P-values>0.05). Accordingly, the third hypothesis was accepted due to the place of residence variable among hemodialysis participants. Furthermore, the results showed that there were no statistically significant differences, due to the place of residence, in all quality of life domains (all P-values>0.05). Therefore, the first hypothesis was rejected according to the place of residence variable of renal transplant patients.

4.2 Personal Opinions on Health in General

Table 4.6: Frequency of personal opinions on health in general among all patients.

Personal opinion	Group	Frequency (Percent)
Poor	All Patients	37 (9.9%)
	HD	37(13.6%)
	RT	0(0%)
Fair	All Patients	97 (26.1%)
	HD	94(34.6%)
	RT	3(3%)
Good	All Patients	109(29.3%)
	HD	100(36.8%)
	RT	9(9%)
Very good	All Patients	60(16.1%)
	HD	29(10.7%)
	RT	31(31%)
Excellent	All Patients	69(18.5%)
	HD	12(4.4%)
	RT	57(57%)
Total	All Patients	372(100.0%)
	HD	272(100.0%)
	RT	100(100%)

As the previous table shows, most of all patients reported that their health in general was very good or fair. About 29.3% of them said that their health in general was good while 26.1% said that their health in general was fair.

Most of hemodialysis patients believed that their health in general was good or fair. Of these, 36.8% said their health in general was good while 34.6% said that their health in general was fair. In contrast, most of renal transplants patients believed that their health in general was very good or excellent. Of these, 31% said that their health in general was very good and 57% reported that health in general was excellent**.**

Table 4.7: Proportion of patients in each category of personal opinion on health condition compared to one year ago among hemodialysis patients.

Personal opinion	Group	Frequency (Percent)
Much worse now than one year ago	All Patients	43(11.6%)
	HD	42(15.4%)
	RT	1(1%)
Somewhat worse now than one year ago	All Patients	89(23.9%)
	HD	89(32.7%)
	RT	0(0%)
About the same	All Patients	61(16.4%)
	HD	53(19.5%)
	RT	8(8%)
Somewhat better now than one year ago	All Patients	92(24.7%)
	HD	69(25.4%)
	RT	23(23%)
Much better now than one year ago	All Patients	87(23.4%)
	HD	19(7.0%)
	RT	68(68%)
Total	All Patients	372(100.0%)
	HD	272(100.0%)
	RT	100(100%)

Table 4.7 shows that 23.9% of all patients believed that their health condition was somewhat worse now than one year ago as opposed to 24.7% of them who reported that their health condition was somewhat better now than one year ago, and 23.4% of them who said that their health was much better now than one year ago. And 32.7% of hemodialysis patients believed that their health condition was somewhat worse now than one year ago while 25.4% of them said that their health condition was much better now than one year ago. In addition, 68% of the renal transplant patients reported that their health condition was much better now than one year ago.

4.3 Comparison of Quality of Life of Hemodialysis and Renal Transplant Patients

Hypothesis 2: There is no significant correlation between low quality of life and renal transplantation at 0.05.

Hypothesis 3: There is no significant correlation between high quality of life and patients undergoing hemodialysis at 0.05.

The independent T-test was used to test Hypothesis 1and Hypothesis 2.

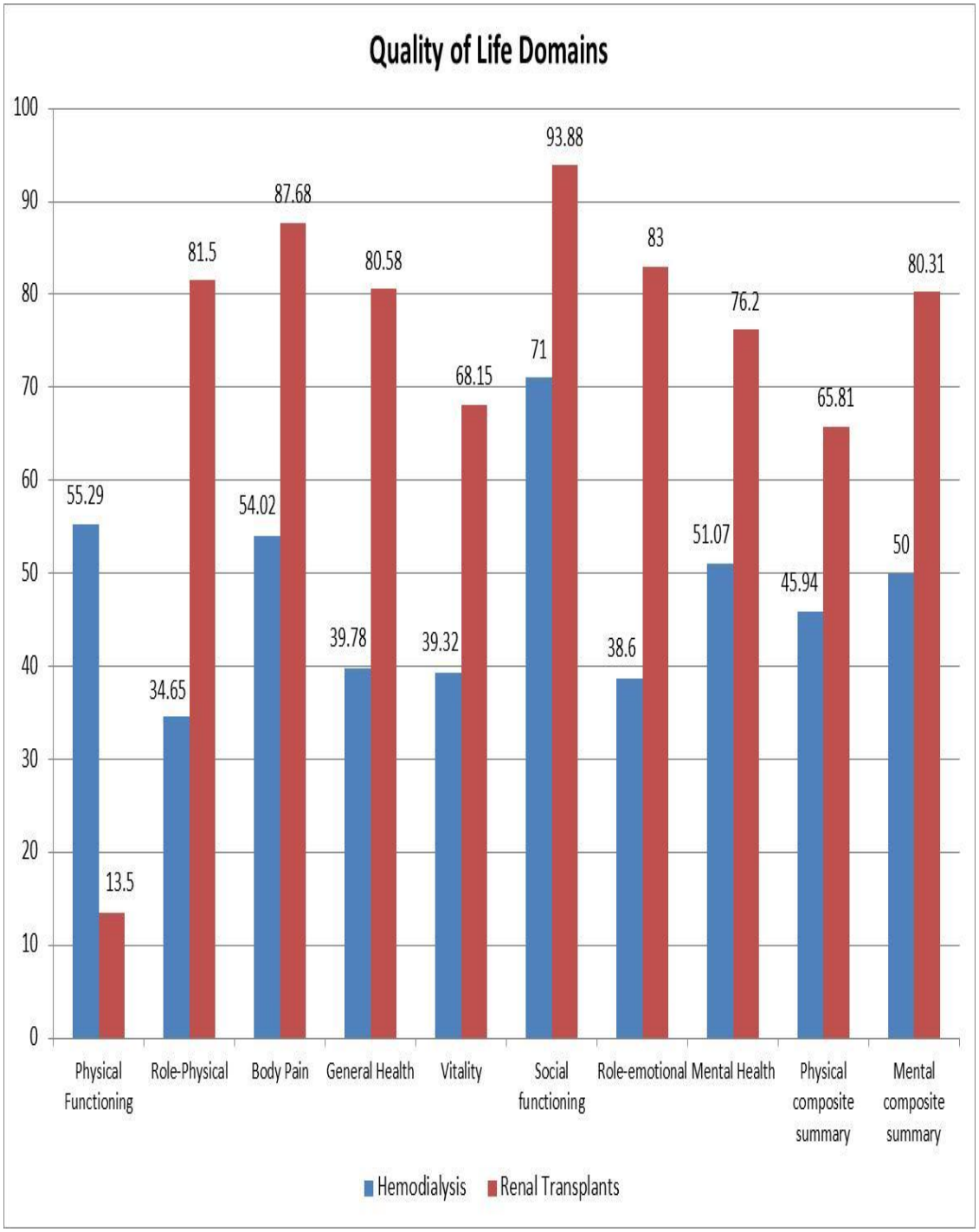
Table 4.8: Mean comparison of quality of life of hemodialysis and renal transplants patients.

Aspects	Hemodialysis Mean ± SD	Renal Transplantation Mean ± SD	Mean difference	T	P-value
Physical Functioning	55.29 ± 30.44	13.5 ± 18.36	41.79	12.888	0.002
Physical Role	34.65 ± 39.5	81.5 ± 30.07	-46.85	-10.766	0.004
Bodily Pain	54.02 ± 29.26	87.68 ± 20.72	-33.66	-10.565	0.009
General Health	39.78 ± 23.21	80.58 ± 18.82	-40.80	-15.772	0.007
Vitality	39.32 ± 25.34	68.15 ± 19.61	-28.83	-10.297	0.001
Social Functioning	71 ± 28.26	93.88 ± 13.7	-22.87	-7.760	0.006
Emotional Role	38.6 ± 44.19	83 ± 30.15	-44.40	-9.281	0.007
Mental Health	51.07 ± 28.82	76.2 ± 21.4	-25.13	-7.948	0.008
Physical Composite Summary	45.94 ± 13.22	65.81 ± 11.13	-19.88	-13.387	0.002
Mental Composite Summary	50 ± 24.39	80.31 ± 15.53	-30.31	-11.586	0.004

As the above table shows, there were statistically significant differences between hemodialysis and renal transplantation patients in all quality of life domains (all P-values<0.05). The renal transplants patients' quality of life domains were higher than those of hemodialysis patients except in the physical functioning domain.

Therefore, the second and third hypothesis was accepted. There was no significant correlation between high quality of life and patients undergoing hemodialysis at 0.05 except in physical function.

Comparison of quality of life domains of hemodialysis patients and renal transplant patients



Chapter 5
Discussion

5.1 Main Study Findings

This study has compared quality of life domains of hemodialysis and renal transplant patients in Palestine Medical Complex and An-Najah National University Teaching Hospital. To that end, the researcher has used SF-36 and socio-demographic variables which influence quality of life. The study's main findings have showed that renal transplant patients led a better quality of life, in both physical and mental components, than hemodialysis patients. These results are compatible with other studies which compared quality of life of renal transplant patients and patients who underwent hemodialysis. One study reported that health-related quality of life improved over time after renal transplantation[(86)] .

Another important finding in the eight domains of SF-36 tool is that all the domains were higher in renal transplant patients except for the physical function domain. It was better in hemodialysis patients. This domain finding was not compatible with the finding in other studies which found an improvement in all domains of quality of life after renal transplantation[(87)] .

5.2 Socio-demographic Characteristics and Relationship with Quality of Life

In this study, 58.1% of the hemodialysis sample patients were males and 42.9% were females. In the renal transplant sample group, 75% were male patients and 25% were females.

The results in the present study showed that the hemodialysis male patients had higher domain score in both physical and mental component summary (P-values<0.05). However, concerning the physical functioning, the females' (mean: 67.24) was significantly higher than the males' (mean: 46.68).

However, all other domains were better in male patients. For instance, the hemodialysis male patients scored higher health-related quality of life than female patients [88] .

Another study, however, found no statistically differences in the total scores of SF-36 in terms of physical health or mental health dimensions which could be attributed to gender variable [89] .

In a retrospective study, it was found that the physical function, the physical role and the bodily pain domains were low among female patients, but in other aspects, there were no differences between males and females[90] .

The reasons for differences in PCS and MCS, between male and female patients, might be due to differences in the clinician's attitude towards

female patients, or biological factors [91] .Another possibility could be physiological, psychological and behavioral differences between male and female patients.

Among the renal transplant patients, the mean scores of physical and mental component summary were almost equal between males, 65.21 ± 11.48 for PCS and 80.36 ± 16.07 for MCS, and female 67.64 ± 10.01 for PCS and 80.15 ± 14.07 for MCS, all P-values>0.05 . The results showed that there were no statistically significant differences between males and females in all quality of life domains. These results are not the same as the study has found. The average scores of quality of life were higher in male patients than in female patients, using SF-36 for renal transplant patients [92] .

Table 4.2 illustrates the age groups of hemodialysis patients. Age group 18-29 got the highest scores in the physical and mental component summaries and a mean of 59.1 in the physical component summary and a mean of 72.05 in the mental component summary. However, there were no statistically significant differences between the age groups of renal transplant patients in all quality of life domains (all P-values>0.05).

A study conducted in Brazil showed a relationship between positive scores in the SF-36 physical component summary and young dialysis patients [93] .

Another study reported that the elderly patients had an impaired quality of life in all dimensions [94] .

A possible explanation for that is that the elderly patients usually experience cognitive and physical problems. With aging, energy, physical abilities and self- care decrease automatically, and more likely complications could happen to the elderly, so it affects their physical and mental health in all quality of life domains.

Table 4.2 shows that there were no statistically differences between the age groups of renal transplant patients in all quality of life domains (all P-values > 0.05) .

One study found no statistically differences between age groups after renal transplantation [95] .In contrast, other studies showed negative

association between renal transplant patient's age and his/her quality of life especially in the physical function [96].

The reason why aging was not related to quality of life score of the renal transplant patients, in this present study, is that the participants above 60 represented a small portion (3%). With old age, complications increase including diabetes, hypertension, neuropathy and cardiovascular disease. All these are related to ESRD. Therefore, the renal transplantation procedure is not recommended for the elderly patients who have other chronic diseases with ESRD.

In the present study, it was also found that there were statistically significant differences in the levels of education of hemodialysis patients.

The domains of physical functioning, physical role, bodily pain, general health, vitality, social functioning, emotional role, physical composite summary and mental composite summary didn't not improve with increase of education with P-values<0.05, except in the mental health which improved with the increase of educational level among hemodialysis patients (P-value >0.05) . A cross- sectional study conducted in Jordan, using SF-36, assessed the quality of life of hemodialysis patients. It was found that that there was no association between level of education and quality of life [97]. In contrast, the results of the study showed that the patients who had a higher education level had a better quality of life [98] .

In the present study, no relationship was found between the level of education and quality of education. The reason for the lack of relationship was that 41.4% of hemodialysis patients had primary education. This was a significant proportion.

Pertaining to quality of education dimensions and level of education of renal transplant patients, there were no statistically significant differences in the level of education. This concurs with the study which found no significant differences between level of education and quality of education[99] .

However, regarding the physical and the emotional role domains (P-values<0.05), the mean score for the physical role of patients who had post- secondary education was 87.5 which was higher than the mean

Score of those who had preparatory education. It was 66.3. And the mean score of the emotional role domain of patients who had secondary education was 90.63 which was higher than that of patients who had preparatory education (66.67).This may be due to the fact that the educated patients had more understanding of the importance of the treatment.

However, these results contradict findings of a study which found statistically significant differences, due to the level of education, among patients after renal transplantation [100] .

Concerning the place of residence, there were no statistically differences in the quality of education among hemodialysis patients. In contrast, one study reported that the overall quality of education of patients living in rural areas was better than that of those living in urban areas [101] .

The possible cause for the lack of relationship between the place of residence and the quality of life is that in the West Bank, all hospitals offer the same quality of care in dialysis units and most of the villages are close to the cities.

Furthermore, among renal transplant patients, there were also no statistically significant differences between the place of residence and all quality of life domains (all P-values>0.05).

In most studies, there was no clarification of the relationship between the place of residence and quality of life of renal transplant patients.

5.3 Comparison of Quality of Life of Renal Transplant and Hemodialysis Patients

5.3.1Overall Scores Related to Physical Health

Physical health is one important determinant of health. The mean and SD of the physical components summary for hemodialysis patients was 45.94 ± 13.22 while for the renal transplant patients it was 65.81 ± 11.13.

Tayyebi et al (2010) found that the mean and SD of the physical component in the hemodialysis group was 34.6 ± 17.4 while for the renal transplant group it was 53.6 ±20.5[(101)] .

Sathvik et al (2008) found that hemodialysis patients had a high level of impairment in quality of life of physical, psychological and social domains[(102)] .

Fujisawa et al (2000), examined the quality of life of 117 renal transplant patients and 114 hemodialysis patients using the SF-36 instrument. They found that there were significant differences in physical function, general health, social function and the bodily pain dimensions. The differences were better and in favor of renal transplant patients. The lowest score for hemodialysis patient's domain was in role-limitations caused by physical health problem[(103)] .

Mandaviya et al (2013) found that the patients undergoing hemodialysis had a low level of physical health [104] .

The possible causes that led to decrease of physical functioning among hemodialysis were biological factors, such as lab test including hemoglobin level and altering of serum creatinine. These patients were exposed to anemia [105], thus leading to decrease of activities; hence the

patients would complain of lack of energy. However, the results of lab test would improve after renal transplantation.

Bodily pain domain among hemodialysis patients was found to be much more than among renal transplant patients. Tayyebi et al (2010) found bodily pain more among hemodialysis patients than among renal transplant patients [106] .

Ghonemy et al (2016) believed that the main cause of pain among hemodialysis patients was a disturbance in mineral metabolism. When renal failure occurs, the kidneys cannot activate important minerals such as vitamin D and calcium, thus leading to a bone disease; hence the patients feel the pain [107] .

Regarding the quality of life in health in general domain, the current study found that the value of the mean in the renal transplant patients was higher than that in hemodialysis with a mean difference: -40.80.

One study reported that the well- being of renal transplanted patients was better than that of hemodialysis patients. This could be related to the fact

that the patients after renal transplantation improved their nutritional status and their metabolic abnormality disappeared (Marino et al 2017). The final result is electrolyte and fluid balance [108] .

Another possible reason for the quality of life improvement after renal transplantation could be the clinical advantages, including improvement in cardiac function.

Mimura et al (2007) found that the lowest domain score among the renal transplant patients was in the physical functioning; this result could be attributed to the weight gain from the immunosuppressant agents after renal transplantation [109] .

Esposito et al (2009) reported that kidney-transplanted patients may get different degrees of impairment in physical performance and quality of

Life [110].According to Aksoy (2016), life style could change such as dietary intake and this causes weight gain [111] .

Despite the positive outcomes of the renal transplantation, patients would still face challenges such as recurrent thinking about the new graft and the feeling of its loss. That makes patient be less active and avoid hard work or any physical activities.

5.3.2 Overall Scores According to Mental Health

The results in this study revealed that the mental health scores of renal transplantation were better than those of hemodialysis. This is similar to the

mean scores found in another study. The mean score before renal transplantation for emotional well -being was 23.4 but after renal transplantation it was 68.4 [112] .

Many studies have been conducted on hemodialysis patients. It was found that there was a decrease in mental health functioning (emotional well - being) because the patients were exposed to stress.

One study reported that patients undergoing hemodialysis experienced psychological stress because of loss/waste of time (around 3 – 4 hours per session [113] .

Because ESRD is a lifelong disorder, this could lead to hopelessness, altered social interaction and feeling of anxiety, and eventually this could lead to depression symptoms.

The deterioration in mental health function, that may result from the process of hemodialysis , are dietary restrictions, home monitoring of glucose, and blood pressure. In addition to that, a multitude of medical complications, such as electrolyte imbalance, hypoglycemia, hypertension and uremia, may also be a part of decrease in mental health function which leads to depression [114] .

Regarding the social health domain of quality of life, the renal transplants mean score (93.88) was significantly higher than that of hemodialysis mean (71). This result concurs with that of a study which evaluated all the quality of life scores of hemodialysis and renal transplants patients. The study was conducted on 50 male and female patients in each group. Statistically significant differences were observed in the social relationship domain. It was found to be higher in renal transplants patients than hemodialysis patients [(115)] .

Horigan et al (2013) found that social interaction for hemodialysis patients had decreased due to the fatigue that they experienced [(116)] .

Regarding the vitality domain, significant differences were found between renal transplant and hemodialysis patients. The mean score for vitality for hemodialysis patients was 39.32 while for renal transplant patients, it was 68.15.

One study reported that fatigue was a common phenomenon that led to decrease in the quality of life of hemodialysis patients and caused depression symptoms[(117)] .

5.4 Conclusion

After any advanced procedure or treatment of chronic diseases, the quality of assessment is very important. Therefore, significant research on quality of life and optional tools for measuring has been done. Renal replacement therapy, including hemodialysis and renal transplant , have some

complications that affect the patient's day to day life. The present study findings offer support concerning expected physical and mental health (quality of life) differences between the two groups of patients: hemodialysis and renal transplant patients.

The quality of life of renal transplants patients was better than that of hemodialysis patients in most domains. The domain affected negatively the most, after renal transplantation, was the physical function.

Chronic diseases, such as renal failure, influence the physical and mental health. This study has illustrated the impact of renal transplantation procedure on quality of life .The aim of this study was to assess quality of life of patients who had renal transplantation compared to patients who underwent hemodialysis in Palestine Medical Complex and An-Najah National University Teaching Hospital.

5.5 Summary of Main Findings

1. Renal transplant patients' quality of life improved more than the quality of life of hemodialysis patients, except in the physical functioning domain**.**

2. There were statistically significant differences in the quality of life of renal transplant and hemodialysis patients.

3. There were statistically differences in all quality of life domains among hemodialysis patients due to gender and age groups. However, there were no statistically differences in the quality of life of renal transplants patients due to gender and age groups.

4. There were no statistically significant differences in all the domains except in the mental health domain of quality of life of hemodialysis groups which could be attributed to level of education. In contrast, there were statistically significant differences in the physical role and emotional role domains among the renal transplants patients due to differences in the levels of education.

5. There were no statistically significant differences in all quality of life domains between renal transplant and hemodialysis patients which could be attributed to place of residence variable.

5.6 Limitations of the Study

1. The main limitation in this study is that its design was cross sectional. It was not possible to measure all factors that may affect quality of life. In this design, the cause-effect relationship would not also be known.

2. Another limitation is the potential for generalizability of the results that will decrease when we will use convenience sampling technique.

3. Additional limitations may occur during data collection. Face to face interviews might have introduced interviewer’s bias.

4. The questionnaire is a general measurement and possibly is not enough to capture all what is related to health of patients with chronic diseases. SF-36 does not reflect the participant's actual clinical condition; it just reflects his/her perception of his/her health.

5. Another possible limitation, related to the data collection from the renal transplant patients, is that patients who had renal transplantation more than two years ago are supposed to follow-up on with the nephrology clinic once every 4 to 6 months. Therefore ,the data collection period was limited. The researcher could interview all the patients.

5.7 Recommendations

1. This study has compared the quality of life of patients on hemodialysis and post renal transplant patients in Palestine Medical Complex and An-Najah National University Teaching Hospital. However, it didn't measure medical characteristics, medications, other treatments and clinical trial factors that could lead to influence their quality of life. Therefore, there is a need for further research to detect medical characteristics, medications, other treatments and clinical trial factors that could lead to influence quality of life of the two groups of patients.

2. There is a need to set up strategy to improve physical and psychological health of both renal transplant and hemodialysis patients and use multiple instruments routinely to measure quality of life of patients who have chronic diseases such ESRD.

3. There is a need for mass media development to produce programs for patients to make them aware of how to increase their quality of life.

4. It is important for the nephrologists and psychologist to work together to increase the attention toward improvement of mental and physical health of renal transplant and hemodialysis patients.

5. There is a need to develop and expand resources to serve ESRD and renal transplant patients, thus contributing to improvement of quality of their life.

6. There is need to plan and implement programs to improve the domains which were negatively affected by renal transplantation and hemodialysis.

7. A knowledge base improvement can be created to help the patients' families to increase their education on how to take care of their patients.

8. The Ministry of Health should help all ESRD patients to get referral for renal transplant abroad if no patient's relatives were available to donate their kidneys.

5.8 Summary

Hemodialysis is a heavy burden on patients receiving treatment. It alters the physical and psychological well-being of the patients and interferes with the quality of their life. Therefore, better alternatives for treatment should be explored. The renal transplantation procedure is the best medical for treatment for many patients with ESRD, even though there has been a medical advance in hemodialysis therapy and has contributed to the increase of survival of ESRD patients. In spite of all this, the quality of

life is negatively affected when compared to the renal transplantation procedure.

The number of hemodialysis patients is increasing in all dialysis units in the West Bank because ESRD causes many complications and leads to death.

Between 25 May – 25 August 2017, a quantitative, cross sectional study was done to assess the quality of life (mental and physical well-being) of patients who had renal transplantation as compared to patients who were on hemodialysis in Palestine Medical Complex and An-Najah National University Teaching Hospital. The sample size was 272 hemodialysis patients (158 males and 114 females) and 100 renal transplant patients (75 males and 25 females). SF-36 was used to assess quality of life and compare it between the two groups. The results showed that the overall SF-36 among renal transplant patients was much better than that of hemodialysis patients except in the physical function aspect. The mean difference between the two groups in physical function was 41.79. The

PCS was 45.94 ± 13.22 and MCS was 50 ± 24.39 for hemodialysis patients. For the renal transplant patients, the PCS was 65.81 ± 11.13 and

MCS was 80.31 ± 15.53. About 68% of the renal transplant patients reported better health after a year of treatment as opposed to only 7% of hemodialysis patients. Socio-demographic variables, including age, had statistically significant differences in all quality of life scores but had no statistically differences in bodily pain and mental health dimensions among

hemodialysis patients. Age had no statistically differences in all quality of life scores among renal transplant patients. Gender among hemodialysis patients was a factor that affected the overall quality of life (P-values<0.05). However, it did not affect physical role and mental health dimensions (P-values>0.05). In contrast, gender did not affect the renal transplant patients (all P-values>0.05).

The educational level variable also had an impact on hemodialysis patients (P-values<0.05) but no impact on the mental health dimensions (P-values>0.05). The educational level is considered an influencing factor in renal transplant just as in the physical and emotional role dimensions (P-values<0.05). The place of residence, however, had no effect on quality of life mean scores of the two groups of patients.

Finally, overall SF-36 among renal transplantation patients was better than hemodialysis patients, except in physical function aspect; the mean difference between two the groups was 41.79.

The quality of life of renal transplant patients improved when compared to hemodialysis patients, but the domain that was affected the most after renal transplantation procedure was the physical function domain. This study provided insight into how the renal transplantation procedure is very significant to the patients. In spite of that, we should be aware of the low physical function of the renal transplant patients.

It is recommended that additional research be conducted on the relationship between the quality of life in the renal replacement therapy, and the association between the quality of life and other variables.

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Annexes

Annex 1

SF-36 Scale

	Items	Summary measure scales
3a Vigorous activity 3b Moderate activity 3c Lift, carry grocery 3d Climb several flights 3e Climb one flight 3f Bend, kneel 3g Walk mile 3h Walk several blocks 3i Walk one block 3j Bathe, dress	Physical Functioning (PF)	Physical Component Score (PCS)
4a Cut down time 4b Accomplished less 4c Limited in kind 4d Had difficulty	Physical Role	
7 Pain magnitude 8 Pain –interference	Bodily Pain (BP)	
1 EVGFP rating 11a Sock easier 11b As healthy 11c Health got worse 11d Health excellent	General Health (GH)	Mental Component Score (MCS)
9a Pep/life 9e Energy 9g Worn out 9i Tired	Vitality (VT)	
6 Social Extent 10 Social time	Social Functioning (SF)	
5a Cut down time 5b Accomplished less 5c Not careful	Emotional Role ((ER)	
9b Nervous 9c Down in dumps 9d Peaceful 9f Blue/sad 9h Happy	Mental Health (MH)	

Annex 2

Eight dimensions of HRQOL assessed by SF-36

Physical functioning: performance physical activities, the scores on the physical functioning domain scale show the degree to which the persons' perceptions of their quality of life was influenced by their bodily condition.

Physical role limitation: refers to the degree to which individuals' performance of their work and roles in activities interfered in and was impeded by their physical state of health.

Emotional roles limitation: interference with work resulting from emotional problems.

Social functioning: limited social relationships, activities and interactions with others people such as family members, friends, colleagues at work and neighbours due to physical or emotional problems.

Bodily pain: The scores of bodily pain indicate the degree the individuals' experience of level of bodily pain impacted their performance of normal activities.

Mental health: feeling of peace, happiness, numerousness, or depression.

Vitality: dimension relates to the individual's experience to be active and be energetic, tired and full of energy.

General health :perspective on and expectation for health, is measured in terms of concepts such as excellent, very good, good, fair or poor, getting ill easier than other people, and just as healthy as anyone he/she knows.

Annex 3

Consent Form

Consent Form

موافقة الاشتراك بالبحث العلمي:

اسم الباحثة: راية حسين عبد الرحمن جرارعة – طالبة ماجستير– صحة عامة– جامعة النجاح الوطنية.

المشرف: الدكتور عدنان سرحان

جامعة النجاح الوطنية – ماجستير صحة عامة.

عنوان البحث: تقييم جودة الحياة لدى مرضى غسيل الكلية مقارنة بمرضى زراعة الكلية.

عزيزي المريض/ عزيزتي المريضة:

أنت مدعو/ة للمشاركة ببحث علمي كجزء من الحصول على درجة الماجستير، الرجاء أن تأخذ الوقت الكافي لقراءة المعلومات التالية بتأن قبل أن تقرر إذا كنت تريد المشاركة أم لا. بإمكانك طلب إيضاحات أو معلومات إضافية عن أي شيء مذكور في هذه الاستمارة أو عن هذه الدراسة ككل من الباحث. من حقك الرفض أو المتابعة في الاشتراك في هذه الدراسة في أي وقت تشاء.

لا داعي لذكر الاسم أو أي معلومات شخصية حساسة. ونود إعلامكم بان المعلومات المأخوذة منكم هي لغاية البحث العلمي فقط.

توقيع المشترك: الباحثة: راية جرارعة

جوال : 0595946968

Annex 4

بسم الله الرحمن الرحيم

أخي المريض/ أختي المريضة،،

تحية وبعد،،

تهدف هذه الدراسة إلى " **تقييم جودة الحياة لدى مرضى غسيل الكلية ومرضى زراعة الكلية في مستشفى النجاح الوطني الجامعي ومجمع فلسطين الطبي 2017**"، وقد تم اختياركم لتكونوا جزءاً من عينة الدراسة، لذا نأمل منكم الإجابة بموضوعية على أسئلة الاستبيان، بوضع إشارة على الإجابة التي ترونها مناسبة في المكان المخصص لها.

مؤكدين اقتصار استخدام المعلومات الواردة في هذه الاستبيان على أغراض البحث العلمي، ومراعاة السرية التامة والحرية الكاملة بعدم الإجابة عن أي سؤال، مع إمكانية الانسحاب من المشاركة في الدراسة دون أن يؤثر ذلك على العناية الطبية المقدمة.

(شاكرين لكم حسن تعاونكم)

2017

الباحثة / راية حسين عبد الرحمن جرارعة

جامعة النجاح الوطنية

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Annex 5

Arabic version questionnaire

من فضلك اجب على كل الاسئلة الموجودة في هذا الاستبيان ، في حال عدم وضوح أي سؤال ارجو اختيار اقرب اجابة لفهمك للسؤال (اختر اجابة واحدة وضع دائرة حول الاجابة المناسبة)

Socio-demographic factors

الجنس Gender	**ذكر Male**		**Female أنثى**	
العمر Age Group	**18-29** **30-60** **> 60**			
المؤهل العلمي Level of education	**ابتدائي No formal education**	**إعدادي Primary**	**ثانوي Secondary**	**أكثر More**
مكان الاقامة Place of residence	**مدينة City**		**قرية Village**	**مخيم Refugee camp**
بصورة عامة ، كيف ترى حالتك الصحية ؟ In general, would you say your health is	**ممتازة Excellent**	**جيدة جدا Very good**	**جيدة Good**	**لا باس بها Fair**	**سيئة Poor**

مقارنة بعام مضى ،كيف تقييم حالتك الصحية الان بصورة عامة ؟ Compared to one year ago, how would you rate your health in general now? :	**افضل بكثير مما كانت عليه قبل عام** Much better now than one year ago	**افضل نوعا ما من العام الماضي** Somewhat better now than one year ago	**تقريبا على ما هي علي** About the same	**أسوأ نوعا ما من العام الماضي** Somewhat worse now than one year ago	**أسوأ بكثير مما كانت عليه قبل عام** Much worse now than one year ago

تتعلق البنود التالية بانشطة يمكن ان تقوم بها في الوقت الحالي، الى أي مدى تقيدك حالتك الصحية

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

من ممارسة الانشطة الشاقة مثل الجري ،حمل الاشياء الثقيلة او مزاولة الانشطة الرياضية المجهدة جدا Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports?	**لا تقيدني اطلاقا No, Not Limited At All**	**نعم تقيدني قليلا Yes, Limited A Little**	**نعم تقيدني كثيرا Limited A Lot**
من ممارسة الانشطة متوسطة الجهد ،كتحريك الطاولة او التنظيف باستخدام المكنسة الكهربائية او تنظيف حديقة المنزل والعناية بها Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	**لا تقيدني اطلاقا No, Not Limited At All**	**نعم تقيدني قليلا Yes, Limited A Little**	**نعم تقيدني كثير Limited A Lot ا**

من حمل المشتريات من البقالة او السوق المركزي(السوبر ماركت) Lifting or carrying groceries?	**لا تقيدني اطلاقا** **No, Not Limited At All**	**نعم تقيدني قليلا** **Yes, Limited A Little**	**نعم تقيدني كثيرا** **Limited A Lot**
من صعود الدرج لعدة ادوار Climbing **several flights** of stairs?	**لا تقيدني اطلاقا** **No, Not Limited At All**	**نعم تقيدني قليلا** **Yes, Limited A Little**	**نعم تقيدني كثير** **Limited A Lot**
من صعود الدرج لدور واحد فقط Climbing **one** flight of stairs?	**لا تقيدني اطلاقا** **No, Not Limited At All**	**نعم تقيدني قليلا** **Yes, Limited A Little**	**نعم تقيدني كثيرا** **Limited A Lot**
من الانحناء او الركوع او السجود Bending, kneeing or stooping?	**لا تقيدني اطلاقا** **No, Not Limited At All**	**نعم تقيدني قليلا** **Yes, Limited A Little**	**نعم تقيدني كثيرا** **Limited A Lot**
من المشي لاكثر من كيلو ونصف Walking **more than a mile**?	**لا تقيدني اطلاقا** **No, Not Limited At All**	**نعم تقيدني قليلا** **Yes, Limited A Little**	**نعم تقيدني كثيرا** **Limited A Lot**
من المشي لمسافة نصف كيلو Walking **several** blocks?	**لا تقيدني اطلاقا** **No, Not Limited At All**	**نعم تقيدني قليلا** **Yes, Limited A Little**	**نعم تقيدني كثيرا** **Limited A Lot**
من المشي لاكثر من مئة متر Walking **one** block?	**لا تقيدني اطلاقا** **No, Not Limited At All**	**نعم تقيدني قليلا** **Yes, Limited A Little**	**نعم تقيدني كثيرا** **Limited A Lot**
من الاستحمام او ارتداء الملابس بنفسك Bathing or dressing yourself?	**لا تقيدني اطلا** **No, Not Limited At All**	**نعم تقيدني قليلا** **Yes, Limited A Little**	**نعم تقيدني كثيرا** **Limited A Lot**

الصحة الجسمية		
تتعلق البنود الآتية بالمشاكل التي تواجهك خلال تأديتك لعملك أو للأنشطة اليومية المعتادة نتيجة لحالتك الجسمية. **خلال الأسابيع الأربعة الماضية ،هل تسببت حالتك الصحية في : During the past 4 weeks, have you had any of the following problems with your work, school, or other regular activities *as a result of your physical health.***		
التقليل من الوقت الذي تقضيه في العمل او أي انشطة اخرى Cut down on the amount of time you spent on work/school or other activities?	**نعم** **Yes**	**لا** **No**
التقليل ما تود انجازه من العمل او أي انشطة اخرى Accomplished less than you would like?	**نعم** **Yes**	**لا** **No**
تقيدك في اداء نوع معين من الاعمال او أي انشطة اخرى Were limited in the kind of work or other activities?	**نعم** **Yes**	**لا** **No**
ان تجد صعوبة في اداء العمل او أي انشطة اخرى (على سبيل المثال، احتجت جهد اضافي لتأديتها) Had difficulty performing the work, school or other activities (for example it took extra effort)?	**نعم** **Yes**	**لا** **No**
الصحة النفسية		
تتعلق البنود الآتية بالمشاكل التي تواجهك خلال تأديتك لعملك أو للأنشطة اليومية المعتادة كنتيجة لحالتك النفسية(مثلا الشعور بالاكتئاب أو القلق النفسي) خلال الاسابيع الاربعة الماضية ،هل تسببت حالتك الصحية في : During the past 4 weeks, have you had any of the following problems with your		

work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?		
لا **No**	**نعم** **Yes**	**التقليل من الوقت الذي تقضه في العمل او أي انشطة اخرى** Cut down on the amount of time you spent on work/school or other activities?
لا **No**	**نعم** **Yes**	**التقليل مما تود انجازه من العمل او أي انشطة اخرى** Accomplished less than you would like?
لا **No**	**نعم** **Yes**	**عدم انجاز العمل او أي انشطة اخرى بالحرص المعتاد** Didn’t do work or other activities as carefully as usual?

الصحة الجسمية أو النفسية					
خلال الأسابيع الأربعة الماضية، إلى أي مدى تعارضت صحتك الجسمية أو النفسية مع تأديتك لنشاطاتك الاجتماعية المعتادة مع عائلتك أو أصدقائك أو جيرانك أو أي من المناسبات الاجتماعية الأخرى ؟ During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?	**لم يكن هناك أي تعارض** **Not at all**	**كان هناك تعارض قليل** **Slightly**	**كان هناك تعارض متوسط** **Moderately**	**كان هناك تعارض كبير** **Quite a bit**	**كان هناك تعارض كبير جدا** **Extremely**

ما شدة الألم الجسمي الذي عانيت منه خلال الأسابيع الأربعة الماضية: How much bodily pain have you had during the past 4 weeks?	**لم يكن هناك أي الم** **None**	**كان هناك الم خفيف جدا** **Very mild**	**كان هناك الم خفيف** **Mild**	**كان هناك الم متوسط.** **Moderate**	**كان هناك الم شديد** **Severe**	**كان هناك الم شديد جدا** **Very sever**
خلال الأسابيع الأربعة الماضية، إلى أي مدى أدى الألم الجسمي إلى التعارض مع تأديتك لأعمالك المعتادة سواء داخل المنزل أو خارجه: During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	**لم يكن هناك أي تعارض** **Not at all**	**كان هناك تعارض قليل** **Slightly**		**كان هناك تعارض متوسط** **Moderately**	**كان هناك تعارض كبير** **Quite a bit**	**كان هناك تعارض كبير جدا** **Extremely**

الأسئلة التالية تتعلق بكيفية شعورك وطبيعة سير الأمور معك خلال الأسابيع الأربعة الماضية، الرجاء إعطاء إجابة واحدة لكل سؤال بحيث تكون هذه الإجابة هي الأقرب إلى الحالة التي تشعر بها خلال الأسابيع الأربعة الماضية، كم من الوقت:

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 week

شعرت بأنك مليء بالحيوية والنشاط Did you feel full of pep?	**في كل الأوقات** All of the time	**في معظم الأوقات** Most of the time	**في كثير من الأوقات** A good bit of the time	**في بعض الأوقات** Some of the time	**في قليل من الأوقات** A little of the time	**لم اشعر في أي وقت من الأوقات** None of the time
كنت شخص عصبيا جدا Have you been a very nervous person?	**في كل الأوقات** All of the time	**في معظم الأوقات** Most of the time	**في كثير من الأوقات** A good bit of the time	**في بعض الأوقات** Some of the time	**في قليل من الأوقات** A little of the time	**لم اشعر في أي وقت من الأوقات** None of the time
شعرت بأنك في حالة اكتئاب إلى	**في كل الأوقات**	**في معظم الأوقات**	**في كثير من الأوقات**	**في بعض الأوقات**	**في قليل من الأوقات**	**لم اشعر في أي**

وقت من الأوقات None of the time	A little of the time	Some of the time	A good bit of the time	Most of the time	All of the time	**درجة لم يمكن إدخال السرور لديك** Have you felt so down in the dumps that nothing could cheer you up?
لم اشعر في أي وقت من الأوقات None of the time	**في قليل من الأوقات** A little of the time	**في بعض الأوقات** Some of the time	**في كثير من الأوقات** A good bit of the time	**في معظم الأوقات** Most of the time	**في كل الأوقات** All of the time	**شعرت بالهدوء والطمأنينة** Have you felt calm and peaceful?
لم اشعر في أي وقت من الأوقات None of the time	**في قليل من الأوقات** A little of the time	**في بعض الأوقات** Some of the time	**في كثير من الأوقات** A good bit of the time	**في معظم الأوقات** Most of the time	**في كل الأوقات** All of the time	**كانت لديك طاقة كبير** Did you have a lot of energy?
لم اشعر في أي وقت من الأوقات None of the time	**في قليل من الأوقات** A little of the time	**في بعض الأوقات** Some of the time	**في كثير من الأوقات** A good bit of the time	**في معظم الأوقات** Most of the time	**في كل الأوقات** All of the time	**شعرت بالإحباط واليأس** Have you felt downhearted and blue?
لم اشعر في أي وقت من الأوقات None of the time	**في قليل من الأوقات** A little of the time	**في بعض الأوقات** Some of the time	**في كثير من الأوقات** A good bit of the time	**في معظم الأوقات** Most of the time	**في كل الأوقات** All of the time	**شعرت بأنك منهك(استنفذت قواك)** Do you feel worn out?
لم اشعر في أي وقت من الأوقات None of the time	**في قليل من الأوقات** A little of the time	**في بعض الأوقات** Some of the time	**في كثير من الأوقات** A good bit of the time	**في معظم الأوقات** Most of the time	**في كل الأوقات** All of the time	**شعرت بأنك شخص سعيد** Have you been a happy person?
لم اشعر في أي وقت من الأوقات None of the time	**في قليل من الأوقات** A little of the time	**في بعض الأوقات** Some of the time	**في كثير من الأوقات** A good bit of the time	**في معظم الأوقات** Most of the time	**في كل الأوقات** All of the time	**شعرت بأنك تعبان** Did you feel tired?

خلال الأسابيع الأربعة الماضية،ما مقدرا الوقت الذي تعارضت فيه صحتك الجسمية أو مشاكل النفسية مع نشاطاتك الاجتماعية (مثل زيارة الأقارب والأصدقاء وغير ذلك؟) During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?	كان التعارض في كل الأوقات All of the time	كان التعارض في معظم الاوقات Most of the time.	كان التعارض في بعض الاوقات Some of the time	كان التعارض في قليل من الاوقات A little of the time.	لم يكن هناك تعارض فياي وقت من الاوقات None of the time

ما مدى صحة أو خطا كل من العبارات التالية بالنسبة لحالتك الصحية:

How TRUE or FALSE is each of the following statements for you?

يبدو أنني أصاب بالمرض أكثر من الآخرين I seem to get sick a little easier than other people?	صحيحة بلا شك Definitely true	صحيحة غالبا Mostly true	لا اعلم Don't know	خطا غالبا Mostly false	خطا بلا شك Definitely false
حالتي الصحية مساوية لأي شخص اعرفه I am as healthy as anybody I know?	صحيحة بلا شك Definitely true	صحيحة غالبا Mostly true	لا اعلم Don't know	خطا غالبا Mostly false	خطا بلا شك Definitely false
أتوقع أن تسوء حالتي الصحية I expect my health to get worse?	صحيحة بلا شك Definitely true	صحيحة غالبا Mostly true	لا اعلم Don't know	خطا غالبا Mostly false	خطا بلا شك Definitely false
حالتي الصحية ممتازة My health is excellent?	صحيحة بلا شك Definitely true	صحيحة غالبا Mostly true	لا اعلم Don't know	خطا غالبا Mostly false	خطا بلا شك Definitely false

.....شكرا لتعاونكم.....

Annex 6

Key of Questionnaire

General Health

1. In general, would you say your health is

Excellent	Very good	Good	Fair	Poor
100 %	**75%**	**50%**	**25%**	**0**

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

Much better now than one year ago	Somewhat better now than one year ago	About the same	Somewhat worse now than one year ago	Much worse now than one year ago.
100%	**75%**	**50%**	**25%**	**0**

How TRUE or FALSE is each of the following statements for you?

	1. Definitely true	2. Mostly true	3. Don't know	4. Mostly false	5. Definitely false
I seem to get sick a little easier than other people	**0**	**25%**	**50%**	**75%**	**100%**
I am as healthy as anybody I know	**100%**	**75%**	**50%**	**25%**	**0**
I expect my health to get worse	**0**	**25%**	**50%**	**75%**	**100%**
My health is excellent	**100%**	**75%**	**50%**	**25%**	**0**

Physical Functioning

Activities	1. Yes, Limited a Lot	2. Yes, Limited a Little	3. No, Not Limited at all
Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports?	**100%**	**50%**	**0**
Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	**100%**	**50%**	**0**
Lifting or carrying groceries?	**100%**	**50%**	**0**
Climbing **several flights** of stairs?	**100%**	**50%**	**0**
Climbing **one** flight of stairs?	**100%**	**50%**	**0**
Bending, kneeling or stooping?	**100%**	**50%**	**0**
Walking **more than a mile**?	**100%**	**50%**	**0**
Walking **several** blocks?	**100%**	**50%**	**0**
Walking **one** block?	**100%**	**50%**	**0**
Bathing or dressing yourself?	**100%**	**50%**	**0**

Physical Role

During the **past 4 weeks**, have you had any of the following problems with your work, school, or other regular activities as a result of your physical health .

	1.□ yes	2.□ No
Cut down on the amount of time you spent on work/school or other activities?	**0**	**100%**
Accomplished less than you would like?	**0**	**100%**
Were limited in the kind of work or other activities?	**0**	**100%**
Had difficulty performing work, school or other activities (for example it took extra effort)?	**0**	**100%**

Emotional Role

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

	1.□ yes	2.□ No
Cut down on the amount of time you spent on work/school or other activities?	**0**	**100%**
Accomplished less than you would like?	**0**	**100%**
Didn’t do work or other activities as carefully as usual?	**0**	**100%**

Social Health

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

Not at all	Slightly	Moderately	Quite a bit	Extremely
100%	**75%**	**50%**	**25%**	**0**

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

All of the time	Most of the time.	Some of the time	A little of the time.	None of the time.
0	**25%**	**50%**	**75%**	**100%**

Bodily Pain

How much bodily pain have you had during the past 4 weeks?

None	**Very mild**	**Mild**	**Moderate**	**Severe**	**Very severe**
0	**80%**	**60%**	**40%**	**20%**	**0**

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

Not at all	Slightly	Moderately	Quite a bit	Extremely
100%	**75%**	**50%**	**25%**	**0**

Vitality

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 week.

	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
Did you feel full of pep?	**100%**	**80%**	**60%**	**40%**	**20%**	**0**
Did you have a lot of energy?	**100%**	**80%**	**60%**	**40%**	**20%**	**0**
Do you feel worn out?	**0**	**20%**	**40%**	**60%**	**80%**	**100%**
Do you feel tired?	**0**	**20%**	**40%**	**60%**	**80%**	**100%**

Mental Health

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 week.

	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
Have you been a very nervous person?	**0**	**20%**	**40%**	**60%**	**80%**	**100%**
Have you felt so down in the dumps that nothing could cheer you up?	**0**	**20%**	**40%**	**60%**	**80%**	**100%**
Have you felt calm and peaceful?	**100%**	**80%**	**60%**	**40%**	**20%**	**0**
Have you felt downhearted and blue?	**0**	**20%**	**40%**	**60%**	**80%**	**100%**
Have you been a happy person?	**100%**	**80%**	**60%**	**40%**	**20%**	**0**

Annex 7

I.R.B Permission

An-Najah
National University
Faculty of medicine
&Health Sciences
Department of Graduate
Studies

جامعة النجاح
الوطنية
كلية الطب وعلوم الصحة
دائرة الدراسات العليا

IRB Approval Letter

Study Title :

"Quality of life for patients undergoing hemodialysis compared with patients after renal transplantation :A cross sectional study"

Submitted by:
Raya Jarareh, Dr.Adnan Sarhan

Date Reviewed:
27/Feb/2017

Date Approved:
12Machr/2017

Your Study titled ""Quality of life for patients undergoing hemodialysis compared with patients after renal transplantation :A cross sectional study" with achieved number 23Feb,2017 was reviewed by An-Najah National University IRB committee and was approved on 12. March..2017.

Hasan Fitian, MD

IRB Committee Chairman
An-Najah National University

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جامعة النجاح الوطنية

كلية الدراسات العليا

مقارنة جودة الحياة بين مرضى غسيل الكلى وزراعة الكلى:

دراسة مقطع

إعداد

راية حسين عبد الرحمن جرارعة

إشراف

د. عدنان سرحان

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في برنامج الصحة العامة، بكلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس- فلسطين.

2018

مقارنة جودة الحياة بين مرضى غسيل الكلى وزراعة الكلى: دراسة مقطع

اعداد

راية حسين عبد الرحمن جرارعة

إشراف

د. عدنان سرحان

الملخص

خلفية الدراسة: تعتبر زراعة الكلى من افضل الطرق العلاجية لمرضى الفشل الكلوي المزمن، حيث ان نجاحها له اثارايجابية على الصحة النفسية والجسدية للمريض مقارنة بمرضى غسيل الكلى الذين يتعرضون لضغوط جسدية ونفسية في حياتهم ولا توجد ابحاث تقييم لجودة ونوعية الحياة لمرضى زراعة الكلى مقارنة بمرضى الغسيل الكلوي التقليدي.

الهدف: كان الهدف من هذه الدراسة تحديد جودة الحياة لمرضى زراعة الكلى مقارنة بمرضى غسيل الكلى في مجمع فلسطين الطبي ومستشفى النجاح الوطني الجامعي.

المنهجية: اجريت دراسة نوعيه، مقطعية وذلك باستخدام استبيانة نوعية الحياة وقد تضمنت المعلومات الديموغرافية، والمقابلات المباشرة مع 100 مريض قد قاموا بزراعة كلى و 272 مريض كانوا يقومون بعمل غسيل كلى بشكل روتيني في مجمع فلسطين الطبي ومستشفى النجاح الوطني الجامعي.

نتائج الدراسة: اظهرت البيانات ان مجمل الصحة النفسية والجسدية وفقا لمقياس نوعية الحياة فقد كانت لدى مرض لدى مرضى زراعة الكلى كانت افضل من مرضى غسيل الكلى في جميع المجالات باستثناء مجال الوظائف الجسدية حيث كان متوسط الفرق في هذا المجال 41.79 وكان متوسط الاختلاف في مجمل الصحة الجسدية 13.22 ± 45.9 اما متوسط الاختلاف في ومجمل الصحة النفسية 50±24.39 لمرضى غسيل الكلى وكان متوسط الاختلاف في مجمل الصحة الجسدية 65.81±11.13 ومجمل الصحة النفسية 80.3 ±15.53 لمرضى زراعة الكلى،

المعلومات الديمغرافية مثل الجنس والعمر ومستوى التعليم تلعب دور في حدوث الاختلاف في جودة الحياة بينما مكان الاقامة ليس لها دور في حدوث الفرق.

الاستنتاج والتوصية: جودة الحياة لدى مرضى زراعة الكلى كانت افضل عندما قورنت بمرضى غسيل الكلى ولكن المجال الوحيد من بين ثماني مجالات تقيس جودة الحياة تاثر بشكل شلبي بعد عملية زراعة الكلى لدى مرضى زراعة الكلى هومجال الوظائف الجسدية ويجب رفع الوعي لدى مرضى زراعة الكلى في هذا، واظهرت النتائج اهمية زراعة الكلى على رفع جودة الحياة لكن لا زلنا بحاجة الى دراسات اخرى تتعلق بتقييم جودة الحياة لدى مرضى غسيل الكلى وزراعة الكى وعلاقتها بالعوامل الاخرى.