

# **Quality of Life for Adult Client with Chronic Kidney Disease**

*Thesis*

Submitted in Partial Fulfillment of the Master Degree in  
Community Health Nursing

*By*

**Karem Mahmoud Mohammed**

B.Sc Nursing, 2010

(Port said University)

**Faculty of Nursing  
Ain Shams University  
2019**

# **Quality of Life for Adult Client with Chronic Kidney Disease**

*Thesis*

Submitted in Partial Fulfillment of the Master Degree in  
Community Health Nursing

*Supervision*

**Prof. Dr. Hemat Abd Elmoneem Elsayied**

Professor of Community Health Nursing  
Faculty of Nursing, Ain Shams University

**Dr. Asmaa Talaat Mohammed**

Lecturer of Community Health Nursing  
Faculty of Nursing, Ain Shams University

Faculty of Nursing  
Ain Shams University  
**2019**



Praise to **Allah**, the Merciful, the Compassionate for all the countless gifts I have been offered. One of these gifts, accomplishing this research work,

It is a pleasure for me to express my profound gratitude and appreciation to **Professor Dr. Hemat AbdElmoneem El Sayied, Professor of Community Health Nursing, Faculty of Nursing – Ain Shams University**, for her kindness, genuine guidance and very keen supervision in revising every part of this thesis.

With considerable appreciation, I express my deepest gratitude to **Dr. Asmaa Talaat Mohammed, Lecturer of Community Health Nursing, Faculty of Nursing – Ain Shams University**, for her kind help, stimulating enthusiasm and unlimited help which were encouraging towards the accomplishment of this work,

I would like to express my gratitude to all who helped me in fulfilling my responsibilities toward this work especially, the nursing members, patients and physicians in outpatient clinics at Ain Shams University Hospital in Cairo governorate for their cooperation and positive responses.

Last, but not least, I am grateful to all those who directly or indirectly helped me to accomplish this research work,

**Karem Mahmoud Mohammed**

## List of Contents

| <i>Subject</i>                                                                                   | <i>Page No.</i> |
|--------------------------------------------------------------------------------------------------|-----------------|
| <b>List of Abbreviations.....</b>                                                                | <b>I</b>        |
| <b>List of Tables.....</b>                                                                       | <b>II</b>       |
| <b>List of Figures .....</b>                                                                     | <b>IV</b>       |
| <b>Abstract .....</b>                                                                            | <b>V</b>        |
| <b>Introduction .....</b>                                                                        | <b>1</b>        |
| <b>Aim of the Study .....</b>                                                                    | <b>5</b>        |
| <b>Review of Literature</b>                                                                      |                 |
| <b>Part I: Chronic Kidney Disease .....</b>                                                      | <b>6</b>        |
| <b>Part II: Quality of Life for adult client with chronic<br/>kidney disease .....</b>           | <b>37</b>       |
| <b>Part III: Community Health Nursing Role in<br/>Management of Chronic Kidney Disease .....</b> | <b>46</b>       |
| <b>Subjects and Methods .....</b>                                                                | <b>64</b>       |
| <b>Results.....</b>                                                                              | <b>71</b>       |
| <b>Discussion .....</b>                                                                          | <b>94</b>       |
| <b>Conclusion.....</b>                                                                           | <b>105</b>      |
| <b>Recommendations .....</b>                                                                     | <b>106</b>      |
| <b>Summary .....</b>                                                                             | <b>108</b>      |
| <b>References .....</b>                                                                          | <b>114</b>      |
| <b>Appendices .....</b>                                                                          | <b>I</b>        |
| <b>Arabic Summary .....</b>                                                                      | <b>—</b>        |

---

## List of Abbreviations

| <i>Abbr.</i> | <i>Full-term</i>                                  |
|--------------|---------------------------------------------------|
| <b>ACE</b>   | : Angiotensin-Converting Enzyme                   |
| <b>ADL</b>   | : Activities of Daily Living                      |
| <b>AKI</b>   | : Acute Kidney Injury                             |
| <b>ARBs</b>  | : Angiotensin Receptor Blockers                   |
| <b>AV</b>    | : Arteriovenous                                   |
| <b>AVF</b>   | : Arterio-Venous Fistula                          |
| <b>AVGs</b>  | : Arteriovenous Grafts                            |
| <b>BP</b>    | : Blood Pressure                                  |
| <b>BUN</b>   | : Blood Urea Nitrogen.                            |
| <b>Cd</b>    | : Cadmium                                         |
| <b>CKD</b>   | : Chronic Kidney Disease.                         |
| <b>CT</b>    | : Computed Tomography.                            |
| <b>CVD</b>   | : Cardiovascular Disease                          |
| <b>ECF</b>   | : Extracellular Fluid                             |
| <b>EPO</b>   | : Erythropoietin                                  |
| <b>ESKD</b>  | : End Stage Kidney Disease.                       |
| <b>GFR</b>   | : Glomerular Filtration Rate.                     |
| <b>GI</b>    | : Gastrointestinal                                |
| <b>HD</b>    | : Haemodialysis.                                  |
| <b>IDH</b>   | : Intradialytic Hypotension                       |
| <b>IDWG</b>  | : Interdialytic Weight Gain                       |
| <b>IHME</b>  | : Institute for Health Metrics and Evaluation     |
| <b>KDOQI</b> | : The Kidney Disease Outcomes Quality Initiative. |
| <b>LDL</b>   | : Low Density Lipoprotein                         |
| <b>MDRD</b>  | : Modification of Diet in Renal Disease           |
| <b>PD</b>    | : Peritoneal Dialysis                             |
| <b>PRES</b>  | : Posterior Reversible Encephalopathy Syndrome    |
| <b>PTH</b>   | : Parathyroid Hormone                             |
| <b>QOL</b>   | : Quality of Life.                                |
| <b>RRT</b>   | : Renal Replacement Therapy                       |
| <b>SBP</b>   | : Systolic Blood Pressure                         |
| <b>UF</b>    | : Ultrafiltration                                 |
| <b>VAE</b>   | : Venous Air Embolism                             |

## **List of Tables**

| <b>Table No.</b>  | <b>Title</b>                                                                                                             | <b>Page No.</b> |
|-------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>Table (1):</b> | Common blood tests used to monitor kidney function and complications of CKD .....                                        | 27              |
| <b>Table (2):</b> | Reliability of knowledge, compliance and QoL and subdomains of adult client with chronic kidney disease.....             | 69              |
| <b>Table (3):</b> | Distribution of adult clients' with chronic kidney disease as regards to socio demographic data (n= 122).....            | 72              |
| <b>Table (4):</b> | Distribution of adult clients' with chronic kidney disease related to their medical history (n= 122) .....               | 74              |
| <b>Table (5):</b> | Distribution of adult clients' with chronic kidney disease according to their knowledge about the disease (n= 122). .... | 75              |
| <b>Table (6):</b> | Distribution of the adult client's as regards to their knowledge about hemodialysis (n= 122).....                        | 76              |
| <b>Table (7):</b> | Distribution of the adult clients' according to their compliance with nutritional pattern (n= 122) .....                 | 78              |
| <b>Table (8):</b> | Distribution of the adult clients' compliance regarding follow-up (n= 122). ....                                         | 79              |
| <b>Table (9):</b> | Distribution of the adult clients' as regards their compliance with therapeutic regimen (n= 122). ....                   | 80              |

|                    |                                                                                                                                                                                 |    |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <b>Table (10):</b> | Distribution of the adult clients' according to their compliance with precautions to safe fistula (n= 26) .....                                                                 | 81 |
| <b>Table (11):</b> | Distribution of the adult clients' as regards to their compliance with care of their disease and hemodialysis (n= 122).....                                                     | 82 |
| <b>Table (12):</b> | Distribution of adult the clients' according to physical aspect of their quality of life (n= 122) .....                                                                         | 84 |
| <b>Table (13):</b> | Distribution of the adult clients' according to psychological (mental aspect) of their quality of life (n= 122). ....                                                           | 86 |
| <b>Table (14):</b> | Distribution of the adult clients' according to emotional and spiritual aspect of their quality of life (n= 122) .....                                                          | 87 |
| <b>Table (15):</b> | Distribution of clients' according to social interaction of their quality of life (n= 122) .....                                                                                | 88 |
| <b>Table (16):</b> | Relations between quality of life and socio-demographic of the studied sample (n= 122).....                                                                                     | 90 |
| <b>Table (17):</b> | Relation between the quality of life of the adult client and their total knowledge level and their total compliance toward care of kidney disease and hemodialysis(n= 122)..... | 92 |
| <b>Table (18):</b> | Relation between the total adult clients knowledge level and their compliance toward care of kidney disease and hemodialysis (n = 122) .....                                    | 93 |

## List of Figures

| <i>Figure No.</i>   | <i>Title</i>                                                                                                                | <i>Page No.</i> |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>Figure (1):</b>  | Anatomy of the urinary system .....                                                                                         | 6               |
| <b>Figure (2):</b>  | Longitudinal section of the kidney.....                                                                                     | 7               |
| <b>Figure (3):</b>  | A single nephron unit and surrounding<br>blood vessels.....                                                                 | 8               |
| <b>Figure (4):</b>  | Urinary Bladder in male .....                                                                                               | 10              |
| <b>Figure (5):</b>  | Clinical manifestations of chronic kidney<br>disease.....                                                                   | 16              |
| <b>Figure (6):</b>  | Causes of end stage kidney disease.....                                                                                     | 19              |
| <b>Figure (7):</b>  | Arteriovenous fistula .....                                                                                                 | 32              |
| <b>Figure (8):</b>  | Arteriovenous graft.....                                                                                                    | 33              |
| <b>Figure (9):</b>  | Haemodialysis .....                                                                                                         | 54              |
| <b>Figure (10):</b> | Distribution of the total adult client<br>according to their knowledge level about<br>kidney disease and hemodialysis ..... | 77              |
| <b>Figure (11):</b> | Distribution of the adult clients' as regards<br>their compliance with follow-up.....                                       | 79              |
| <b>Figure (12):</b> | Distribution of the adult clients' according<br>to their compliance a about kidney disease<br>and hemodialysis.....         | 82              |
| <b>Figure (13):</b> | Distribution of the adult clients regards<br>their total compliance level toward kidney<br>disease and hemodialysis .....   | 83              |
| <b>Figure (14):</b> | Distribution of the adult clients according<br>to their total quality of life (n= 122).....                                 | 89              |

## Abstract

**Background:** Chronic kidney disease is a reduced glomerular filtration rate and it is an important cause of death and loss of disability-adjusted life-years worldwide. **Aim:** was to assess the quality of life for adult clients' with chronic kidney disease. **Design:** A descriptive study design was utilized in the current study. **Sample:** A Purposive sample with 122(10%) adult Client with chronic kidney disease according to the following criteria: adult male and female, age ranged from 21-50 years undergoing hemodialysis. **Setting:** the study was conducted in renal insufficiency outpatient clinics at Ain Shams University Hospitals, Cairo governorate. **Tools:** **first:** An interviewing questionnaire sheet (knowledge & compliance), **second:** Adult client medical record, and **third:** Kidney disease Quality of Life. **Results:** The mean age of the study sample were  $23.4 \pm 15.2$  years. More than one third (36.1% & 35.0% respectively) of the client with chronic kidney disease had satisfactory knowledge and compliance level about their disease, and more than half (52.5%) of them had poor Quality of Life level. There was no statistical significance relation between client quality of life and their knowledge but there were statistical significance differences between client quality of life and their compliance. **Conclusion:** More than one third of the client with chronic kidney disease had satisfactory knowledge and compliance level about their disease, more than half of them had poor QoL level, and more than one third of them had average QoL. There were a relation between client knowledge and their compliance and between their quality of life and their compliance. **Recommendation:** Patients should to be provided with sufficient relevant written and visual knowledge to facilitate educating them about kidney disease, importance of hemodialysis, care of fistula, therapeutic regimen, and follow-up.

**Keywords:** Adult client, Chronic Kidney Disease hemodialysis, Quality of Life.

## Introduction

Adequate kidney function is essential to the maintenance of a healthy body. If a person has complete kidney failure and treatment is not provided, death is inevitable (**Lewis et al., 2014**). Chronic kidney disease (CKD) involves progressive, irreversible loss of kidney function. The Kidney Disease Outcomes Quality Initiative (KDOQI) of the National Kidney Foundation defines chronic kidney disease as the presence of kidney damage or a decreased glomerular filtration rate (GFR) less than 60 mL/min/1.73 m<sup>2</sup> for longer than 3 months. The last stage of kidney failure, End-Stage Kidney Disease (ESKD), occurs when the GFR is less than 15 mL/min (**Liyanage et al., 2015**).

Projected worldwide population changes suggest that the potential number of cases of end-stage kidney disease will increase disproportionately in developing countries, such as China and India, where the numbers of elderly people are expanding (**Lewis et al., 2014**). According to the gender, males with pre-existing diabetes, hypertension and CKD of Asia, Europe, Australia, Africa-Americans and developing countries such as Africa, China and India are at higher risk for End-Stage Renal Disease (ESRD) (**Liyanage et al., 2015**).

Epidemiology of chronic kidney disease; according to the 2010 Global Burden of Disease study chronic kidney disease was ranked 27<sup>th</sup> in the list of causes of total number of global deaths in 1990 (age-standardized annual death rate of 15.7 per 100 000), but rose to 18<sup>th</sup> in 2010 (annual death rate 16.3 per 100 000) (**Lozano et al., 2013**). While in Egypt according to Institute for Health Metrics and Evaluation (IHME) chronic kidney disease was ranked 7<sup>th</sup> cause of death in 2016 (**IHME, 2016**).

The causes of CKD are diabetes (about 50%) and hypertension (about 25%). Less common etiologies include glomerulonephritis, cystic diseases, and urologic diseases. The increasing prevalence of CKD has been partially attributed to the increase in risk factors, including an aging population, rise in rates of obesity, and increased incidence of diabetes and hypertension the prognosis and course of CKD are highly variable depending on the etiology, patient's condition and age, and adequacy of health care follow-up. ESKD was recognized as a disability (**Jha et al., 2013**).

Quality of Life (QOL) is defined as the individual perception of his/her position in life in the context of the culture and value systems in which he/she lives, and in relation to goals, expectation, standards and concerns. It is a multidimensional concept comprised of several domains, the person, physical

health, psychological state, level of independence, social relationships, personal beliefs and her/ his relationships **(Liyanage et al., 2015)**.

Although there is no universal description of quality of life, it is sometimes described as a wellness resulting from a combination of physical, functional, emotional and social factors. Chronic conditions affect the QOL of adult people and contribute to disability and reduce their ability to live independently **(Wallander and Koot, 2016)**.

Community health nurse role is infection prevention, patient assessment and monitoring, documentation, fluid management, patient education, and providing comfort and encouragement. nephrology nursing has remained focused on humanizing the process for people with complex care needs, preserving the patient's dignity, teaching, supporting, and involving the patient and family in their care, it is apparent that nephrology nurses have always been responsible for a significant amount (or majority) of the care of patients with kidney disease **(Roomizadeh et al., 2014)**.

### **Significance of the study:**

Chronic renal failure is gaining more attention not only in Egypt but also worldwide as well. So that the problem should attain almost importance, and be on the top of the

agenda in any form of medical, environmental and social reform (**Mohsen, et al., 2013**).

According to the study done in El Minia governorate, Egypt, reported that prevalence of ESRD was 367 per million populations (**El-Minshawy, 2011**) and study done in Assuit governorate by **El-Arbagy, et al., (2016)** mentioned that prevalence of ESRD was 366 per million populations. Also, according to the latest WHO data published in 2017 kidney disease deaths in Egypt reached 20.433 or 3.98% of total death. The age adjusted death rate is 32.88 / 100.000 of population ranks Egypt 20 in the world and 7<sup>th</sup> cause of death in its (**Institute for Health Metrics and Evaluation (IHME), World Health Rankings, 2018**).

According to recent study done by **Hamed, et al., (2017)** to assess QoL of patients on regular hemodialysis and determine some factors that affect the QoL concluded that quality of life of patients on hemodialysis at Sohag University Hospital was impaired especially in the physical and mental component and much attention should be paid to improve physical and psychological aspects of the patients.

## **Aim of the Study**

**The aim of the study is to assess the quality of life for adult client with chronic kidney disease through:**

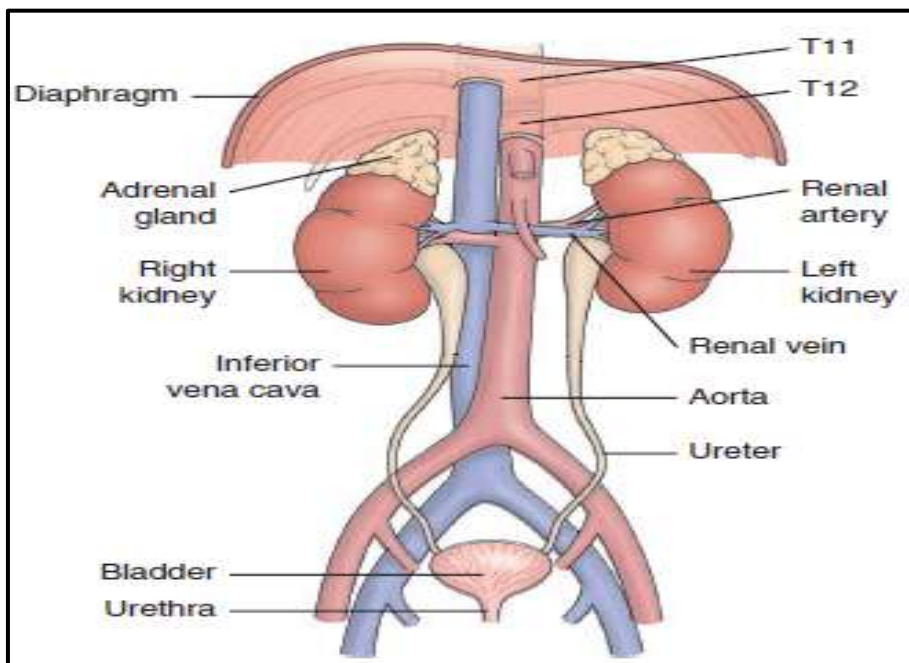
- Assessing client`s knowledge and compliance related to chronic kidney disease.
- Determining quality of life of clients with chronic kidney disease.
- Detecting factors affecting quality of life for clients with chronic kidney disease.

### **Research questions:**

1. What is client`s knowledge related to chronic kidney disease?
2. What is the quality of the life exhibited by clients with chronic kidney disease?
3. What are the factors that might affect the quality of life of clients with chronic kidney disease?
4. Is there relationship between quality of life among clients with chronic kidney disease and socio-demographic characteristics?
5. Is there relationship between quality of life and client`s knowledge related to with chronic kidney disease.

## Part I: Chronic Kidney Disease

The upper urinary system consists of two kidneys and two ureters. The lower urinary system consists of a urinary bladder and a urethra. Urine is formed in the kidneys, drains through the ureters to be stored in the bladder, and then passes from the body through the urethra (**Hinkle and Cheever, 2014**).



**Figure (1):** Anatomy of the urinary system

**Hinkle J. L. and Cheever K. H, (2014):** Brunner and Suddarth's Text Book of Medical Surgical Nursing. 13th (ed), Wolters Kluwer Lippincott, Williams and Wilkins, chapter 43. PP: 1259 – 1279

The paired kidneys are bean-shaped organs located retroperitoneally (behind the peritoneum) on either side of the