

# Knowledge Regarding Self Care Measures and Quality of Life among Patients with Chronic Renal Failure (CRF) undergoing Hemodialysis

Milka Kalekar, Manisha Samudre

**Abstract:** Introduction: Chronic Kidney Disease (CKD) affects 500 million people worldwide. In the US there are 1400 per million of estimated prevalence or established renal failure while in the UK it is recorded more than 600 per million in 2007. This study aims to assess the knowledge on self care measured by structured knowledge questionnaire, and quality of life measured by modified WHO QOL-BREF Scale and try to find out the co-relation between knowledge scores of self care measures and quality of life among chronic renal failure patients undergoing haemodialysis. Methods: A non experimental descriptive correlational design with a quantitative, correlational survey approach was used for the study. Non probability, purposive sampling was used to select 100 CRF patients undergoing haemodialysis. The conceptual framework was based on Orem's Self Care Model. The instruments used for data collection were a structured knowledge questionnaire and modified WHO QOL-BREF Scale. The structured knowledge questionnaire was divided into two sections, section I Consists selected socio- demographic performa and section II consist Part A- Structured knowledge questionnaire, Part B- Modified WHO QOL-BREF Scale. The main study was conducted among 100 CRF patients undergoing haemodialysis in the month of April and analysis was done by using descriptive and inferential statistics. Karl Pearson's coefficient of correlation was used to compute the co-relation between knowledge & Quality Of Life. Results: Among the selected 100 patients, Karl Pearson's coefficient of correlation was found to be  $r_{xy} = 0.71$  since  $0 < r_{xy} < 1$ , there is positive correlation between the knowledge of self-care measures and Quality Of Life. Conclusion: The study finding revealed that there is positive correlation between the knowledge and quality of life. As the level of knowledge increases, quality of life improves simultaneously.

**Keywords:** chronic kidney diseases • chronic renal failure, CRF, quality of life

## 1. Introduction

Chronic diseases present a significant challenge to 21<sup>st</sup> century global health policy.<sup>1</sup> The rapid rise of common risk factors such as diabetes, hypertension and obesity especially among the poor, will result in even greater and more profound burdens that developing nations are not equipped to handle. Attention to chronic diseases, chronic kidney disease in particular, has been lacking, largely due to the global health community's focus on infectious diseases and lack of awareness CKD is a worldwide health problem. According to World Health organization (WHO) Global Burden of Disease project, diseases of the kidney and urinary tract contribute to global burden with approximately 850,000 deaths every year and 115,010,107 disability adjusted life years. CKD is 12<sup>th</sup> leading cause of death and 17<sup>th</sup> cause of disability.<sup>2</sup> This global prevalence, however, may be grossly underestimated for a number of reasons. Patients with CKD are at high risk for cardiovascular disease and cerebrovascular disease. they are more likely to die of CVD than to develop end-stage renal failure.<sup>3</sup> Moreover, patients with CVD often develop CKD during the course of their disease, which may go unrecognized.

Therefore, an unknown proportion of people whose death and disability attributed to CVD have kidney disease as well.<sup>4</sup> Renal failure is the inability of the kidneys to adequately filter metabolic waste products from the blood. Kidney failure has many possible causes. Some lead to a rapid decline in kidney function (acute kidney failure); others lead to a gradual decline in kidney function (chronic kidney failure, also called chronic kidney disease). In addition to the kidneys being unable to filter metabolic waste products (such as creatinine and urea nitrogen) from the blood, the kidneys are less able to control the amount and

distribution of water in the body (fluid balance) and the levels of electrolytes (sodium, potassium, calcium, phosphate) in the blood.<sup>5</sup> CKD affects 500 million people worldwide. The number of dialysis patients increase by 7% annually.<sup>6</sup> The burden and magnitude of chronic kidney disease (CKD) is enormous especially in developing countries.<sup>7</sup> Lifestyle related diseases are important causes of increased morbidity and mortality in the world today. The calculations by the USRDS (United States Renal Data System, 1999), indicate that 110 of every 100,000 people have ESRD.<sup>6,7</sup> About 29 of every 100,000 are diagnosed with ESRD each year. The availability and quality of dialysis programmes largely depend on the prevailing economic conditions and social support.<sup>8</sup> The management of ESRD in India is largely guided by economic considerations.<sup>5,8</sup> Treatment of ESRD in India is a low priority for cost strapped public hospitals and in the absence of health insurance plans, less than 10% of all patients receive any kind of renal replacement therapy.<sup>9</sup> To determine which residents at risk for CKD may be in the early stages of the disease, a simple, cost-effective diagnostic tool is needed. The urine albumin test, which detects micro albuminuria, is the most sensitive test for detecting early-stage CKD.<sup>10</sup> Haemodialysis significantly and adversely affects the lives of patients, both physically and psychologically.<sup>11</sup> The global influence on family roles, work competence, fear of death, and dependency on treatment may negatively affect quality of life and exacerbate feelings associated with a loss of control.<sup>12</sup> The treatment involves circulating the patient's blood outside of the body through an extracorporeal circuit (ECC), or dialysis circuit.<sup>13</sup>

End-stage renal disease and its treatment profoundly affect health related quality of life not only for the patient but the family also.<sup>14</sup> Although renal replacement therapy

ameliorates some of the symptoms of end-stage renal disease they may not be completely alleviated.<sup>15</sup> Moreover, with treatment often comes significant life style changes, all of which impact on quality of life.<sup>16</sup> Quality of life of patients with end renal disease is influenced by the disease itself and by the type of replacement therapy.<sup>17</sup> Dialysis must be repeated frequently and continued life-long until death or transplant.<sup>18</sup> The burden of pain and other physical and mental symptoms, as previously mentioned, can account for more than one-third of the impairment observed in mental HR QOL in dialysis patients.<sup>19</sup> Depression in CKD is likely multifactorial, though is typically attributed to feelings of loss and dependence.<sup>20</sup> Although depression can occur at any time during the course of CKD, there are times of increased likelihood of a depressive episode, such as the time leading up to and the first year following initiation of dialysis, particularly if kidney transplantation is not an option due to advanced age and/or co morbidity.<sup>21</sup> During this period, patients are required to make decisions regarding treatment modality and to make multiple and radical lifestyle changes, all of which impact their occupation, familial role, relationships, and leisure activities.<sup>22</sup> They are expected to assimilate information that is foreign and frightening.<sup>23</sup>

## 2. Methods

The research design used for the present study is Non experimental, descriptive co-relational research design. Settings are the more specific places where data collection occurs based on the nature of the research question and the type of information needed to address it. The setting planned for this particular study is selected at Joshi Dialysis center kadmwadi, sunrise hospital rajarampuri, diamond hospital, nagala park of Kolhapur city. In the present study the sample population consists of CRF patient undergoing Hemodialysis in the hospital with a sample size of 100 CRF patients. Based on the criteria mentioned, Non-probability purposive sampling was used to select the sample according to the purpose of the study. Purposive sampling is non-probability sampling, in which it entails the use of the most conveniently available people or objects as subjects in a study. The tool used for gathering relevant data was a structured questionnaire on knowledge of self care measures and WHO QOL-BREF scale among CRF patient undergoing Hemodialysis. The research investigator obtained ethical clearance and formal permission from the Medical Director, Joshi Dialysis center kadmwadi, sunrise hospital rajarampuri, diamond hospital, nagala park of Kolhapur city. to collect data for the main study. The main study was conducted at respective Hospitals of Kolhapur city; from 8<sup>th</sup> April 2019 to 22<sup>nd</sup> April 2019. The steps used for data collection were as follows:

- Step-1 The investigator obtains permission from respective authority to conduct the study.
- Step-2 Selection of subjects.
- Step-3 Self introduction of the investigator.
- Step-4 Administration of structured knowledge questionnaire.
- Step-5 Administration of WHOQOL-BREF Scale.
- Step-6 Data were tabulated and analyzed.

The data obtained were analyzed in terms of the objectives of the study using descriptive and inferential statistics. The plan of the data analysis was as follows.

- Organize the data on master sheet.
- Compute frequency, percentage, mean, standard deviation and range to describe the data.
- Classify the knowledge scores as follows

\*Good ( $\bar{x} + SD$ ),

\*Average ( $\bar{x} - SD$  to  $\bar{x} + SD$ ),

\*Poor ( $< \bar{x} - SD$ );

where  $\bar{x}$  is Mean and SD is Standard Deviation.

Conclusions were drawn from inferential statistics. Karl Pearson's coefficient of Correlation is used to find out the relationship between knowledge of self-care measures score and Quality of life score.

## 3. Results

Majority of the subjects were 46(76.66%) had average knowledge and 03(05%) had good knowledge and 11 (18.34%) had poor knowledge, where as in post test 44(73.34%) subjects had average knowledge, 16(26.66%) subjects had good knowledge and none of the subjects had poor knowledge.

Majority of subject were 70(70%) belongs to moderate QOL, then 17(17%) were having average QOL, 11(11%) were having average QOL, and 2(2%) having optimum quality of life.

In the study, the calculated correlation value ( $t_{tab} = 0.198$ ). this indicates that there is moderately positive correlation between scores of self-care measures and quality of life scores among CRF Patient undergoing hemodialysis.

In the study there is a significant association between knowledge scores regarding self-care measures with their selected demographic variables like age, gender, educational status, occupational status, monthly family income, area of residence, type of family and marital status. therefore the calculated Chi-square values were higher than tabulated value. There was significant association between knowledge scores regarding self care measures with their Selected demographic variables among CRF patients undergoing hemodialysis. At 0.05 level of significance. There is significant association between quality of life scores regarding self care measures with their selected demographic variables among CRF patients undergoing hemodialysis. At 0.05 level of significant.

## 4. Discussion

### Findings related to the socio-demographic variables among CRF patients undergoing hemodialysis:

Majority of the patients 58(58%) belonged to age group of 25-45 years, while 29(29%) and minimum of 4 (4%) subjects belonged to the age group of 0-25 years. Majority of subjects w80(80%) were male, and a minimum of

20(20%) subjects were female. majority of 40(40%) were having secondary educational qualification, and minimum 6(6%) were illiterate, majority of subjects 40(40%) are having private job, and minimum 6(6%) were retired, majority of subjects 40(40%) monthly family income is Rs. 20000-Rs.40000, and minimum 11(11%) were having Rs. 50000 and above, majority of subjects 54(54%) belongs to rural area while 46(46%) were belongs to urban area, majority of subjects 76(76%) belongs to join family, majority of subjects 69(69%) were married, while 17(17%) were unmarried and 14(14%) were widow.

A similar descriptive co-relational study was done in K.L.E's Dr. Prabhakar Kore Hospital and Medical Research centre, Belgum-Karnataka. With descriptive approach, was used for the study. With selected 95 CRF patients undergoing hemodialysis, demographic data reveals that majority of patients 41(41.15) belonged to the age group of 52-72 years, and a minimum of 6(6.31%) patients belonged to age group of 73-93 years. Majority of patients 76(80%) were male, and minimum 19 (20%) patient were female. Majority of patient's occupation 25 (26.31%) was business, and a minimum of 8 (8.42%) patients were unemployed. 27 (28.42%) had primary education, and a minimum of 1(1.05%) patient had no formal education. Majority of the patients family income/month 50 (52.63%) was Rs.>8000, and a minimum of 8 (8.42%) patients was < 2000. Majority of patient 57 (60%) belonged to urban area, and a minimum of 38 (40%) patients belonged to rural area. 66 (69.47%) belonged to nuclear family, and a minimum of 5 (5.26%) patients belonged to extended family. Majority of the patients 83 (87.36%) were married, and a minimum of 2 (2.10%) patients were widows

#### **Findings related to knowledge scores of self-care measures among CRF patients undergoing haemodialysis:**

In the present study majority of the subjects 46(76.66%) had average knowledge and minimum 11 (18.34%) had poor knowledge, where as in post test 44(73.34%) subjects had average knowledge, 16(26.66) subjects had good knowledge and more of the subjects had poor knowledge.

A similar descriptive study was done at university di Catania, italia. Aim of the study was to evaluate the knowledge quality of life in maintenance dialysis and to research the influence of various factors related to treatment and ESRD on quality of life with 40 haemodialysis patients. Result of the study indicated that 11(11.57) had good knowledge, 62(65.26%) had average knowledge whereas 22 (23.15%) had poor knowledge.

Findings related to distribution of quality of life scores among CRF patients undergoing haemodialysis:

In the present study the majority of subjects 70(70%) were belongs to moderate QOL and minimum 2(2%) having optimum quality of life.

A similar descriptive study was done at univesdada federal de sao Paulo, Brazil QOL was measured by means of medical outcomes survey 36-item short form classification

of SES (socioeconomic status) was according to validated criteria of the Brazilian association of research institutes. Results showed that the mean scores for QOL-36 dimension were decreased in patients with low compared with high SES, with greater differences noted during follow-up. Multivariate analysis showed that SES continued to significantly affect all QOL dimension, explaining 5.5% to 14.1% of variation in scales.

#### **Finding a co-relation between knowledge scores of self care measures and QOL Scores:**

In the present study, the calculated correlation value ( $t_{cal}=0.65$ ) is greater than tabulated value ( $t_{tab}=0.198$ ). Hence  $H_1$  is accepted. This indicates that there is moderately positive correlation between knowledge scores of self care measures and quality of life scores among CRF patient undergoing haemodialysis.

The relationship between knowledge of self care measures and quality of life were analyzed by Karl Pearson's coefficient of correlation method, and it was found that there was positive correlation between knowledge of self care measures and quality of life ( $r_{xy} = 0.86$ ). It indicated that the quality of life of CRF patients undergoing haemodialysis was influenced by their level of knowledge.

## **5. Conclusion**

The study emphasizes on the need for improving knowledge in patients and their care givers in which the health personnel can update their knowledge and skills to provide quality nursing care. The study finding revealed that there is positive correlation between the knowledge and quality of life. As the level of knowledge increases, quality of life improves simultaneously. Nurse administrator can encourage nursing personnel, patients and care givers to make active contribution towards the proper gain of knowledge. Nurse administrator can help prepare skilled nurses, health workers and employees in handling dialysis machines to provide quality of care. The findings of the study have implications for nursing practice, nursing education, nursing administration and research. Since present study showed that most of the patients had average knowledge which can be improved by nurses by providing teaching strategy, it helps in uplifting patients' knowledge and hence improvement in their quality of life.

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