National Journal of Multidisciplinary Research and Development
www.nationaljournals.com
ISSN: 2455-9040
Received: 09-05-2022, Accepted: 23-05-2022, Published: 10-06-2022
Volume 7, Issue 1, 2022, Page No. 37-42

A quasi experimental study to assess the effectiveness of nursing intervention on quality of life among patients undergoing hemodialysis in selected hospital at Salem, Tamilnadu

T Gomathi[1], M Geetha[2]
[1] Research Scholar, Mansarovar Global University, Sehore, Madhya Pradesh, India
[2] Research Guide, Mansarovar Global University, Sehore, Madhya Pradesh, India

Abstract
Chronic renal failure is an irreversible progressive condition responsible for high morbidity and mortality. Worldwide, the incidence and prevalence of End-Stage Kidney Disease (ESKD) are increasing in both developed and developing countries. Because it requires life-long treatment in the form of renal replacement therapy, the quality of life (QOL) of patients may significantly impair. Studies have revealed that patient education can play a significant role in improving the QOL in these patients. The primary objective of this study was to assess the QOL of patients on hemodialysis by using the World Health Organization Quality of Life assessment scale and also to study the impact of patient counseling in these patients. The research design adopted this study was Non experimental descriptive design. Purposive sampling technique was used to select the sample for the present study. Hundred patients were selected for the study and they were randomly divided into two groups, control and experimental group. Nursing intervention was given to the experimental group of patients. There was an increase in score in all the four domains (physical, psychological, environmental and social) among the test group when compared with the control group. Also, we found that the psychological domain showed significant increase in score compared with others. Our findings demonstrate that patient counseling plays an important role in improving the QOL by changing their psychological thinking and bringing them toward spirituality.

Keywords: assess, effectiveness, quality of life, hemodialysis patient

Introduction
Worldwide, the incidence and prevalence of End-Stage Kidney Disease (ESKD) are increasing in both developed and developing countries (National Kidney Foundation, 2020)
Majority of the Indian population is suffering from chronic disease such as diabetes or hypertension. Because of negligence or unawareness or due to the poor control of these disease conditions, complications such as renal failure may occur. Without proper care or management, this renal failure may progress to a condition where the glomerular filtration rate (GFR) is less than 15 ml/min.

According to National Kidney Foundation
Classification of chronic renal failure, the stage at which the GFR is less than 15 ml/min is called the 5th stage or end stage renal disease (ESRD) where the treatment option is dialysis or transplantation. Reports say that out of one lakh ESRD patients only 20,000 get the proper treatment. This is mainly due to the lack of awareness of the disease and treatment options, inadequate access to the health centres, inability to afford the cost, minor reimbursement or nonavailability of insurance for chronic illness.
The prevalence of ESRD in India has increased in the last two decades. It became a global threat with significant morbidity and mortality. It decreases patients' overall quality of life (QOL). It was proven that the QOL of ESRD patients is very poor and they have to undergo lifelong treatment for their survival. QOL is used to evaluate the general well-being of individuals and societies. It may vary according to the patient as well as the disease condition.

World Health Organization (WHO)
has defined QOL as 'an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns'. Various tools are developed to measure different aspects of the life. Many studies have been carried out for measuring the QOL with generic as well as disease specific instruments. However, such studies are limited in Indian scenario and this requires particular attention in developing countries where pharmacoeconomics and QOL studies evaluate renal replacement therapy in terms of its outcome. Pharmacoeconomics is an important tool in the socioeconomic studies of the healthcare system especially in developing countries. The assessment of health-related QOL is an essential element of health care evaluation and there by suitable measures can be taken

to increase the QOL of ESRD patients.

The factors of cost, access and quality of renal replacement services are some of the main reasons behind the trends showing increasing prevalence of ESRD in developed and under developing countries. The mean age stage 3 CKD in India was 51 years and in China was 63·6 years. Adults aged 20–50 years in sub-Saharan Africa mainly develop CKD due to hypertension and glomerulonephritis and in the USA, African American and Hispanic people reach ESRD at younger ages than white people (mean age 57 and 58 years vs 63 years).5 In India, the prevalence of CKD is estimated at 800 per million population (pmp) and the incidence of ESRD is 150–200 pmp.

CKD is a unique condition because it causes enormous medical, social and economic distress to the affected individual and their families. 8 Patients with CKD and on dialysis have lower level of quality of life (QoL) and usually this is related to the impact and compromise brought by factors such as fatigue, dietary and fluid restrictions. The other aspects which negatively impact QOL in patients with CKD include the failure to meet the social role and responsibilities due to physical problems such activity intolerance, impotence, and changes in body image. Therefore health-related QOL, which is a measure of adult's functioning, well-being, and general health perception in terms of physical, psychological, and social aspects among patients with CKD, is one of the major outcomes of CKD. Available reports show that when patients with CKD have a good QOL, they tend to live independently because of their physical and mental functioning.

Numerous studies have concluded that Diabetes is the leading cause of ESKD. A study conducted in the GCC region found that ESKD was present in 30% of diabetic patients in Bahrain, Hindawi 14.5% in Oman, and 60% in Saudi Arabia. Also, diabetes mellitus patients are at increased risk of complications that can lead to CKD, eventually leading to poor health, a deterioration in life expectancy, and a decreased QoL. Furthermore, increased hospitalizations among individuals with ESKD can lead to a drain on healthcare resources, thus causing financial stress. Statistics have shown that CKD deaths in Oman account for 3.32% of total deaths per year, with the age-adjusted death rate estimated at 25.79 per 100,000 population (WHO, 2011)

Need for the Study

One of the global public health problems affecting 5-10% of world population in general is Chronic Kidney Disease (CKD). Chronic Kidney Diseases are evolving as a most important health threat. The people suffering from kidney diseases finally require an expensive and life-long Renal Replacement Therapy. Patients who sufferwith Chronic Kidney Disease have to be taken care at home for a longer time before Kidney Transplantation and they depend on intermittent dialysis and drugs to maintain optimum health (Mukesh *et al*., 2015).

Almost 2.5 lakh people pass away of kidney failure in India every year. It is the third largest assassin after malignancy and heart disease (Tamilnadu Kidney Research Foundation, 2016). One of the first technological innovations in medicine is dialysis. It is the only treatment yet allows a patient with end stage kidney failure to live long, healthy and productive lives. At present, about 2.4 million people are alive on dialysis worldwide. In India, dialysis is kept for the very rich, or to those lucky enough to be fit for full medical reimbursement. Everyone else faces crippling long term payment and moving down into deep poverty. It is approximated that about 200,000 new patients develop End Stage Renal Failure every year in India.

Although around two-thirds of the starters to withdraw and be condemned to death. Most of these patients are young, in the best part of existence in their lives – family income producer or mistress of the house. Losing them has overwhelming impact not only on the families but brings down the productivity of entire society and cut downs the national income. As the size of the middle class, and people with “disposable incomes” has grown up, the number of people seeking – on staying on – dialysis is rising. Dialysis centres, till recently the guard of large cities, are opening frequently even in small cities, thus bringing the treatment close to patients homes. It is estimated that currently in India at about 100,000 patients are on dialysis. India’s demand for dialysis is budding at a rate of 31%, compared to 6% in the US and 8% in the rest of the world (Prof. Vivekanand., 2016) In India, particularly in Delhi and Chennai the prevalence rate of Chronic Renal Failure combined with other conditions shows that Hypertension 32.5%, Obesity 17.8% and Diabetes Mellitus 19% in 2010 - 2011 (Luca *et al*., 2016) Psycho educational interventions which provide information about the nature of illness, exercise and relevant coping skills have also been used and found to enhance the physical and psychosocial well-being of patients with CKD. Therefore interventions which are able to enhance physical and mental functions can reduce hospitalization and mortality rates in CKD patients. The other interventions which have been used in this population have focused on education, social support, and self-care and these have been shown to raise coping skills among people on dialysis. Despite the above interventions, literature still shows that emotional adjustment, adherence to treatments, exercise, and engagement in life is still a big challenge for patients with CKD. The available treatment choices, medications, and the renal diet can help patients with CKD on dialysis to maintain a sense of control, only if adherence and life satisfaction with the outcomes are existent. Therefore early education about renal disease, and the potential to live long can aid in overall adjustment and decision making for people on dialysis. Studies show that informed patients tend to report fewer symptoms and more confidence in their ability to manage the symptoms they do have. Patients with CKD usually struggle with energy and activity levels, functional ability, sleeping and eating behaviors, disease symptoms, health status, sex life, well-being, psychological effect, satisfaction with life and health, and happiness, and all these affect their QOL. Similarly, the purpose of this study was to examine the effects of an education and exercise intervention on QOL among patients with CKD in India and was guided by the following objectives to:

Objectives

1. To assess the existing level of quality of life among patients subjected to hemodialysis.
2. To evaluate the effectiveness of nursing intervention on quality of life among patients subjected to dialysis.
3. To compare the quality of life of hemodialysis patients between experimental and control groups.
4. To determine the association of quality of life with selected demographical variables in experimental and control groups.

Research Methodology

Research Approach

Research approach is the description of the plan to investigate the phenomenon under study in a structured (quantitative), unstructured (qualitative) are combination of the two methods. (Suresh k Sharma 2011) [2] For the present study quantitative approach has been selected.

Research Design

Research design is the master plan specifying the methods and procedure for collecting and analyzing the needed information in a research study (Suresh k Sharma2011) [2].

For the present study Quasi-experimental research design was selected there was manipulation of independent variable.

Variables

Independent variable: Structured teaching programme

Dependent variable: Nursing interventions among patients undergoing hemodialysis

Setting of the Study

Setting is the physical location and condition in which data collection takes place. (Polit and Beck 2013)

The study was carried out in Shanmuga Multi-Speciality Hospital, Salem.

Population

Population is a complete set of elements (persons or objects) that possess some common characteristic defined by the sampling criteria established by the researcher. (Polit and Beck 2013)

The study of population for the present study is the hemodialysis patient who undergoes admitted in Shanmuga Multi-Speciality Hospital, Salem.

Sampling

Sample

Sample is the subset of the population selected to participate in a study. (BT Basavanthappa 2014)

The samples for the present study is all the patients who undergoes hemodialysis in Shanmuga Multi-Speciality Hospital, Salem.

Sampling Technique

Sampling is the process of selecting a subset of a population in order to obtain information regarding a phenomenon in a way that represents the entire population. (BT Basavanthappa 2014).

Purposive sampling technique was used to select the sample for the present study.

Selection Criteria

The samples were selected based on the following criteria

Inclusion Criteria

1. Patients receiving hemodialysis regularly
2. Patients receiving hemodialysis for more than six weeks
3. Patients between 30 and 60 years old
4. Patients able to understand either English or Tamil
5. Patients willing to participate in the study

Exclusion Criteria

1. Patients who are known to have a psychiatric disorder
2. Patients who are undergoing hemodialysis for a condition other than CKD
3. Patient with an altered level of consciousness
4. Very sick patients
5. Patients who are having hemodialysis having rejected a kidney transplant
6. Patients with an acute kidney injury

Description of data collection instrument: Tool consists of two parts,
Section I: Socio-Demographic data
It consists of age, sex, religion, occupation of father, occupation of mother, family income, Education qualification, domicile, type of house and college students which subjects like more..

Section II: WHOQOL-BREF questionnaire
WHOQOL-BREF questionnaire consists of 26 items.Items 1 and 2 assess individual's overall perception of QOL and health, respectively; the remaining items are categorized under physical, psychological, social, and environmental domains. Each item is rated by a 5-point Likert scale. The responses were scaled in a positive direction. The mean score of the items within each domain was used to calculate the raw score. Raw scores were then transformed to a 0–100 scale using a transformation formula.18 Higher score reflects a better QOL. WHOQOL-BREF questionnaire has been validated for assessing QOL in patients with CKD in different settingsand has been used to assess QOL by a number of studies elsewhere. We used socio demographic data as predictor variables and all four domains, including items 1 and 2, as outcome variables.

Validity and Reliability of the Tool
Validity
The validity of an instrument is a determination of how well the instrument reflects the abstract concept being examined. (Burns and grove 2012)
Content validity of the tool was established by sending the tool to the experts concerned in field of nursing. Their options and suggestion were taken to modify the tool.

Reliability
Reliability of a research instrument is defined as the extent to which the instrument yields the same results on repeated measures. (Lobiondo –wood and haber 2014) Reliability of the tool was tested during pilot study. Cronbach's alpha method was used to find out the reliability of the checklist method. The reliability (r) was found to be 0.86.

Ethical Consideration
- Written permission was obtained from the Manager of Shanmuga Multi-Speciality Hospital, Salem.
- Informed consent obtained from the Samples.

Plan for Data Analysis
The collected data was planned to be organized, tabulated and analyzed based on the objectives of the study by using descriptive statistics such as percentage, mean, standard deviation and inferential statistics such as chi-square and paired t- test. The paired t-test was planned to be used to find out the effectiveness of video assisted learning module and chi- square test to find out the association between socio-demographic variable with Quality of Life. The data was planned to be presented in the form of tables and figures.

Data Analysis and Discussion
The largest proportion (37%) of the patients was between 40 and 49 years old. In addition, 54% of the patients were male, 43% were not educated or educated only up to the primary level, while 72% were married. 80% of the patients were in employment and the largest proportion (87%) of patients' income was more significant than 3,900 USD, but it must be looked for some more categories. A total of 44.9% of the patients had diabetes mellitus, and 59.6% were underweight.
Most of the demographic and clinical variables are associated with QoL measures. &e patients with cardiac disease and underweight patients had low quality of life and low physical functioning. Young people, educated people, widowed people, and people on low incomes group have problems carrying out their physical roles. &e educated groups were much affected than the noneducated or primary educated group regarding their physical role. A significant difference in general health was observed in the presence of comorbid chronic illnesses ($p < 0.01$).
Patients with cardiac disease and diabetes mellitus, coupled with hypertension, were in much worse general health. Young patients also feel more of an emotional burden compared to older patients. Also, patients with 5–8 mg/l levels of serum creatinine had lower emotional wellbeing. &e low-income groups were also affected regarding social function. All the variables used in this study to measure the QoL had a positive correlation with the highest burden found in physical activities. In contrast, the lowest was found in social function.
The study further reveals that these patients' physical function is 45.666 (95% CI, 44.291, 47. 041), which is less than half of the function of a normal human being, which is 100. &is shows that the burden of the disease seems very severe. This study's mean emotional QoL score was 53.33 (95% CI, 51.1, 55.5), which is only slightly more than half of the QoL score in a healthy human. The same findings have been revealed in a multicenter study among dialysis patients in India. Even after interventions, the patients revealed lesser physical QoL than emotional QoL, which was statically significant.

Limitation
The study was conducted in only one setting. Hence, larger patients' participation from various centers of various geographical locations is needed. We used a cross-sectional design and did not identify a causal

relationship between the variables. We used convenience sampling which may have resulted in bias interpretation of the results and conclusions. We could have explored the missed hemodialysis treatments, predictors, and outcomes among the hemodialysis population.

Conclusion

Our study showed there was a significant effect of the patient's QOL physical functioning with older age ($p < 0.05$), income ($p < 0.04$), and frequency of dialysis ($p < 0.03$). &ere was a higher significance of patent's QOL role physical with education ($p < 0.01$) and diabetes mellitus ($p < 0.04$). &ere is a positive relationship between patient's pain with older age ($p < 0.03$) and frequency of dialysis ($p < 0.05$). &ere is positive QOL of general health with age ($p < 0.01$), diabetes mellitus ($p < 0.02$), and frequency of dialysis ($p < 0.03$). There was significant relationship between QOL fatigue and age ($p < 0.05$), education ($p < 0.03$), and duration of dialysis ($p < 0.04$). Elderly patients, lower income, and increased frequency of dialysis had poor QOL for physical functioning. Low education and diabetes mellitus had poor QOL for role physical. Elderly patients and increased frequency of dialysis per week had lower QOL for pain and general health. Elderly patients, lower education, and longer duration of dialysis the treatment with hemodialysis in patients is important in improving QOL. The results of the study provide evidence for Ministry of health, medical professionals, and clinical nurses to prioritize healthcare and effective treatment plans. Both physical and emotional QOL scores in hemodialysis patients are nearly half those of a normal human. The study has revealed that there is a moderate QOL among hemodialysis patients like other studies. Hence, the report can support planning the priorities and clinical practice guidelines for best practices in renal rehabilitation in dialysis centers to improve patients QOL.

Reference

1. Denise F Polit. Nursing Research Principles and Methods, 7th edition Philadelphia, Lippincott publishers, 2004, 283-287.
2. Suresh K Sharma. Nursing Research and Statistics, 8th edition, Haryana: Rajkamal Electric Press, 2011, 93-94.
3. Gray Shirlay. Personal Hygience and Good Health, 2nd edition, Child World Publishers, 2004, 323-326.
4. Kidol. Essential of Dental Carries, 1st edition, Oxford university publishers, 2005, 484-489.
5. Terri Kyle. Essential of Pediatric Nursing, 1st edition, workers Kluwer publishers, pvt.ltd, New Delhi, 2008, 223-226.
6. Park K. Textbook of Preventive and Social Medicine, 9th edition, Banarsidas Bhanot, Jabalpur, 2007, 34-35.
7. Ng SW, Ali HI, Harrison G, Popkin BM. "&e prevalence and trends of overweight, obesity and nutritionrelated non-communicable diseases in the Arabian Gulf States," Obesity Reviews,2011:12(1):1-13.
8. Zaghloul JA, Mabry R, Mohammed AJ. "Addressing the threat of chronic diseases in Oman," Preventing Chronic Disease,2008:5(3):A99.
9. Hassanien AA, Al-Shaikh F, Vamos EP, Yadegarfar G, Majeed A. "Epidemiology of end-stage renal disease in the countries of the Gulf Cooperation Council: a systematic review," JRSM Short Reports,2012:3:(6):1-21.
10. Al-Shaikh SB, Hayati F, Shayanpour S, Seifollah Beladi Mousavi S. "Diabetes and end-stage renal disease; a review article on new concepts," Journal of Renal Injury Prevention,2015:4(2):28.
11. Lucas GM, Lau B, Atta MG, Fine DM. Keruly J, Moore RD. "Chronic kidney disease incidence, and progression to end-stage renal disease, in HIV-infected individuals: a tale of two races," e Journal of Infectious Diseases,2008:197(11):1548-1557.
12. Sesso R, Yoshirro MM. Time of diagnosis of chronic renal failure and assessment of quality of life in haemodialysis patients. Nephrol Dial Transplant,1977:12:2111-6.
13. Lii YC, Tsay SL, Wang TJ. Group intervention to improve quality of life in haemodialysis patients. J Clin Nurs,2007:16:268-75.
14. Khaled AK, Larissa M, Karpov I *et al*. Individual quality of life in chronic kidney disease: Influence of age and dialysis modality. Clin J Am Soc Nephrol,2009:4:711-8.
15. Peter P, Paul LK. Aspects of quality of life in haemodialysis patients. Clin J Am Soc Nephrol,2010:5:163-6.
16. Gabbay E, Meyer KB, Griffith JL, Richardson MM, Miskulin DC. Temporal trends in health related quality of life among Haemodialysis patients. Clin J Am Soc Nephrol,2010:5(2):261-7.
17. Wasserfallen JB, Halabi G, Saudan P *et al*. Quality of Life on chronic dialysis: Comparison between haemodialysis and peritoneal dialysis. Nephrol Dial Transplant,2004:19:1594-9.
18. Spiegel BM, Melmed G, Robbins S, Esrailian E. Biomarkers and Health Related Quality of Life in End stage renal disease: A Systemic Review. Clin J Am Soc Nephrol,2008:3:1759-68.
19. Mercus MP, Jager AJ. Quality of life on patients on chronic dialysis: Self assessment 3 month after the start of treatment. Am J Kidney Dis,1997:29:584-92.
20. Lau JA, Mabry R, Mohammed AJ. "Peer-reviewed: addressing the threat of chronic diseases in Oman," Preventing Chronic Disease, 2008, 5(3).
21. Sanchez HM. "Benefits of intradialytic physiotherapy in Quality of life, pain, edema and respiratory function of patients with chronic kidney disease," Fisioterapia em Movimento,2018:31:31.
22. Campbell K, Rossi M, Carrero JJ. "Nutrition management in hemodialysis," in Core Concepts in Dialysis and Continuous erapies, Springer, Berlin/Heidelberg, Germany, 2016, 53-70.

23. Slavitt A. “RE: cms-1628-P: medicare program; end-stage renal disease prospective payment system and quality incentive program,” 2015.
24. Chuahirun T, Simoni J, Hudson C *et al*. “Cigarette smoking exacerbates and its cessation ameliorates renal injury in type 2 diabetes,” e American Journal of the Medical Sciences,2004:327:(2):57-67.
25. Hudson CT, Lin YC, Lin YC *et al*. “Roles of serum calcium, phosphorus, PTH and ALP on mortality in peritoneal dialysis patients: a nationwide, population-based longitudinal study using TWRDS 2005–2012,” Scientific Reports,2017:7(1) 33.
26. Mollaoˇglu M, Kayatas M, Y¨ur¨ugen B. “Effects on caregiver burden of education related to home care in patients undergoing hemodialysis,” Hemodialysis International. International Symposium on Home Hemodialysis,2013:17(3):413-420.
27. Chung ML, Lennie TA, Mudd-Martin G, Dunbar SB, Pressler SJ, Moser DK. “Depressive symptoms in patients with heart failure negatively affect family caregiver outcomes and Quality of life,” European Journal of Cardiovascular Nursing, vol,2016:15(1):30-38.
28. Lennie LA, Carolyn Graff J, Wicks MN *et al*. “Cne. Male caregivers of persons with end-stage renal disease: a literature review,” Nephrology Nursing Journal,2016: 43(6).
29. Braithwaite J, Matsuyama Y, Johnson J. Healthcare Reform, Quality and Safety: Perspectives, Participants, Partnerships and Prospects in 30 Countries, CRC Press, Boca Raton, FL, USA, 2017.
30. Anees M. “Translation, validation and reliability of the kidney diseases quality of life-short form (KDQOL-SF Form) tool in Urdu,” Journal of the College of Physicians and Surgeons-Pakistan: JCPSP,2016:26(8):651-654.
31. Malik RD, Mapes DL, Coons SJ, Carter WB. “Development of the kidney disease quality of life (KDQOLTM) instrument,” Quality of Life Research,1994:3:(5):329-338.
32. Kallich ER. “Effectiveness of education and exercise on quality of life among patients undergoing hemodialysis,” Clinical Epidemiology and Global Health,2019:7(3):402-408.
33. Sa’ed HZ. “Factors affecting quality of life in patients on hemodialysis: a cross-sectional study from Palestine,” *BMC Nephrology* International Journal of Nephrology,2016:7:17(1):44.
34. Al-Khaldi L. “Quality of life comparison between hemodialysis and peritoneal dialysis among end-stage renal disease patients in Kuwait,” Open Access Journal of Translational Medicine & Research,2017:1(3):00013.
35. Atapour A. “&e effect of aromatherapy with chicory essence on the Quality of life in patients undergoing hemodialysis,” International Journal of Pharmaceutical Research and Allied Sciences,2016:5(3):371-378.
36. White CA, Pilkey RM, Lam M *et al*. Predialysis clinic attendance improves quality of life among haemodialysis patients. BMC Nephrology,2002:3:3.
37. WHOQOL Group. The development of the WHO quality of life assessment instrument (WHOQOL). In: Orley J, Kukyen W, (eds). Quality of Life Assessment: International Perspectives. Heidelberg: Springer-Verlag, 1994.
38. Zhang AH, Cheng LT, Zhu N *et al*. Comparison of quality of life and causes of hospitalization between haemodialysis and peritoneal dialysis patients in China. Health Qual Life Outcomes,2007:5:49.