ORIGINAL ARTICLE ASIAN JOURNAL OF MEDICAL SCIENCES

Effect of perceived social support and level of hope on quality of life among chronic kidney disease patients in a tertiary care center in Chennai - A cross-sectional study

Ganeshkumar Raja NC[1], Krithiga Sivakumar[2], Seenivasan P[3]

[1]Postgraduate Trainee, [2]Assistant Professor, [3]Professor and Head, Department of Community Medicine, Government Stanley Medical College, Chennai, Tamil Nadu, India

Submission: 04-01-2023 Revision: 02-03-2023 Publication: 01-04-2023

ABSTRACT

Background: Chronic kidney disease (CKD) is a major public health problem in developing countries, adversely affecting the quality of life (QOL) of the individual and their family. Perceived social support and hope are important factors influencing the QOL. **Aims and Objectives:** The objectives of the study were to assess the QOL among patients with CKD and the effects of perceived social support and hope on QOL. **Materials and Methods:** This is hospital based cross-sectional study among CKD patients attending nephrology department, between March and November 2018. Face to face interview using Adult Hope Scale and Multidimensional Perceived Social Support scale and WHOQOL-BREF-26 was done after obtaining informed consent. Epi-info and SPSS16.0 were used for statistical analysis. t-test, ANOVA, and correlation coefficient was done to find any association. **Results:** Among the 152 participants, majority (70%) had fair QOL with the highest score in social relationships domain of 53 (±12), using the WHO BREF26 questionnaire. The QOL was also found to be associated with education and socio-economic status. A positive correlation between perceived social support and hope with QOL was observed. **Conclusion:** Majority had a fair QOL, with the highest score in social relationship domain. Positive correlation was observed between perceived social support and hope with QOL. Apart from medical treatment, the key to better health outcome depends on social support. Hence, it is imperative to highlight the importance of social support and hope at the commencement of the treatment of CKD.

Key words: Quality of life; Perceived social support; Hope; Multidimensional perceived social support scale; Adult hope scale

Access this article online

Website: http://nepjol.info/index.php/AJMS

DOI: 10.3126/ajms.v14i4.51118

E-ISSN: 2091-0576

P-ISSN: 2467-9100

INTRODUCTION

Chronic kidney disease (CKD) is a major public health problem in developing countries. It is one among the top causes of deaths globally and the 8th leading cause of death in India. It is often associated with increased incidence of cardiovascular diseases[1] and has a long-term impact, adversely affect the quality of life (QOL) of the individual and their family. Hemodialysis - mainstay treatment is expensive, requires frequent hospital visits. The patients also have various restrictions resulting in reliance on caregiver, disturbance in social life and income.[2]

QOL is an overall assessment of a person's well-being, which includes physical, emotional, social dimensions, and self-perceived health status.[3] Social support is the perceived comfort, caring, assistance and esteem individual receives from others,[4] it is an important factor influencing the psychological and physical health of these patients. Snyder defined hope as a cognitive set that is composed of a reciprocally derived sense of successful agency (goal-directed determination) and pathways (planning of ways to meet goals), an individual-differences measure is developed.[5]

Address for Correspondence:
Dr. Krithiga Sivakumar, Assistant Professor, Department of Community Medicine, Government Stanley Medical College, Chennai - 600 116, Tamil Nadu, India. **Mobile:** +91-9943059069. **E-mail:** krithigasivakumar@gmail.com

For patients with CKD, social support and hope is regarded as one of the most important and effective coping style during treatment. The concepts of QOL and quality-adjusted life years in chronic diseases are still emerging concepts in India. Improvement of QOL has been one of goals in health care, there are paucity of literature on Effects of Perceived Social support and level of hope on QOL.

Aims and objectives

The objectives of the study were to assess the quality of the life among patients with CKD undergoing dialysis in a tertiary care hospital in Chennai and to assess the effects of perceived social support and hope on QOL.

MATERIALS AND METHODS

It was a hospital based cross-sectional study conducted among CKD patients attending Nephrology Department, Govt. Stanley Medical Hospital between March 2018 and November 2018. CKD patients diagnosed for at least for 3 months, both male and female, undergoing Dialysis in Nephrology Department, Govt. Stanley Medical Hospital were included in the study. Those with other severe comorbidities, those not able to communicate, and those not willing to participate in the study were excluded from the study. Sample size was calculated using formula $n=z^2\sigma^2/E^2$ Where, Z=1.96, from the previous study[4] σ = SD = 17.65 Absolute error E 3%, Non response rate 10%. Calculated sample size was 152.

Data were collected by face to face interview using a pre tested, semi-structured questionnaire containing

a. Socio demographic profile of the CKD patients
b. Social support and hope assessment using the following questionnaires.

Multidimensional perceived social support questionnaire

It is 12-item version developed by Zimet et al.[6] This scale has three domains: Family support, friends support, and significant others a with three subscales: Family (items 3, 4, 8, and 11), Friends (items 6, 7, 9, and 12), and Significant Others (items 1, 2, 5, and 10). Every item uses a seven-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). A higher score indicates greater the social support perceived by an individual; the total possible score ranges 12~84, or it can be scored according to its subscales by adding the items in each subscale and then dividing by 4.

Adult hope scale[7]

The 12-item scale which includes two dimensions: (1) Agency (i.e., goal-directed energy) and (2) pathways (i.e., planning to accomplish goals). Of the 12 items, 4 make up the Agency subscale and 4 make up the pathways subscale. The remaining four items are fillers. Each item is answered using an 8-point Likert-type scale ranging from Definitely False to Definitely True. The hope scale reflects the sum of the agency and pathways items, in which a high score indicates a higher level of hope.[7]

c. QOL assessment by WHOQOL- BREF-263

This was developed by the WHO. It has 24 facets and provides a profile of scores on four dimensions of QOL: Physical health, psychological, social relationships, and the environment. The WHOQOL-BREF is a 26-item instrument consisting of four domains: physical health (7 items), psychological health (6 items), social relationships (3 items), and environmental health (8 items); it also contains QOL and general health items. Each individual item of the WHOQOL-BREF is scored from 1 to 5 on a response scale, which is stipulated as a five-point ordinal scale. The scores are then transformed linearly to a 0–100-scale higher scores reflect a better QOL. QOL was categorized as poor (mean score <40), fair (scores 40–60), and good (scores >60). The WHOQOL-BREF questionnaire is available in Tamil, the local language which has been validated.[8]

Statistical analysis was done using Epi-info and SPSS16.0. Continuous variables were expressed in mean and standard deviation and categorical variables were expressed in percentage and proportions. t-test, one-way ANOVA, and correlation coefficient was done to find any association between variables and $P<0.05$ was considered significant at 95% confidence interval. Data set was checked for missing value and planned to be replaced with arbitrary value. However, we did not have any missing value.

Ethical issues

The study was approved by institutional ethics committee (No: SMC/IEC/FEB/2017 dated 17.02.2017). All participants were explained about the study. Data were collected only after obtaining informed consent according to guidelines of ICMR 2017 ethics guidelines and declaration of Helsinki, 2013. Confidentiality and privacy of the participants were maintained throughout the study.

RESULTS

This cross-sectional study included 152 CKD patients undergoing dialysis at Department of Nephrology, Government Stanley Medical College. The mean duration

of CKD is approximately 8+1.2 (mean±SD) months. The age of the study participants range between 17 and 55 with a mean age of 38±10.4 (mean±SD) years. Majority of the study participants are males 64% (97). Among the 152 participants, 18 (12%) were illiterate, 7 (5%) had primary education, 37 participants (24%) had middle school education, 26 (17%) had completed high school, 20 participants (13%) had higher secondary education, and 44 participants (29%) were graduates. Socio economic status was assessed using BG Prasad classification, showed that participants 41.4% (63) belonged to upper-middle and middle class were of 41.4% (63), followed by lower-middle 11.2% (17), 3.9% (6) belonged to upper class and rest 2% (3) belonged to the lower class. About 25% (38) of the participants had the habit of smoking and 75% (114) were non-smokers, 60 participants (40%) had the habit of consuming alcohol, and rest 92 (60%) had not consumed alcohol.

WHO-QOLBREF scale was used to assess the QOL. The mean overall scores were 47±9. Participants scored highest in the social relationships domain with a mean score 53±12 and lowest in the psychological domain with a mean score of 46±13. The physical domain had a mean score of 49±12 and environmental domain had 47±11.

(Table 1) shows the QOL, categorized as poor (mean score <40), fair (scores 40–60), and good (scores >60). In our study, we was found that 89 (70%) had fair QOL, 26 (20%) had poor QOL, and 13 (10%) had good QOL.

ANOVA and t-test were done to find of there was any association with various demographic variables and QOL (Table 2). The QOL of the study participants is also found to be significantly associated with education (P<0.001) and socio-economic status (P=0.012). Patients having higher educational status were found to have higher mean QOL scores. Other factors such as gender, substance abuse such as smoking and drinking alcohol were not found to be associated with QOL in patients having CKD and undergoing dialysis.

The perceived social support among the study participants was assessed with Multidimensional Perceived Social Support scale. This scale has three domains: Family support, friends support, and significant others, the overall mean score was 4.3±0.43. The family domain had the highest mean score of 5±0.52, followed by friends support domain score of 4.2±0.64 and significant another domain of 3.7±0.51.

Hope was assessed using Adult hope scale which includes two dimensions: agency and pathway. The overall mean score of 37±4.1. The mean score of pathway domain was 19±2.2 and agency domain was 17±2.7.

Table 1: Distribution QOL of the study participants by WHO-BREF (n=152)

Quality of life	Frequency (n)	Percentage
Poor (<40)	30	20
Fair (40–60)	107	70
Good (>60)	15	10
Total	152	100

QOL: Quality of life

Table 2: Association of QOL with socio demographic variables (n=152)

Variables	Mean QOL score (SD)	P-value
Gender		
Male	48 (9.5)	0.245
Female	46 (8.8)	
Educational status		
Illiterate	39 (8.4)	<0.001
Primary school	37 (5.7)	
Middle school	45 (6)	
High school	48 (9.6)	
Higher secondary	50 (9.2)	
Graduation	54 (7.7)	
Socio economic status		
Upper	38 (10)	0.012
Upper middle	49 (8.5)	
Middle	46 (8.4)	
Lower middle	47 (12.1)	
Lower	34 (1.2)	
Smoking		
Yes	46 (8.0)	0.763
No	47 (9.8)	

QOL: Quality of life

Correlation between the perceived social support and hope scores with QOL scores the test was tested using Pearson correlation coefficient (Table 3). It was observed that, the perceived social support and hope scores with QOL scores had a positive correlation which was statistically significant. Perceived social support had correlation coefficient (r) of 0.563 (P<0.001) and hope had correlation coefficient (r) of 0.274 (P=0.002) with QOL scores, respectively.

DISCUSSION

This study was taken up as an initiative to find out the QOL, perceived social support, and hope among 152 chronic kindly disease patients undergoing dialysis at a tertiary care center in south India. QOL is becoming an important measure of well-being after commencement of treatment of renal diseases. The primary goal of treatment should be is to improve the functional ability of patients to maximum extent. This study's results show that QOL

Table 3: Correlation between QOL and PSS and hope (n=152)

Outcome	Correlation coefficient (r)	P-value
Perceived social support	0.563	<0.001
Hope	0.274	0.002

is affected, factors affecting it and hope and social support among CKD patients undergoing hemodialysis in a tertiary care institute in Chennai.

The mean age of our study participants was 38±10.4. Study by, Joshi et al.,[9] also showed CKD prevalent in middle age group. This shows that CKD is on the rise among the younger and middle age group. Dependency on hemodialysis affects their productivity and making them dependent on others. In our study, 1/4th of the study participants were smokers and 40% had the habit of consuming alcohol, similar pattern was found in the study of Sharma et al.,[10] this is expected as association of smoking and alcohol role in development of CKD is already established. Study participants belonged to upper and middle class, similar to the study by Sharma et al.[10] The rising CKD among low- and middle-income group is a concern taking into account the cost and duration of the treatment involved.

In our study, majority of the participants had fair QOL. Only very few had good QOL These results are in accordance with various studies[4,11] which also found QOL to be reduced across all stages of CKD. This undoubtedly proves QOL is compromised in these patients. This is due to long duration of treatment, loss of income, loss of social life and dependence on others, martial, and family problems faced due to the disease condition. When domain specific score were explored, Participants scored highest in the social relationships domain. This indicates that our study population were happy with their relationships with friends, family, and social support, and lowest score in the psychological domain which may be due negative self-image, negative thoughts, low self-esteem and the mental status caused by the CKD per say. This finding was similar to other studies in India[4] and Nepal.[9]

The QOL of the study participants is also found to be significantly associated with education and socio-economic status as observed in various studies[4,7,8] this may be due to reason, education brings better awareness of the disease and educated persons might have better coping and self-adjustment. Gender was not found to be significantly associated with QOL in contrast to study by Zyoud et al.[12] The difference may be attributed to the difference in our sampling and study population.

On assessing the perceived social support among patients it was found that family domain had the maximum score, followed by friends. This outcome is supported by a study by, Lilympaki et al.[13] Most of the CKD patients usually are accompanied by their family to hemodialysis and consultation. They also play an important role in decision making, expenses, transport etc. Adult hope scale revealed, the mean score of pathway domain was higher than agency domain was similar to a study by Li et al.[14] Research shows that hope is made up of two qualities - the pathways component describes the ability to produce a plan to achieve a goal, while the agency component describes an individual's perception that they are capable of achieving their goals.

In our study, there was positive correlation between perceived social support and hope with QOL and it was is statistically significant, as seen in study by, Aiexopoulou et al.,[15] apart from medical treatment, the key to better health outcome depends on social support. There is a paucity of research on the association between social support and QOL in dialysis patients.[16-18] We also found, the perceived social support increases with increase in observed QOL. There were similar results observed in the studies.[19,20] The mean hope score increases with increase in observed QOL, this was similar study by Melo et al.[20] Thus it shows that hope contributes to achieving a better quality to life, many of studies in the past had examined the association of hope with health outcomes. Measuring hope helps to sheds light on reasons for individual differences in health. Further Research into hope's relationship with health outcomes especially may help to plan interventions to improve both physical and mental health patients.[21]

The main strength of the study was it was able to able to achieve its objectives within short duration with adequate sample size and validated questionnaires in resource deficient setting. This is one of few studies about perceived support, hope and QOL in CKD patients in developing country like India which links the physical, psychological, and social aspects of the disease and finding benefits out of them.

Limitations of the study

This study was done in one tertiary Government Institution. Hence, the results of this study may not be the generalizable in other settings. It was a cross-sectional study, based on self-reported measures, so one cannot derive any

conclusions on the causality of the associations observed. Comorbid conditions were not taken into account due to time constraint. Follow-up study from diagnosis onwards would have yielded better information.

CONCLUSION

We conclude that majority of the patients with CKD undergoing dialysis had a fair QOL. They had highest score in social relationship domain. The participants perceived level of social support was highest with family domain and hope higher for pathway domain scale. Positive correlation was observed between perceived social support and hope with QOL. The quality-of-life scores were also found to be associated with education and socio-economic status.

Hence, it is imperative to highlight the importance of social support and hope at the commencement of the treatment of CKD and actively involve family and friends right from commencement of treatment. It is essential for health professionals to develop targeted interventions to strengthen patients' social networks and support groups and to improve the hope which can effectively ensure improvement in patients' QoL. Involvement of the medical social workers actively in the care of the CKD patients is highly recommended.

ACKNOWLEDGMNT

The authors would like to acknowledge all the participants and their caregivers for their support.

REFERENCES

1. GBD 2015 Mortality and Causes of Death Collaborators. Global, regional, and national life expectancy, all-cause mortality, and cause-specific c mortality for 249 causes of death, 1980-2015: A systematic analysis for the global burden of disease study 2015. Lancet. 2016;388(10053):1459-1544.
   https://doi.org/10.1016/S0140-6736(16)31012-1
2. Testa MA and Simonson DC. Assessment of quality-of-life outcomes. N Engl J Med. 1996;334(13):835-840.
   https://doi.org/10.1056/NEJM199603283341306
3. World Health Organization. WHOQOL-Measuring Quality of Life. Geneva: World Health Organization; 1997. p. 1-13. Available from: https://www.who.int/mental_health/media/68 [Last accessed on 2020 Jan 15].
4. Sathvik BS, Parthasarathi G, Narahari MG and Gurudev KC. An assessment of the quality of life in hemodialysis patients using the WHOQOL-BREF questionnaire. Indian J Nephrol. 2008;18(14):141-149.
   https://doi.org/10.4103/0971-4065.45288
5. Matsuda T, Aptel I, Exbrayat C and Grosclaude P. Determinants of quality of life of bladder cancer survivors five years after treatment in France. Int J Urol. 2003;10(8):423-429.
   https://doi.org/10.1046/j.1442-2042.2003.00657.x
6. Zimet GD, Dahlem NW, Zimet SG and Farley GK. The multidimensional scale of perceived social support. J Pers Assess. 1988;52(1):30-41.
   https://doi.org/10.1207/s15327752jpa5201_2
7. Snyder CR, Harris C, Anderson JR, Holleran SA, Irving LM, Sigmon ST, et al. The will and the ways: Development and validation of an individual differences measure of hope. J Pers Soc Psychol. 1991;60(4):570-585.
   https://doi.org/10.1037/0022-3514.60.4.570
8. Validation of Tamil Translation of WHOQOL-Brief in Elderly with Neurological Illness. Available from: https://www.researchgate.net/publication/322469146_validation_of_tamil_translation_of_WHOQOL-bref_in_elderly_with_neurological_illness [Last accessed on 2022 Jul 13].
9. Joshi U, Subedi R, Poudel P, Ghimire PR, Panta S and Sigdel MR. Assessment of quality of life in patients undergoing hemodialysis using WHOQOL-BREF questionnaire: A multicenter study. Int J Nephrol Renovasc Dis. 2017;10:195-203.
   https://doi.org/10.2147/IJNRD.S136522
10. Sharma S, Rani RH, Subramanyam G, Iram M. Evaluation of impact of counseling on quality of life of chronic kidney disease and hemodialysis patients. Indian J Pharm Pract. 2013;6(3):57-61.
11. Tannor EK, Norman BR, Adusei KK, Sarfo FS, Davids MR and Bedu-Addo G. Quality of life among patients with moderate to advanced chronic kidney disease in Ghana-a single centre study. BMC Nephrol. 2019;20(1):122.
    https://doi.org/10.1186/s12882-019-1316-z
12. Zyoud SH, Daraghmeh DN, Mezyed DO, Khdeir RL, Sawafta MN, Ayaseh NA, et al. Factors affecting quality of life in patients on haemodialysis: A cross-sectional study from Palestine. BMC Nephrol. 2016;17(1):44.
    https://doi.org/10.1186/s12882-016-0257-z
13. Lilympaki I, Makri A, Vlantousi K, Koutelekos I, Babatsikou F and Polikandrioti M. Effect of perceived social support on the levels of anxiety and depression of hemodialysis patients. Mater Socimed. 2016;28(5):361-365.
    https://doi.org/10.5455/msm.2016.28.361-365
14. Li MY, Yang YL, Liu L and Wang L. Effects of social support, hope and resilience on quality of life among Chinese bladder cancer patients: A cross-sectional study. Health Qual Life Outcomes. 2016;14:73.
    https://doi.org/10.1186/s12955-016-0481-z
15. Aiexopoulou M, Giannakopoulou N, Komna E, Alikari V, Toulia G and Polikandrioti M. The effect of perceived social support on hemodialysis patients' quality of life. Mater Socimed. 2016;28(5):338-342.
    https://doi.org/10.5455/msm.2016.28.338-342
16. Rambod M and Rafii F. Perceived social support and quality of life in Iranian hemodialysis patients. J Nurs Scholarsh. 2010;42(3):242-249.
    https://doi.org/10.1111/j.1547-5069.2010.01353.x
17. Patel SS, Peterson RA and Kimmel PL. The impact of social support on end-stage renal disease. Semin Dial. 2005;18(2):98-102.
    https://doi.org/10.1111/j.1525-139X.2005.18203.x
18. Tel H and Tel H. Quality of life and social support in hemodialysis patients. Pak J Med Sci. 2011;27(1):64-67.
19. Malik AM and Mazahir S. Trust, hope and quality of life in renal

failure patients. Sci Int (Lahore). 2015;27(4):3493-3498.

20. Melo G, Silva R, Silva M, Galvão M, Silva V and Caetano J. Religiosity and hope in patients with chronic renal failure: Coping strategies. Int Arch Med. 2016;9(133):1-9. https://doi.org/10.3823/2004

21. Snyder CR, Lehman KA, Kluck B and Monsson Y. Hope for rehabilitation and vice versa. Rehabil Psychol. 2006;51(2):89-112. https://doi.org/10.1037/0090-5550.51.2.89

Authors' Contributions:
GRNC- Concept and design of the study, data collection, prepared first draft of manuscript; **KS-** Statistical analysis and interpretation, reviewed the literature, and manuscript preparation; **SP-** Concept and revision of the manuscript.

Work attributed to:
Government Stanley Medical College, Chennai - 600 001. Tamilnadu, India.

Orcid ID:
Ganeshkumar Raja NC - https://orcid.org/0000-0002-2988-8846
Dr. Krithiga Sivakumar - https://orcid.org/0000-0002-1961-3144
Dr. Seenivasan P - https://orcid.org/0000-0003-2993-1936

Source of Support: Nil, **Conflicts of Interest:** None declared.