Research Article

# Social Support as a Mediator between Psychological Maladjustment and Quality of Life Among Patients with Hemodialysis

**Bushra Naz,[1] Muhammad Zohaib Khan,[2] Muhammad Kashif Fida,[3] Azkaa Safdar,[4] Aqeel Asghar[5]**

*[1]Deparment of Psychology, University of Central Punjab, Lahore; [3]Organizational Psychology & Development Department, Center for Assessment, Research and Employees' Evaluation (CARE), ABL - HOL, Lahore; [2,4,5]Department of Psychology, Government College University, Lahore*

## Abstract

**Background:** Kidney problems in Pakistan have become a growing concern, necessitating a closer examination of the factors contributing to the prevalence of renal issues in the country.

**Objectives:** To assess the relationship between psychological maladjustment, social support, and quality of life among patients on hemodialysis.

**Methods:** Correlational research design was used to assess the relationship between the variables. The sample comprised N= 60 hemodialysis patients including (male=32, female=28) with an age range from 28 to 71 years. Informed consents were taken and confidentiality of the responses were ensured. The data were elicited through reliable and valid research instruments. Furthermore, data were analyzed using SPSS-23 and AMOS-19.

**Results:** The mean age of the participants was 48+3.1 years. Psychological maladjustment negatively correlated ($p<.05$) with patients' quality of life and social support. Further, path analysis through structure equational modeling revealed that social support mediated the association between psychological maladjustment and quality of life ($\chi 2/df=1.08$, $p<.05$, CFI=.94, GFI=.93). However, the quality of life in the mediational model appeared to be statistically significantly influenced by the covariates.

**Conclusion:** Research highlights the adaptive functions of social support as a defense mechanism to improve the patient's quality of life and the need to incorporate the belief in developing culturally sensitive intervention programs to enhance the social support and quality of life with hemodialysis patients.

**Corresponding Author |** Bushra Naz, Assistant Professor, Department of Psychology, University of Central Punjab, Lahore
**Email:** nzbushra@gmail.com

**Keywords |** Hemodialysis, Psychological Maladjustment, Quality of Life, Social Support of the Patients

## Introduction

In developing countries like Pakistan, a stressful and sedentary lifestyle and ecological hazards are contributing to the steady increase in End-Stage Renal Disease (ESRD).[1] ESRD is the loss of renal function which is terminal and can be acute or represents a progressive decline of many years.[2] Dialysis is the only way of treatment if the patient does not accept the kidney transplant. Though it does somewhat enhance the chances of survival, the method carries potential limitations that can significantly influence the quality of the recipient's life. The common psychological maladjustments that the

**Production and Hosting by KEMU**
https://doi.org/10.21649/akemu.v23i4.4529

person goes through are anxiety, depression, stress, suicidal tendencies, fatigue, and loneliness.[3] Having social support is a major factor in the betterment of patient's health, and their adherence to the treatment and prescribed precautions. Social support significantly provides aid in terms of improved outcomes and enhanced survival in numerous chronic illnesses such as ESRD.[4]

Depression and anxiety are the most prevalent disorder in patients with ceaseless kidney ailments. Giving up and learning helplessness become a constant part of their lives. The apparent reason for diminished quality of life is poor nutrition which expands the rate of grimness and mortality. Weight diminishment causes fatigue, anxiety and weariness to these patients and makes extended slant to ailments, because of the weakened body supplies of proteins and fat. Besides, rest issues are accounted for as an exceptionally basic issue for patients of dialysis. Well-known psychosocial apprehensions are despondency, instructive level, occupation, marital position, the reliance of a person on patients on the mock kidney machine, nursing staff, family members, and dimension of their coordination.[5] Sexual dysfunction also remains a frequent concern in patients with ESRD which has a significant effect on the relationship with their spouse. Long-term treatment and dialysis experiences have significant limitations on their functioning and living a normal life. Social support provides significant aid in enhancing the quality of life of a patient with dialysis. The patients encounter major life transactions during dialysis and assisting them in making effective use of social relationships, can help them cope with the suffering.[6]

Renal issues are highly devastating and can significantly impact health, particularly in developing nations like Pakistan. It may have far-reaching physical, emotional, and social consequences for the sufferers. To investigate the psychological distress that renal patient on hemodialysis experience and its impact on the quality of their life is imperative. Psychological variables such as depression, anxiety, and distress employ a detrimental influence on the well-being of patients. It also compromised the treatment adherence and overall outcomes of prognosis. Additionally, recognizing the pivotal role of social support in the context of renal diseases is crucial. In this regard, social support has emerged as a vital factor in mitigating the adverse effects of chronic disease and elevating the patients' quality of life. In particular, the significance of social support in the lives of these renal patients on hemodialysis can guide the development of effective procedures and individualized support programs to meet their unique needs. The comprehensive research featuring psychological distress and the importance of social support in renal patients having hemodialysis provides valuable insights, particularly into the challenges a patient could encounter in an underdeveloped county like Pakistan. This study aims to illuminate the distinctive concerns and issues that arise in such a context, fostering a deeper understanding of the psychological consequences and the pivotal role of social support for these patients. The result of this research will enlighten healthcare providers, policymakers, and researchers, enabling targeted reinforcement of treatment and support systems to address the multifaceted requirements of the patients to improve their overall well-being. Eventually, this research endeavor aims to enhance the "Quality of Life" (QOL) of patients and foster treatment adherence in this vulnerable population. By establishing and exploring all such factors, health workers, and the clinician may work better on the sound ground to enhance the quality of life and manage the effects of psychological stress of such patients.

The three hypotheses were tested via statistical analyses. "Psychological maladjustment would be negatively associated with social support and quality of life in hemodialysis patients". "There would be a positive relationship between quality of life and social support among patients with hemodialysis". "Social support would significantly mediate the relationship between psychological maladjustment and quality of life".

In view of the literature, the objectives of the present research were to explore the:

- Relationships of psychological maladjustment, quality of life, and social support in hemodialysis patients.
- Social support as a mediator between psychological maladjustment and patients' quality of life.

## Methods

This study followed cross-sectional research design, a form of correlational research, to examine the inter-

relationships between psychological maladjustment, quality of life, and social support in patients undergoing hemodialysis. The chosen research design is well suited for investigating various data points at a single time, allowing for a comprehensive analysis of the subject under study.[4,7]

The sample consisted of 60 participants (32 male, 28 female) drawn using a non-probability purposive sampling technique. The sample is ranging in age from 28 to 71 years (M=48.31, SD=11.00). The size of the sample was determined using G-power analysis, considering relevant variables to ensure appropriate sample representation[7]. The inclusion/exclusion sample criteria (viz., inclusion criteria= age range between 25 to 75 years, only patients with hemodialysis and exclusion criteria = last stage patients were not included) from the different hospitals and kidney centers of Lahore"(i.e., Nawaz Sharif Medical City n=18, Hemodialysis Unit General Hospital n=14, Dialysis Spa n=13, Kidney Center Garden Town n=09, and Dialysis Centre Sheikh Ejaz Ahmed n=06)."

Ethical approval was obtained from the Ripha Institute of Clinical and Professional Psychology (RICPP) Board of Study and Research Ethics Committee. Afterward, informed consent was obtained from both the participating institutions and the sample then data were collected.

The Depression Anxiety Stress Scale (DASS-21)[8] is comprised of 21-item four-point Likert self-report measures ranging from (0= "did not apply to them at all", and 3=" apply to them very much, or most of the time"). Three subscales of the measure assess different domains (i.e., Depression scale assesses= dysphoria, hopelessness, devaluation of life, self-deprecation, and lack of interest/involvement, anhedonia, and inertia, Anxiety scale assesses= autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious affect, Stress scale assesses= highlight levels of non-chronic arousal through difficulty relaxing, nervous arousal and being easily upset/agitated, irritable/over-reactive and impatient). The reported alpha reliability coefficient estimates for the overall measure and the subscales are DASS-21 (α= 0.90) 8, depression (α= 0.80) 8, anxiety (α= 0.75) 8, and stress (α= 0.76)8.

The Medical Outcome Scale for Social Support (MOS) consists of eighteen items five-point Likert type rating scale 9(1=never, 5=always), having four components such as emotional support (items 3,4,8,9,13,16,17), tangible support (items 2,5,12,15), affection (7,11,14,18) and positive social interaction (7,11,14,18). The reported Cronbach alpha reliability for the measure is (α=.91).

The quality of life scale is a short 5-item scale designed to assess the judgmental component of subjective well-being and quality of life. The seven-point Likert-type rating scale ranges from (7=strongly agree, 1=strongly disagree). The reported alpha reliability for the scale is α=.85.[10]

## Results

Data were analyzed by using Statistical Package for Social Sciences (SPSS) version-23 and Analysis of Moment Structure (AMOS) version-19 and expressed as frequencies, mean standard deviation (M, SD), and percentages. Parametric tests were applied to evaluate the significance of the results. Correlation, multiple regression, and mediational analyses were used to evaluate the significance of the data. Moreover, data were compared and analyzed at a significance level of 0.05.

**Table 1:** *Frequency Distribution of the sample in terms of Demographic Variables, (N =60)*

| Variables | *f* |
|---|---|
| **Duration of Disease** | |
| 1-5 years | 26 |
| 6-10 years | 19 |
| 11-15 years | 09 |
| 16-20 years | 06 |
| **Present Condition of the Disease** | |
| Mild | 01 |
| Moderate | 03 |
| Severe | 56 |
| **Disease Inherited from the Parents** | |
| Yes | 04 |
| No | 55 |
| Don't Know | 1 |
| **Etiology of the Disease** | |
| Use of Drugs | 02 |
| Drinking Alcohol | 02 |
| Due to over Work | 01 |
| Due to Diabetes | 15 |
| Due to Hypertension | 40 |
| **Transplantation of the Kidney** | |
| Yes | 07 |
| No | 53 |

| | |
|---|---|
| **Preferred Treatment Professionals** | |
| Doctor | 40 |
| Hakeem | 16 |
| Homeopathic Doctor | 04 |
| **HCV** | |
| Hepatic Patients | 58 |
| Non-hepatic Patients | 02 |
| **Residential Area** | |
| City | 36 |
| Village | 17 |
| Town | 07 |
| **Marital Status** | |
| Married | 44 |
| Unmarried | 09 |
| Divorced | 02 |
| Widower | 01 |
| Window | 04 |

*Note: f = frequency.*

**Table 2:** *Reliability Analysis of the Research Instruments and their Scales (N= 60)*

| **Research Instruments** | |
|---|---|
| **Depression Anxiety Stress Scale** | .90 |
| Depression | .80 |
| Anxiety | .71 |
| Stress | .76 |
| **MOS Social Support Scale** | .84 |
| Emotional Support | .78 |
| Tangible Support | .77 |
| Affection | .64 |
| Positive Social Interaction | .82 |
| **Quality of Life Scale** | .81 |

***Note: α= Cronbach's alpha Reliability.***

**Table 3:** *Correlation among Psychological Maladjustment, Social Support, and Quality of Life in Patients with Hemodialysis (N=60)*

| **Variables** | 1 | 2 | 3 |
|---|---|---|---|
| 1. Psychological Maladjustment | - | -.260* | -.265* |
| 2. Social Support | | - | .467** |
| 3. Quality of Life | | | - |
| *M(SD)* | 1.40 (0.53) | 80.25 (10.04) | 86.16 (15.27) |

***Note. **p<.001, *p<.05.***

Table 3 indicates the significant negative correlation between the psychological maladjustment of social support and quality of life in patients with hemodialysis. Moreover, a significant positive association was found between social support and quality of life. (Table 3)

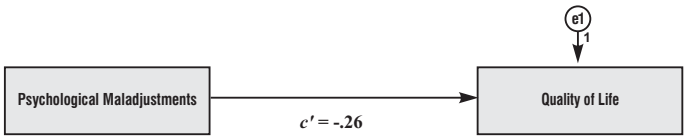


**Figure 1:** *The Direct effect of Psychological maladjustment on Quality among Patients with Hemodialysis*

The figure 1 illustrates the significant (β =-.26, p<.01) direct effect of psychological maladjustment on the patient's quality of life. Furthermore, an increase in psychological maladjustment decreases the quality of life in the patients and vice versa.

Note: ***p < .01, *p < .05, D_D= Duration of Disease, P_C_D= Present Condition of the Disease, D_T= Duration of Treatment, I_T_D= Inheritance of the Disease.*

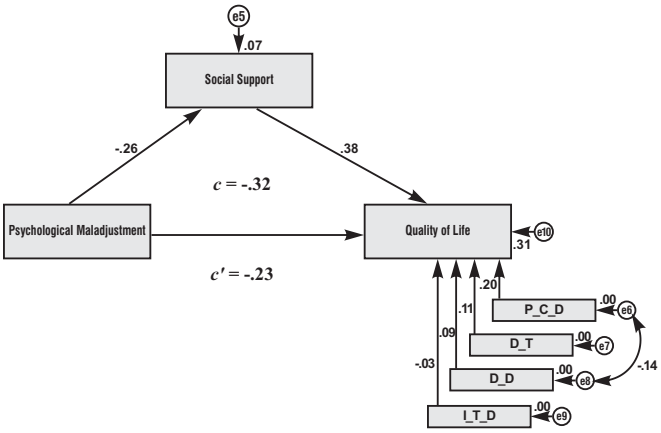


**Figure 2:** *Mediation Analysis: Social Support as a Mediator between the Relationship of Psychological Maladjustment and Quality of Life among the Patients of Hemodialysis*

The standardized mediation model illustrates the significant indirect path coefficient between psychological maladjustment to social support (β = -.26, p<.01), social support to quality of life (β = .38, p<.01), and psychological maladjustment to quality of life (β = -.23, p <.01). However, the standardized indirect effect was (β = -.09, p<.01) after the mediation of social support between the relationship of psychological maladjustment to social support. Additionally, social support significantly mediated the relationship between psychological maladjustment and quality of life (p< .01). Although, the covariates also have an impact on the outcome variable of quality of life (i.e., duration of disease (β = -.09), present condition of the illness (β = .20), course of treat-

ment (β=.11), and inherited transmission of the disease (β =-.03). The mediation analysis has partitioned the total effect of psychological maladjustment on the patient's quality of life c = -.32, into a direct effect ć = -.23 and a mediated effect (-.26×.38) =-.09.11 It means one standard deviation increase in psychological maladjustment, a decrease in quality of life through the mediational effect of social support.

**Table 4:** *Standardized Mediation Model Fit Indices*

| Model | $\chi^2$ | *df* | CMIN | RMSEA | CFI | GFI | TLI |
|---|---|---|---|---|---|---|---|
| Model-Fit Indices | 14.137 | 13 | 1.08 | .03 | .94 | .93 | .90 |

Note. **p<.001, *p<.05= CMIN/DF<3.

The standardized model fit indices indicated that the model is well fitted for the mediation between the relationship of psychological maladjustment and quality of life among hemodialysis patients, $\chi^2$ = 14.137 (df = 13, N = 60), p<.05, RMSEA = .03, CFI = .94, GFI = .93 and TLI = .90. (Table 4) The value of chi-square is significant because of the greater degree of freedom, therefore by dividing the degree of freedom with chi-square ($\chi^2$/df) the deter-mined value is 1.08 which acceptable for model fit.[12,13]

## Discussion

The present study aimed to investigate the relationship between quality of life, psychological maladjustment, and social support among patients going through hemodialysis. The first hypothesis postulated a negative association of psychological maladjustment with social support and quality of life in patients experiencing dialysis. This hypothesis is supported by the result and reinforced by previous research done on the topic.[14,15] People undergoing dialysis experience higher levels of depression, anxiety, and stress. Their lives constantly revolve around dialysis, which has greatly affected their independence and forced them to become severely limited in their engagements. This constraint has grievous effects on their social lives, and just when social support is most needed, it is withdrawn. This absence of social support enhances their already present feeling of depression, stress and anxiety. Whereas, people with a proper support system to rely on experience these symptoms in far less frequency and intensity. Additionally, maintaining these symptoms through social support also promotes adherence to the treatments and amplifies the overall quality of life of the patient. While experiencing these heightened emotions results in a decreased quality of life for the patient.

Another hypothesis proposed a positive relationship between the patients' quality of life and social support. This hypothesis is confirmed by the result and also by various previous research.[16,17] Social support is among the most important factors that assist in maintaining the quality of life of the individual going through hemodialysis. It improves the quality of life by increasing the patient's satisfaction regarding their treatment and by enhancing their adherence to the restricted diet regimen. Having a supportive social system allows the patient to express their apprehensions and stresses openly hence adopting a more careful attitude and improving their coping mechanism. It also encourages them to decrease their hospitalization through vigilant treatment-seeking conduct.

The results proved the last hypothesis stating a significant mediation of social support between psychological maladjustment and quality of life and backed up by former studies.[18,19] The negative association between psychological maladjustment and quality of life has been extensively discussed in the first paragraph. The rate of depression, anxiety, and stress only enhances without proper social support, especially in illnesses.

## Conclusion

A culturally sensitive intervention plan, based on the patient's belief system, is crucially needed to be designed. The community should be involved in the higher prevalence regions for awareness and mitigation of psychological factors. This can contribute to adherence to treatment and ultimately improve the patient's quality of life.

This study would help the medical staff and patients' interpersonal support system understand the intricacies of psychological maladjustment that dialysis patients go through and how their quality of life is affected. It will assist them in developing interventions and techniques that can best help the patient in healthily dealing with these feelings. These interventions can go a long way in enhancing the longevity of the individual.

It is a purely quantitative study; a quality exploration could also be made. A cluster sample from various cities

in Pakistan enlightens more generalizability. A comparison group can also be made with other illnesses. An intervention can also be introduced for those who have mild, moderate, and severe psychological problems.

**Ethical Approval:** The RICPP Board of Studies and Research Ethics Committee approved the study vide Approval No. 115/07319/17

**Conflict of Interest:** The authors declare no conflict of interest.

**Funding Source:** None

**Authors' Contribution:**

**BN:** Conceptualized the idea, contributed to study design, completed the entire article, including introduction, literature, data interpretation and conclusion. performed critical revision of the manuscript. finalize and edited the manuscript before submission

**MZK:** Contributed to the introduction, literature, data collection and data analysis process. interpreted the analysis and formulated the results

**MKF:** Whole concept and study design, writing the entire article including introduction, literature, discussion, conclusion and finalization of manuscript.

**AS:** Literature, study design, result formulation and discussion section. interpreted the analysis and formulated the results.

**MAA:** Literature, study design, result formulation and discussion section. interpreted the analysis and formulated the results. critical revision of the manuscript

## References


1. Ullah K, Butt G, Masroor I, Kanwal K, Kifayat F. Epidemiology of chronic kidney disease in a Pakistani population. SJKDT. 2015;26(6):1307-10.
2. Mandhwani R, Hanif FM, Lail G, Luck NH, Khalid MA, Ul Haque MM, et al. Use of sofosbuvir based regimen in patients with end-stage renal disease and chronic hepatitis C; An open label, non-randomized, single arm, single center study from Pakistan. GHFBB. 2020; 13(2): 141-46.
3. Dabrowska-Bender M, Dykowska G, Zuk W, Milewska M, Staniszewska A. The impact on quality of life of dialysis patients with renal insufficiency. Patient Prefer. Adherence. 2018; 1291(1): 577-83.
4. Fox DE, Quinn RR, James MT, Venturato L, King-Shier KM. Social support in the peritoneal dialysis experience: A qualitative descriptive study. Can. j. kidney health dis. 2020; 7(1): 1-10.
5. Rezaei Z, Jalali A, Jalali R, Khaledi-Paveh B. Psychological problems as the major cause of fatigue in clients undergoing hemodialysis: A qualitative study. Int J Nurs Stud. 2018; 5(1): 262-7.
6. Sitjar-Suner M, Suñer-Soler R, Masia-Plana A, Chirveches-Perez E, Bertran-Noguer C, Fuentes-Pumarola C et al. Quality of Life and Social Support of People on Peritoneal Dialysis: Mixed Methods Research. Int. J. Environ. Res. Public Health. 2020; 12(1):1-15.
7. Shaughnessy JJ, Zechmeister EB, Zechmeister JS. Research methods in psychology. McGraw-Hill; 2000.
8. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behav Res Ther.1995;33(1):335 - 43.
9. Sherbourne CD, Stewart AL. The MOS social support survey. Soc Sci Med. 1991; 32(1): 705-14.
10. Diener ED, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. J Pers Assess. 1985; 49(1): 71-75.
11. Arbuckle J. Amos 17.0 user's guide. SPSS Inc.; 2008.
12. Iftikhar R, Malik F. Translation and validation of Aggression Questionnaire in a Pakistani children cohort. Pakistan J Soc Clin Psychol. 2014; 12(4): 39-45.
13. Hu LT, Bentler PM, Kano Y. Can test statistics in covariance structure analysis be trusted? Psychol. Bull. 1992; 112(5): 351-62.
14. Bujang MA, Musa R, Liu WJ, Chew TF, Lim CT, Morad Z. Depression, anxiety and stress among patients with dialysis and the association with quality of life. Asian J Psychiatr. 2015; 18(5): 49-52.
15. Yucens B, Kotan VO, Ozkayar N, Kotan Z, Yuksel R, Bayram S, et al. The association between hope, anxiety, depression, coping strategies and perceived social support in patients with chronic kidney disease. Dusunen Adam. 2019; 32(2): 43-51.
16. Alexopoulou M, Giannakopoulou N, Komna E, Alikari V, Toulia G, Polikandrioti M. The effect of perceived social support on hemodialysis patients' quality of life. Materia socio-medica. 2016; 28(9): 338-42.
17. Varghese SA. Social support: an important factor for treatment adherence and health-related quality of life of patients with end-stage renal disease. J. Soc. 2018; 44(3):1-8.
18. Masood A, Kamran F, Rashid S, Mazahir S. Life-orientation, subjective well-being and social support as predictors of quality of life in patients with end stage renal disease. Bangladesh J. Med. Sci. 2017;16(4): 346-53.
19. Pan KC, Hung SY, Chen CI, Lu CY, Shih ML, Huang CY. Social support as a mediator between sleep disturbances, depressive symptoms, and health-related quality of life in patients undergoing hemodialysis. PloS one. 2019; 14(1): 1-14.