Original Article

Depression and Marital Discontent among Hemodyalsis Patients and their Spouses in Pakistan

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Abstract

Background: Marital dyad is an interdependent unit, wherein the depression and marital discontent experienced by the patient on maintenance hemodialysis (MHD) influences the non-patient spouse.

Objective: To determine the severity of depression and level of marital discontent among patients on MHD and their spouses and the effect of depression on marital adjustment.

Methodology: This cross sectional study was conducted at Nephrology Department, Mayo Hospital, Lahore from October 2023 to March 2024. Ninety-Four married couples in whom one partner was on MHD for ≥3 months were included in the study. The degree of depression was assessed using Beck Depression Inventory (BDI) whereas marital adjustment was determined using Revised Dyadic Adjustment Scale(RDAS).

Results: Of the 94 couples, 60% patients and 42.5% spouses reported mild to moderate or severe depression, with poor marital adjustment present in 47.8% patients and 44.6% of the spouses. Patient's depression correlated with spousal depression($r=0.655$, $p<0.01$) and RDAS scores of both the patient and their spouse($r=-0.628$, $p<0.01$). In addition, spouse's depression correlated negatively with their own RDAS score. Couples in joint families had lower levels of depression and marital adjustment, as indicated by higher RDAS score.

Conclusion: In this study, degree of depression in patient on MHD showed a strong correlation with depression in non-patient spouse. Severe depression in patients resulted in poor marital adjustment for both the patients and their spouses. Marital discontent and depression in both the patient and spouse were affected negatively by poor socioeconomic conditions and positively by social support in the form of joint family system.

Received: 21-05-2024 | **1st Revision:** 22-10-2024 | **2nd Revision:** 05-02-2025 | **Accepted:** 25-05-2025

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Keywords | Depression, Marital discontent, MHD, RDAS.

How to cite: Qayyum F, Anees M, Perviaz MS. Depression and Marital Discontent among Hemodyalsis Patients and their Spouses in Pakistan. Ann King Edw Med Univ.2025;31(spi2): 174-181.

Introduction

Patients with end-stage kidney disease (ESKD) often face significant physical and emotional challenges due to the chronic nature of the disease. This emotional burden coupled with the demanding treatment regimens can contribute to the development of psychological disorders.[1] Among psychiatric disorders, depression is the most common comorbidity in patients on maintenance hemodialysis (MHD).[1] Research indicates that globally, 29.9 % to 39.5 % of MHD patients experience symptoms of

Production and Hosting by KEMU

https://doi.org/10.21649/akemu.v31iSpl2.5730

2079-7192/

depression, with higher rates in lower-income countries.[2] In Pakistan, studies have reported depression rates as high as 69%[3] among hemodialysis patients, with similar findings across South Asian countries like India (57%)[4] and Nepal (77%).[5] Depression is associated with poorer outcomes, increased hospitalization and dialysis withdrawal.[6]

Psychological stress experienced by the patient can have ripple effects on the mental health of their spouse. Spouses of patients with chronic kidney disease (CKD) experience a significant stress due to the caregiving responsibilities which can lead to somatic symptoms like body aches and even clinical anxiety or depression.[4] This can lead to poorer quality of life, difficulty with sexual adjustments and marital discontent among these couples.[7] Given that marital dyad is an interdependent unit, the emotional distress and marital discontent experienced by the non-patient spouse may influence the patient negatively. The conflict between partners can play a crucial role not only in how patients in a dyadic relationship perceive their well-being but also in their ability to adhere to protracted treatment plans or adapt to challenging circumstance.[7]

While depression has been studied as a comorbidity in dialysis patients, its relation to marital discontent in patients and its impact on their spouses have not been thoroughly investigated. A United States-based study demonstrated that the perception of marital discord was linked to increased mortality among Afro-American patients undergoing MHD.[7] However the relevance of the spouse to marital adjustment was not assessed in that study. Daneker et al showed that spouses of patients with high depression scores were more depressed than those whose partners had low scores. Furthermore the authors identified a notable negative relationship between the level of depressive symptoms in spouses and their marital satisfaction.[8] Similar results were found in an Indian study that showed a direct correlation between depression in patients and depression in their spouses, as well as its linkage with the degree of marital discord in the spouse.[4] All these intricate adaptations within the marital relationship are affected by the social framework, and therefore, the social support provided to these couples can impact their psychosocial well-being and level of adaptation.

Despite the high prevalence of depression and marital discontent in MHD patients and caregivers, there is a lack of systematic research addressing these dynamics within Pakistan. Previous local studies have investigated either depression in MHD patients or caregiver stress but have not examined the interdependent relationship between the mental well-being of both partners .[9,10] This study was conducted to bridge that gap by identifying the prevalence of depression and marital dissatisfaction among both patients on MHD and their spouses.

Methods

This cross-sectional study was conducted at the Hemodialysis Unit in the Nephrology Department of Mayo Hospital, Lahore, spanning from October 2023 to March 2024. Ethical approval was obtained from the Institutional Review Board of King Edward Medical University, Lahore (No 363 RC/KEMU, dated 18th September, 2023).

The study included couples who had been married and living together for more than one year, with one partner undergoing MHD three times a week for at least three months. Patients with a diagnosis of dementia or delirium and those taking antidepressants, interferon or steroids and those undergoing chemotherapy were excluded. Couples with spouses on antidepressants or with any psychiatric condition were also omitted from the study. Ninety-four couples were enrolled in the study through consecutive sampling. Written informed consent was taken at the time of enrollment. Furthermore, relevant demographic variables (sex, education, marital status, employment status, family system, any financial support, history of smoking and addiction) of each patient on MHD and their spouse along with medical profile of patient (including comorbidities, duration of dialysis and its prescription) was recorded. The performa included Beck Depression Inventory (BDI) for assessment of depression and Revised Dyadic Adjustment Scale (RDAS) for assessment of level of marital satisfaction or dissatisfaction. Patients either completed the entire questionnaires themselves or had them read aloud if they had mild visual impairment or were illiterate.

Beck Depression Inventory (BDI) is a reliable

assessment scale to evaluate depression in ESKD patients.[11] It is a 21-question survey, which addresses both the emotional and physical aspects of depression. The Grading of depression was done according to the original cutoff scores defined by Beck et al: Nil (less than 9 depression scale), mild (depression scale 10-15), moderate (16 – 23 depression scale) and severe (24 and above).[11]

Revised Dyadic Adjustment Scale (RDAS) is a self-administered assessment employed among married couples to evaluate satisfaction and adaptations in relationships. It consists of 14 items rated on a psychometric scale ranging from 0 to 5, with a total possible score spanning from 0 to 69. It consists of categories that assess consensus in life choices, satisfaction in the relationship and cohesion between the spouses. This scale provides reliable cutoff scores with a value <48 as measure of marital tension and a value of more than or equal to 48 as marital non-distress.[12]

Results

Ninety-four couples were included in the study. There were 32 (34%) female and 62 (65.6%) male patients with an equal number of spouses. The average age of patients was 48.7 ± 10.5 years and mean duration on dialysis being 3.72 ±3.06 years. The mean age of partners was 46.56 ± 11.07 years, with average duration of marriage being 22.24 ± 1.84 years. Among the 94 patients, 69 (73.4%) were unemployed and 25 (26.6%) were employed with an average monthly income of 103.55 ± 69.58 US dollars. Among them, 51.1% patients had a monthly income below 90US dollars per month.

Depression was found in 60.6% (57 patients, 30 with mild to moderate and 27 with severe depressive symptoms) and mean BDI score was 20.59 ± 11.18. On comparing patient's BDI scores and RDAS score with different parameters, patients with lower income were found to be significantly more depressed and had more marital strain ($p<0.05$). (Table 1) Marital discord as determined by RDAS (<48 score) was found in 47.8% patients with mean score of 46.19 ± 11.7, which was worse in depressed patients as shown by RDAS score ($p<0.05$). Along with this, patient's depression and RDAS were found to be affected by spouse's depression and marital dissatisfaction. ($p<0.05$) (Table 1). In spouses, the documented prevalence of depression was 42.5% (out of 40 spouses, 34 had mild to moderate depression and 8 experienced severe depression) and mean BDI score was 13.4 ± 9.05. Among spouses 44.6% had marital discontent as determined by RDAS with a mean score of 46.41±12.3.

Spouses experiencing depression had markedly higher RDAS scores than those who were not depressed (p value<0.001). Similarly, spouses who had marital distress also demonstrated notably higher BDI scores when compared to spouses without marital distress (Table 2). Depression as well as marital discontent among spouses' was also found to be significantly worse if they had a low income (<90US dollars) or their partner had depression and marital stress. ($p<0.05$) (Table 2). Among our study population, 65% couples were living in a nuclear family and 35% were living in a joint family system. Couples living in a nuclear family unit were found to be significantly more depressed and patient's having more marital stress as compared to couples living in joint families ($p<0.05$). (Table 3)

On Pearson's correlation, patients' BDI scores showed a positive correlation with spouses' BDI ($r = 0.655$, $p<0.01$) and negative relationship with spouses' RDAS score and monthly income ($r=-0.628$, $r = -0.342$ $p < 0.01$ for both). Whereas patients' RDAS scores exhibited a positive correlation with spouses' RDAS scores and monthly income ($r=0,849$ and $r=0.311$ respectively, $p<0.01$) and negatively with spouses' BDI score ($r = -0.709$, $p<0.01$) (Table 4). BDI scores in spouses demonstrated a negative correlation with their monthly income ($r=-0.256$, $p<0.01$) and patients' and their own RDAS score ($r=-0.709$, $r=-0.792$ respectively, $p<0.01$) and positively with patients' BDI scores ($r=0.655$, $p<0.01$). While spouses' RDAS scores correlated negatively with patient's BDI score besides their BDI scores ($r=-0.628$, $r=-0.792$ respectively, $p<0.01$) and positively with patients' RDAS scores ($r=0.849$, $p<0.01$) (Table 4). Our results therefore indicates that spouses experiencing depression exhibited greater marital distress, which correlated with increased depression and marital discontent in the patient.

Table 1: *Comparison of study variables with patients' mean score for BDI and RDAS study.*

Study Parameter	Symptoms of depression				Marital strain		
	Absent, BDI Score 0-13 N= 37	Mild-Mod, BDI Score 14-28. N= 30	Severe, BDI Score 29-63 N= 27	p-value	Absent, RDAS Score>=48 N=49	Present, RDAS Score <48 N=45	p-value
Age of Patient (years)	51.4±10.2	45.7±11.2	48.3±9.5	0.087	49.1±8.9	48.2±12.2	0.691
Duration of Marriage(years)	23.1±10.6	20.9±11.4	22.4±10.6	0.722	3.7±3.2	3.6±2.9	0.955
Monthly income (US dollars)	137.99±75.42	77.79±39.36	84.97±70.03	<0.001	126.3±70.91	78.5±59.52	0.001
Duration of dialysis (years)	4.11±3.4	3.53±2.8	3.41±2.7	0.615	3.7±3.2	3.6±2.9	0.891
Adequacy of dialysis (kt/V)	1.1±0.2	1.2±0.2	1.1±0.1	0.786	1.1±0.1	1.1±0.1	0.693
Serum Albumin	3.6±0.7	3.5±0.5	3.4±0.5	0.362	3.6±0.5	3.4±0.6	0.142
BDI Score of Patient	9.3±2.7	21.4±4	35±4.8	<0.001	14.3±7.8	27.4±10.3	<0.001
BDI Score of Spouse	7.9±6.6	13.2±7.8	21.1±7.5	<0.001	8±5	19.3±8.7	<0.001
RDAS Score of Patient	53.3±6.4	46.4±11.8	36.2±10.4	<0.001	55.4±5.5	36.1±7.7	<0.001
RDAS Score of Spouse	53.9±8.3	45.8±11.1	36.8±11.4	<0.001	55±5.6	37±10.5	<0.001

Table 2: *Comparison of study variables with spouses' mean score for BDI and RDAS study.*

Study Parameter	Symptoms of depression				Marital strain		
	Absent, BDI Score 0-13 N= 54	Mild-Mod, BDI Score 14-28. N= 32	Severe, BDI Score 29-63 N= 8	p-value	Absent, RDAS Score>=48 N= 52	Present, RDAS Score <48 N=42	p-value
Age of Spouse (years)	46.5±10.8	47.2±11.9	44±9.5	0.758	46.6±10.4	46.5±11.8	0.975
Duration of Marriage(years)	21.8±10.7	22.7±11.3	23.2±10.6	0.9	22.6±10.3	21.6±10.5	0.658
Monthly income (US dollars)	122.13±70.85	71.92±38.48	104.57±111.93	0.004	120.76±72.29	82.24±60.34	0.007
Duration of dialysis of patient (years)	4±3.3	3.2±2.6	3.1±2.4	0.418	3.6±10.6	3.8±11.2	0.731
BDI Score of Patient	14.2±8.2	28.1±8.1	33.1±9.7	<0.001	15.3±8.9	27±10.3	<0.001
BDI Score of Spouse	7±3.3	19.2±3.5	33.3±4.1	<0.001	8.3±5.5	19.7±8.6	<0.001
RDAS Score of Patient	52.6±8.5	39.8±9.2	28±5.5	<0.001	53.9±7.2	36.5±8.7	<0.001
RDAS Score of Spouse	53.4±7.4	40.3±9.4	23.5±7.4	<0.001	55.5±4.6	35±8.8	<0.001

Table 3: *Comparison between patients living in joint family and those in nuclear family.*

Study variables	Nuclear Family (N= 61)	Joint Family (N=33)	p-Value
Duration of marriage (years)	23±10.4	20.7±11.5	0.311
Monthly income (USD)	100.71 ±75.21	108.8±58.51	0.593
BDI Score of Patient	22.9±12.2	16.2±7.2	0.005
Spouse's BDI	14.8±9.9	10.8±6.5	0.021
RDAS Score of Patient	44.1±11.9	49.9±10.5	0.041
Spouse's RDAS	44.7±13.5	49.5±8.9	0.07

Table 4: *Correlation of BDI and RDAS between Patient and Spouse*

	Spouse BDI	Spouse RDAS	Monthly income
Patient BDI	0.655*	-0.628*	-0.342*
Patient RDAS	-0.709*	0.849*	0.311*
Spouse BDI	1	-0.792*	-0.256*
Spouse RDAS		1	0.197

*Note: *Significant at p<0.01*

Discussion

Depression is serious, prevalent, readily diagnosed and treatable in MHD patients. However, due to overlapping symptoms of uremia with depression, it is frequently neglected, under-recognized and remains untreated. Our study revealed that a notable 60% of patients experienced moderate to severe depression which was almost comparable with previous South Asian studies conducted in Pakistan (69%),[3] India (57.1%),[4] and Nepal (77%).[1]

While there are multiple factors that contribute to depression in MHD patients, research has shown that marital status plays a significant role.[13] A comprehensive meta-analysis of 169 studies found a strong association between the prevalence of depression and the proportion of CKD patients who are married.[14] One reason for this correlation may be the immense responsibility that comes with sustaining a family. Being married often entails providing both economic and social support to all members of the family, which can be particularly challenging for individuals undergoing dialysis treatment. The financial burden and caregiving demands associated with marriage could potentially contribute to increased stress levels and subsequently higher rates of depression among dialysis patients.

Chronic illness in one spouse can have a significant impact on the non-patient spouse, affecting their emotional wellbeing and marital adjustment.[15] Our findings demonstrated that 42.5% spouses of patients on MHD were depressed. In the framework of a marital dyad, a patient's depression was found to correlate bi-directionally with both their own and their partners' marital discontent and depression in spouse. A highly depressed patient therefore has low marital satisfaction, while also leading to a worsening depression and poor marital adjustment in the spouse. Conversely, a spouse with depression can worsen the depression and marital dissatisfaction in the patient. This two-way relationship between patient and spouse factors has been established by Danekar et al, who concluded that depression and marital adjustment in both partners are interdependent, with one potentially worsening the other.[8] Similarly, Khaira et al replicated the findings in an Indian population and confirming that a couple having an ESKD patient with depression should be seen as a 'depressed unit.[4]

Spouses of patients with ESKD are under a number of stresses like concern about their partner's illness, taking on household and caregiving responsibilities, financial stressors, and emotional burdens all of which contribute to the depressive symptoms and a person's impaired ability to adjust to spouse's illness.[15,16] A poor marital adjustment was found in nearly half of our patients and their spouses (47.8%, 44.6% respectively). There is a two way interaction of spousal adjustment with patient's depression and marital satisfaction. According to the developmental–contextual model of couples coping with chronic illness, a couple's relationship quality can buffer illness-related stress by increasing the likelihood of positive dyadic coping processes.[17] Poor dyadic coping and marital adjustment thus, worsens the emotional impact of the patient's illness on the spouse and the patient both, creating a cycle of emotional distress.

Financial stress is an established risk factor for depression, with the effect being worse in people from low-income countries like Pakistan.[18] An income of 90US dollars is below the minimum wage requirement in Pakistan, which is unable to meet the expenses of a person for one month.[19] Low monthly income (<90US dollars) was associated with depression and marital strain in our study group. The effect of financial status on patient on haemodialysis in Pakistan was described by Islam et al in his study where patients belonging to higher financial class were found to have a better quality of life.[18,20] In a study involving Chinese married couples, Du et al found that low socioeconomic status of husbands (measured by income) was significantly associated with more severe depression in wives and vice versa.[21] This relationship between income and depression could be due to burgeoning costs of treatment, which only worsen over time due to the progressive nature of the illness. Patients undergoing MHD are at risk of developing complications such as infections, vascular access problems, and other health issues that may require additional medical care and expenses. MHD can be time-consuming, often requiring several hours per session multiple times a week which can make it difficult for patients to maintain employment, resulting in loss of income and financial strain.[10]

Lastly, couples residing in joint families exhibited lower levels of depression and had better marital adjustment in our cohort. Joint family systems are believed to nurture stronger bonds between members and provide a support system.[22] Role of social support is highly relevant in marital dyads involving patients on haemodialysis. A strong social support has been shown to lower the risk of depression in spouses, thus decreasing the severity of depression in patients.[8] Pawar et al while studying the effect of social support on married women found that living in nuclear families was associated with worsening of depression. Social support acts like a buffer in marital relations, thus, improving marital satisfaction and protecting against depression.[23] While our findings show that couples residing in joint families experience lower levels of depression and better marital adjustment, some studies present a more nuanced picture. Indian study showed that women may experience better marital adjustment in nuclear families due to reduced household responsibilities and fewer familial conflicts. Conversely, men may benefit more from joint family settings where emotional support is readily available. These findings highlight that family structure influences mental health outcomes differently across genders, suggesting that joint families may not uniformly benefit all members.[24]

Disease outcomes of ESKD patients on MHD depend greatly on the interpersonal adjustments of the patients and their spouses in the marital dyad. Presence of psychological and marital strain in the spouse should make the physicians more attuned to the needs of the caretakers along with the patients. Strategies improving social support and coping skills of the couples could prove beneficial in reducing marital dissatisfaction and consequently, depressive severity in the patients. KDIGO guidelines advocates for the integration of emotional and psychological assessments into management plan for CKD patients.[25] The results of our study highlights the importance of developing comprehensive care strategies that take into account the emotional and relational challenges faced by both patients undergoing MHD and their spouses.

Our study had certain limitations. Our study was confined to a single center and the results might not be representative of all the dialysis patients in our country. Our sample size was relatively small; therefore, there is a need for conducting larger, multi-center longitudinal studies in the future.

Conclusion

Degree of depression in patients on MHD showed a strong correlation with depression in non-patient spouses. Severe depression in patients resulted in poor marital adjustment for both the patients and their spouses. Marital discontent and depression in both the patient and spouse were affected negatively by poor socioeconomic conditions and positively by social support in the form of joint family system. Thus, both spouse and patient must be the focus of intervention in managing depression in order to improve the long-term prognosis of patients with ESKD.

Ethical Approval: The Institutional Review Board, King Edward Medical University, Lahore, Pakistan approved this study vide letter No.363/ RC/ KEMU.

Conflict of Interest: None

Funding Source: None

Authors' Contribution:

FQ: Conception & design, acquisition of data, analysis & interpretation of data, drafting of article

MA: Critical revision for important intellectual content, final approval

MSP: Acquisition of data, analysis & interpretation of data

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