



ANXIETY, DEPRESSION, FAMILY INCIVILITY, AND QUALITY OF LIFE AMONG HEMODIALYSIS PATIENTS

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Abstract

The current study aimed to investigate the relationship between anxiety, depression, family incivility, and quality of life among hemodialysis patients. Predictors of the quality of life were also determined. A correlational research design and survey method were used. Participants (N = 100) were approached through a purposive sampling technique. A demographic information sheet, the Pakistan Anxiety and Depression Questionnaire, the Family Incivility Scale, and the World Health Organization Quality of Life Scale- 26 (WHOQOL-26) were used for data collection. The Cronbach alpha reliability coefficient results show a satisfactory level of internal consistency of the scales. The findings of the person product-moment correlation indicated that anxiety, depression, family incivility, and social relations have a significant positive relationship with high magnitude. In contrast, these variables have a significant inverse relationship with quality of life, physical health, psychological, and environmental factors. Predictive variables accounted for 36 % accumulative variances in the outcome variables, demonstrating that 64 % of unknown variables must be investigated in further studies. Implications of the study have been discussed in the cultural context of Pakistan.

Keywords: Anxiety, depression, family incivility, quality of life, hemodialysis patients

Introduction and Literature Review

Dialysis is a life-sustaining process performed to artificially replicate the functions of the kidneys, which are essential in maintaining the proper balance of fluid, electrolyte, and waste products in the body. In Pakistan, there are numerous contributing factors to dialysis congestive heart failure, hypertension, glomerulonephritis, family history, smoking, obesity, and insufficient access to high-quality healthcare (Hayat et al., 2023).

The World Health Organization (WHO) reported 67,000 dialysis patients in Pakistan in 2015, a 6.1% increase from the year before (WHO, 2015). The majority of patients are middle-aged adults, and men are more likely than women to receive dialysis from low-income families. The exact number of dialysis patients in Pakistan is unknown. However, the prevalence of depression is estimated at 30-45% (Butt et al., 2021), 30-50% (Baldessarini et al., 2005), 9% to 30% (Hossain et al., 2019), and its ratio is rapidly increasing (Smith et al., 2018). Older age, longer duration of dialysis, comorbid medical conditions, and financial strains are precipitating factors that intensify the problem (Jain et al., 2017). Nadort (2020) found that depression was significantly associated with poor quality of life and higher levels of fatigue, pain, and disability among hemodialysis patients. It is linked with poorer adherence to treatment, dissatisfaction with care, and increased mortality rates (Gerogianni et al., 2018).

Dialysis patients also struggle with anxiety as a mental health issue. Its prevalence ranges from 40–50% (Bautovich et al., 2018), from 4% to 32% (Sabapathy et al., 2015), and from 30-50% (Hamdi Elzeiny et al., 2023). It has been linked to increased emotional distress, lower quality of life, and higher mortality rates (Bopaeda, 2022). Genetic factors, previous history, comorbidity, a lack of social support, and insufficient coping mechanisms are predominant features of anxiety (Zeidabadi et al., 2022). Bopaeda (2022) concluded that anxiety was common in this population, with significant implications for their overall well-being and quality of life. Brito et al. (2019) found a significant positive relationship between anxiety, sleep problems, emotional distress, a lower sense of general well-being, and family incivility among dialysis patients. Georgian et al. (2019) results showed that 14 patients (31%) had both anxiety and depression, while 19 patients (42%) had depression and 24 patients (53%) had anxiety.

Family incivility refers to uncivil or disrespectful behavior between family members, often as criticism, sarcasm, and withheld support. It refers to the disrespectful, discourteous, or impolite behavior that individuals exhibit toward family members (Jankowska-Polańska et al., 2017). Studies have reported a significant association between family incivility and the mental health well-being of dialysis patients (Barzegar et al., 2017). Sharma et al. (2020) found that higher levels of family incivility were associated with increased levels of depressive symptoms, anxiety, and psychological distress among hemodialysis patients. Khan et al. (2019) found a significant negative impact of family incivility on dialysis patients' well-being. There is an association between family incivility and higher levels of depression, anxiety, and poorer quality of life among dialysis patients (Elhadad et al., 2020). Zukerman et al. (2023) reported that familial hostility was associated with an increased risk of depressive symptoms, anxiety, and poor quality of life among dialysis patients. While supportive family relationships were significantly associated with better mental health outcomes and reduced levels of anxiety and depression (Goyal et al., 2018). Halili et al. (2021) found that patients on dialysis experienced significantly higher levels of depression and anxiety than the general population. They have a significantly lower quality of life than the general population (Auneau-Enjalbert et al., 2020). Alshraifeen et al. (2020) found that family incivility was more common among dialysis patients, which could further contribute to poorer quality of life and higher levels of depression and anxiety. Khan et al. (2019) explored the relationship between anxiety and social support among dialysis patients. The findings suggested that higher levels of social support were associated with lower levels of anxiety. Positive social support helped them to reduce depressive symptoms and improve their quality of life.

Quality of life is a critical aspect of overall well-being and is influenced by physical health, emotional well-being, and social functioning (Sallam et al., 2022). Dialysis patients often experience a decline in quality of life due to chronic physical symptoms, emotional distress, and limitations in their daily activities (Khorramabad, 2022). Studies have shown that depression, anxiety, and family incivility negatively impact the quality of life of dialysis patients (Norozi Firoz et al., 2019). Individuals who experience family incivility are more likely to report higher levels of depression, anxiety, and poorer quality of life, resulting in poor adherence to dialysis appointments and coping with dialysis-related stressors, treatments, and dietary restrictions (Motalebi et al., 2022; Movahedi et al., 2023).

The impact of depression, anxiety, and familial hostility on the quality of life of dialysis patients cannot be underestimated. These mental health disorders impact not only the patient's emotional well-being but also their physical health, and treatment adherence can be compromised. The above-mentioned scientific literature review suggests that it is essential to investigate the relationship between anxiety, depression, family incivility, and quality of life among hemodialysis patients, including finding out the predictors of their quality of life by keeping in contact with the cultural context of Pakistan. Therefore, the following objectives are formulated for the current study:

Objectives

- To find out the relationship between anxiety, depression, family incivility, and quality of life among hemodialysis patients.
- To find out the predictors of quality of life among hemodialysis patients.

Hypotheses

- There will be a significant positive relationship between anxiety, depression, and family incivility among hemodialysis patients.
- There will be a significant inverse relationship between anxiety, depression, family incivility, and quality of life among hemodialysis patients.
- Anxiety, depression, family incivility, and demographic variables will significantly predict the quality of life among hemodialysis patients.

Method

The purpose of the current study was to determine the relationship between mental health problems (anxiety- depression), family incivility, and quality of life among hemodialysis patients. Predictors of the quality of life were also identified. A correlation research design and survey method were used.

Sample

The sample size consisted of $N = 100$ hemodialysis patients computed through G* power 3.1.9.2 online calculator with medium effect size from high (.50), medium (.30), and small (.10) with 95% confidence interval. A purposive sampling technique was used to select the sample. Volunteer individuals with chronic kidney disease in stages 4 and 5 have dialysis three times a week, and those above 18 years of age of both genders having comprehension of the problem were included in the study. Participants' mean age was 46.01 and 14.13 standard deviation and the onset of age at the time of the problem ($M = 40.62$, $SD = 14.73$) with an equal gender distribution. Their education varied from illiterate (74) to intermediate (26), and the mean of the duration of marriage was 23.57, $SD = 12.60$ with a family monthly income of 17917.6 (M) and 25563.45 (SD), 12 belonged to rural areas and rest of were from the city. Their diagnosis was kidney (renal) infection – pyelonephritis (92), comorbidity with BP-Sugar and uric acid (8) with multiple stages of the problem ($M = 4.91$, $SD = 0.288$). The causes of their problem were high blood pressure (35), BP-Sugar (27), kidney stones (21), and Hepatitis (17). At the same time, 85 patients have a genetic predisposition to the problem, and 67 have comorbidity with mental health problems (depression-anxiety).

Demographic Information Sheet

A personal information form was used to register the demographic characteristics of the participants, who were categorized into three sections: 1 (personal data), 2 (information related to family), and 3 (facts about the current problem).

The Pakistan Anxiety and Depression Questionnaire

The Pakistan Anxiety and Depression Questionnaire (Mumford et al., 2005) consisted of 30 items with two subscales named depression (1-15 items, $\alpha = .92$) and anxiety (16-30 items, $\alpha = .90$) with dichotomous response format ranging from 1 = yes and 2 = no. Cronbach alpha reliability coefficient on the current sample was found to be excellent.

Family Incivility Scale

Family Incivility Scale (Lim & Tie, 2014) is a unidimensional and six positively worded items ($\alpha = .93$) measure with a five-point Likert response format ranging from 1 = *not at all* to 5 = *many times*. Composite scores on the scale with a high range indicate a low level of family support and a high level of family hostility. In contrast, low scores mean high familial support and low family incivility.

World Health Organization Quality of Life Scale- 26 (WHOQOL-26)

World Health Organization Quality of Life Scale (WHO, 2000) has 26 items (three items with reverse scores, 3, 4, and 6) having four subdomains: Physical health (item number 3, 4, 10, 15, 16, 17, and 18, cut of score = 28, $\alpha = .83$), psychological (item number 5, 6, 7, 11, 19, and 26, cut of score = 24, $\alpha = .86$), environmental (item number 8, 9, 12, 13, 14, 23, 24, and 25, cut of score = 32, $\alpha = .88$), and social relationships (cut of score = 12, $\alpha = .83$). Item number one and two measures the individual's overall perception of quality of life and health. It has a five-point Likert response format: 1 = *not at all*, 2 = *a little*, 3 = *moderately*, 4 = *mostly*, and 5 = *completely*. Cut scores were determined through mean; high scores indicate a high quality of life, and low scores mean a low quality of life.

Procedure

Permission from the Institutional Review Board of Lahore School of Behavioural Sciences, The University of Lahore, Lahore-Pakistan to conduct the study, authors to use the study scales, and higher authorities of government tertiary care hospitals of Lahore for data collection were sought. Written and verbal informed consent were taken from the volunteer participants after ensuring confidentiality, anonymity, and rights of participants by explaining the study ethics and objectives. The data was collected through a booklet consisting of a demographic form, the Pakistan anxiety and depression questionnaire, the family incivility scale, and the World Health Organization Quality of Life Scale-26 (WHOQOL-26). Participants were individually approached to fill out the questionnaires through the paper-pencil method, and it took 20 to 25 minutes on average to complete and return. Data were visually screened before being entered into the IBM SPSS Statistics (version 27), and seven forms were discarded due to missing data, creating sealing and floor effects and pattern formation. Three forms were excluded after running the normality test to eliminate the outliers, and the final analysis was run on the data of a hundred participants.

Table 1 Psychometric Properties of the Anxiety, Depression, Family Incivility, and Quality of Life Scales ($N = 100$)

Variables	<i>k</i>	α	Actual	Potential	<i>M</i>	<i>SD</i>	Skew	Kurt
Anxiety	15	.90	10-24	15-30	10.45	4.22	.31	-.33
Depression	15	.92	11-25	15-30	11.48	4.22	.09	-.28
Family Incivility	6	.93	6-28	6-30	13.44	5.47	.51	-.26
Quality of Life	26	.90	47-105	26-130	75.15	12.76	.17	-.46
Physical Health	7	.83	14-32	7-35	21.47	3.53	.35	.06
Psychological Factors	6	.86	10-25	6-30	17.13	3.59	.08	-.72
Social Relationship	3	.88	2-9	3-15	4.19	2.12	.31	-.37
Environmental Factors	8	.83	10-37	8-40	21.71	5.67	.31	-.33

K = total number of items, *M* = Mean, *SD* = Standard Deviation, *Skew* = Skewness, *Kurt* = Kurtoses

Table 2 Inter-correlation between Anxiety, Depression, Family Incivility, and Quality of Life among Hemodialysis Patients ($N = 100$).

Variables	2	3	4	5	6	7	8
1. Anxiety	.47**	.23*	-.44**	-.27**	-.25*	.43**	-.36**
2. Depression		.19	-.38**	-.02	-.19	.58**	-.34**
3. Family Incivility			-.36**	-.18	-.17	.17	-.34**
4. Quality of Life				.67**	.67**	-.48**	.89**
5. Physical Health					.29**	-.26**	.46**
6. Psychological Factors						-.35**	.43**
7. Social Relationships							-.43**
8. Environmental Factors							

*** $p < .001$, ** $p < .01$, * $p < .05$ (2-tailed).

The findings of Table 1 show a significant positive relationship between anxiety, depression ($r = .47$, $p < .001$), family incivility ($r = .23$, $p < .03$), and social relationships ($r = .43$, $p < .03$). At the same time, these variables have a significantly inverse relationship with quality of life ($r = -.44$, $p < .001$), physical health, psychological factors, and environmental factors.

Table 3 Predictors of Quality of Life among Hemodialysis Patients (N=100)

Outcome Variables		Predictive Variables	B	SE	B	t	p	R	R ²
Quality of Life	Constant		86.88	3.59		24.66	.000	.43	.18
	Family Incivility		-.99	.24	-.42	-4.12	.000		
	Constant		93.78	4.02		23.38	.000	.52	.27
	Family Incivility		-.79	.27	-.38	-3.32	.001		
	Anxiety		-.97	.30	-.37	-3.19	.003		
	Constant		91.55	4.07		22.46	.000	.58	.31
	Family Incivility		-.89	.23	-.37	-3.69	.000		
	Anxiety		-.89	.29	-.30	-3.05	.004		
	Education		1.38	.68	.20	2.06	.043		
Physical Health	Constant		23.49	.96		24.34	.000	.28	.08
	Anxiety		-.22	.08	-.28	-2.59	.011		
Psychological Health	Constant		19.48	1.08		17.97	.000	.30	.09
	Family Incivility		-.20	.07	-.30	-2.77	.007		
Social Relationships	Constant		3.02	.30		10.11	.000	.57	.36
	Depression		.25	.04	.571	6.12	.000	.42	
Environmental Factors	Constant		26.878	1.540		17.449	.000		.18
	Family Incivility		-.428	.105	-.421	-4.076	.000		
	Constant		25.625	1.518		16.885	.000	.58	.29
	Family Incivility		-.476	.101	-.469	-4.719	.000		
	Education		.915	.297	.306	3.078	.003		

Durbin-Watson's statistics results demonstrated that the data met the regression analysis's assumptions, ranging from 1.90 with values lower than one and above 3. The findings of stepwise regression analysis indicate that family incivility (model 1, $R^2 = .18$, $F(1, 99) = 16.82$, $P < .000$), anxiety (model 2, $R^2 = .27$, $F(2, 98) = 14.23$, $p < .000$), and education (model 3, $R^2 = .31$, $F(3, 97) = 11.31$, $p < .000$) predicted the quality of life and retained three model factor structures which accounted for 31 % accumulative variances which mean 69 percent unknown factors that can predict the quality of life among hemodialysis patients. As outcome variables, physical health, psychological, and social relations retained a one-factor model structure. Anxiety (model 1, $R^2 = .08$, $F(1, 99) = 6.73$, $P < .01$), family incivility (model 1, $R^2 = .09$, $F(1, 99) = 7.54$, $P < .007$), and depression (model 1, $R^2 = .18$, $F(1, 99) = 37.27$, $P < .000$) has been the predictive variables respectively. Moreover, environment as an outcome variable retained the two-model factor structure while family incivility (model 1, $R^2 = .18$, $F(1, 99) = 16.61$, $P < .000$) and education (model 2, $R^2 = .29$, $F(1, 99) = 13.96$, $P < .000$) are the predictive variables. Interestingly, the model of social relations accounted for 36 % variance and environmental 29 % accumulative variance, respectively. The beta and t-test values show that the relationship's magnitude is satisfactory.

Discussion

The current study unfolded the relationship between anxiety, depression, family incivility, and quality of life among hemodialysis patients, including investigating the predictors of quality of life. Results supported the first two hypotheses that there is a significant positive relationship between anxiety, depression, and social relations, and these variables have an inverse relationship with quality of life, physical health, and psychological and environmental factors. Schouten et al. (2019) found that death anxiety and depression were high among hemodialysis dialysis patients in the Netherlands. Goyal et al. (2018) found a significant positive relationship between chronic dialysis, quality of life, depression, and anxiety among hemodialysis patients. Samoudi et al. (2021) reported that mental health problems (stress, anxiety, and depression) were positively associated with low quality of life

among patients with end-stage renal disease. Fradelos (2020) illustrated a significant positive relationship between low socioeconomic conditions, mental health problems, and low quality of life among hemodialysis patients. Senanayake et al. (2020) found moderate to severe levels of depression, and it has a positive relationship with demographic variables among patients with kidney disease. Ramasubramanian et al. (2015) found a significant positive relationship between psychiatric morbidity and demographic variables among patients on hemodialysis. The same results were reported by Naderifar et al. (2018) on depression, treatment adherence, demographics, and quality of life.

The findings of the present data supported that depression, anxiety, and family incivility predicted the poor quality of life among hemodialysis patients. Goyal et al. (2018) found a relationship between behavioral, anxiety, adjustment, and depressive disorders among psychiatric morbidity patients undergoing dialysis. Kumar et al. (2018) reported that mental health morbidity (anxiety and depression) existed among hemodialysis patients. Nabolsi et al. (2013) reported that these variables predicted the quality of life of hemodialysis patients. Brito et al. (2019) found that depression and anxiety were predictors of quality of life among dialysis patients. Bakewell et al. (2002) concluded a longitudinal study on the patients receiving peritoneal dialysis and reported that overall quality of life (QOL) decreased during the two-year study period. Alshelleh et al. (2022) found a significant relationship between disease acceptance and quality of life among patients with kidney disease. Nagasawa et al. (2018) found that patients' social quality of life was poor, and they suffered from mental health problems. Mousa et al. (2018) found a link between low health-related quality of life, low education, a high number of concurrent diseases, and low self-efficacy among dialysis-related factors. Depression, anxiety, family incivility, and quality of life are all contributing factors that significantly impact the lives of individuals with hemodialysis treatment. Hence, the similarity of results with previous literature reflects the psychological nature of disease cross-culturally.

Conclusion

The results of this investigation showed a strong positive correlation between family incivility, depression, anxiety, and social relationships. At the same time, these variables have an inverse association with the quality of life, physical health, and psychological and environmental factors of hemodialysis patients. Depression, anxiety, family incivility, and education predicted quality of life, physical health, psychological, and environmental factors, including social relationships among hemodialysis patients. It is interesting to note that social relationships explained 36% of the variation, cumulative quality of life scores 31%, and environmental variables 29%. In future research, social and environmental aspects should receive significant attention to address the issues that hemodialysis patients face.

Future Directions

The findings have demonstrated the impact of depression, anxiety, and family incivility challenges faced by dialysis patients. More research is needed to look at the longitudinal trends, qualitative aspects of problems, and potential solutions to improve their mental health outcomes. Antidepressant medications, relaxation techniques, cognitive-behavioral therapy, and supportive counseling have been shown to effectively ameliorate the depressive symptoms of dialysis patients in Western nations (Wu et al., 2015). Research of this kind ought to be conducted indigenously to improve dialysis patients' quality of life.

Practical Implication

Depression, anxiety, family incivility, and quality of life are interconnected factors that influence the well-being of dialysis patients. The relationship between these conditions is complex and multifaceted. The increasing prevalence of dialysis patients in Pakistan poses several challenges to the healthcare system, including limited access to quality treatment services, a shortage of trained professionals, and the high cost of procedures hindering early detection and treatment of hemodialysis. Personal and social factors related to depression, anxiety, family incivility, and quality

of life among dialysis patients worsen the situation (Hussain et al., 2015). Therefore, there is a dire need to make extensive changes to improve the healthcare system and to introduce psychological intervention plans for the patients and caregivers of hemodialysis patients. By addressing these mental health concerns, healthcare professionals can enhance the overall quality of life and improve the lives of dialysis patients. It is imperative to promote awareness, early detection, and preventive measures for CKD, strengthen healthcare infrastructure, and improve access to quality dialysis services nationwide (Al Naamani et al., 2021).

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