

Quality of life among dialysis patients: Predictive analysis of illness intrusiveness and spiritual beliefs

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Abstract

Objective: To investigate the predicting effect of illness intrusiveness and spiritual belief determining dialysis patients' quality of life.

Method: The correlational study was conducted from September 2018 to July 2019 in Rawalpindi and Islamabad, Pakistan, and comprised adult patients of either gender experiencing dialysis issues for one year at the Pakistan Institute of Medical Sciences, the Pakistan Kidney Patients Association, the Islamabad Dialysis and Nephro Care Centre, the Bahria International Hospital and the Shifa Hospital Kidney Centre. Data was collected using the Illness Intrusiveness Scale, the Daily Spiritual Experience Scale, the World Health Organisation Quality of Life Scale, and a demographic sheet. Data was analysed using SPSS 23.

Results: Out of 200 patients, 116(58%) were males and 84(42%) were females. Female patients had higher mean values for illness intrusiveness value 62.08 ± 14.47 , spiritual belief 33.45 ± 14.75 psychological health 18.00 ± 3.88 and environmental health 25.15 ± 4.93 . Male dialysis patients had higher mean values for physical health 19.11 ± 7.51 and social relationship 10.50 ± 2.45 . Illness intrusiveness was a significant negative predictor of physical health ($p < 0.000$), psychological health ($p < 0.001$), social relationship ($p < 0.000$) and environmental health ($p < 0.05$). Spiritual belief was a significant positive predictor of physical health ($p < 0.01$), psychological health ($p < 0.001$), social relationship ($p < 0.05$) and environmental health ($p < 0.05$).

Conclusion: High level of illness intrusiveness in dialysis patients tended to decrease life quality. Those having a higher level of spiritual belief tended to develop a better approach to life quality.

Keywords: Illness intrusiveness, Spiritual beliefs, Physical health, Psychological health, Social relationship, Environmental health, Dialysis patients. (JPMA 72: 1294; 2022) **DOI:** <https://doi.org/10.47391/JPMA.1457>

Introduction

Health is vital to improving the overall quality of life (QOL), and healthy kidneys are vital for maintaining general health and balance. Healthy kidneys perform various important functions for the human body. One of the most important functions of kidneys is to excrete waste products from the body and to maintain blood pressure (BP). Kidney failure results from chronic kidney disease (CKD) and indicates that the kidneys have lost 85-90% of their functionality and are no more capable of performing their job well enough to keep a person alive. In the case of kidney failure, dialysis is used as a treatment option. Dialysis can be mainly divided into haemodialysis, which is the cleaning of blood through artificial kidney, and peritoneal dialysis, which is the cleaning of blood inside the body.¹

Recent research on dialysis patients revealed that these patients are increasing in number with an annual rate of 10% around the globe. The dialysis patients represent complex medical issues with a high rate of morbidity and mortality. Millions of people suffering from CKD die every

year. In 1990, CKD was ranked 27th among the major causes of death worldwide, and in 2010 it had moved to 18th. According to an estimate, around 2 million people are receiving dialysis treatment worldwide.² In Pakistan alone 20,000 people die out of kidney diseases every year, and the country is ranked # 08 in kidney diseases prevalence ratio. According to an estimate in 2017, 38% female and 62% male population in Pakistan was undertaking dialysis treatment. Although the rate at which kidney diseases are growing in Pakistan and the rest of the world is alarming, experts agree that if diagnosed early, such diseases can be treated and the alarming death rate due to kidney diseases can be controlled.³

Illness intrusiveness (II) refers to the extent to which an illness and its treatment distort a person's interests and activities. A person's experience with a chronic illness may include fear of death, dependency on medication, travel limitations, diet restrictions, economic burden, or social embarrassment.⁴ All such experiences may disrupt the overall lifestyle of a person. Thus, the change in life brought about by a chronic illness impacts the overall QOL.⁵ The QOL encompasses the extent to which a person evaluates goodness in various aspects of life, including satisfaction with personal and professional relationships, and their emotional reactions to the sense of life and overall life

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occurrences. The body of research conducted in this area revealed that physical diseases or chronic illnesses are negatively correlated with QOL. Literature shows that people suffering from a chronic illness experience poor QOL and vice versa.⁶ According to some experts, another important factor that can determine QOL is spirituality. Spirituality refers to a struggle for connection to nature, self, and others. Spiritual belief (SB) refers to the reality of spiritual, supernatural, or mythological aspects of a religion. Different researches conducted on cancer patients and patients having brain injuries revealed that spiritual beliefs are significantly associated with QOL and treatment. SBs were found to be significantly associated with social and relational wellbeing and better QOL.⁷⁻⁹ Indigenous research identified that hope and spiritual wellbeing have no relationship with dietary plans among dialysis patients.¹⁰ Another indigenous research also showed that religiously-inclined professionals are higher on spiritual health compared to non-inclined professionals.¹¹ Recent research identified that patients perceive dialysis as a better option, but the QOL of dialysis patients is badly affected.¹²

The present study was planned to investigate the effect of II, SBs and QOL among dialysis patients.

Subjects and Methods

The correlational study was conducted from September 2018 to July 2019 in Rawalpindi and Islamabad, Pakistan, after approval from the ethics review committee of Foundation University, Rawalpindi. The sample was raised using purposive sampling technique from the Pakistan Institute of Medical Sciences (PIMS), the Pakistan Kidney Patients Association (PKPA), the Islamabad Dialysis and Nephro Care Centre (IDNCC), the Bahria International Hospital (BIH) and the Shifa Hospital Kidney Centre (SHKC) after taking permission from the respective authorities. The sample was calculated using Solvins formula having 0.5 % margin error.¹³ Those included were adult patients of either gender experiencing dialysis issues for one year. Patients with severe medical conditions and psychological issues were excluded. Data was collected after taking informed consent from the subjects. In addition to a demographic

sheet, the study instruments included the 13-item Illness Intrusiveness Scale (IIS)¹⁴ which assesses the changes of illness and treatment-related lifestyle disruptions that interrupt individual life patterns. The scale is specifically validated for patients suffering from last-stage renal disease, schizophrenia, types of cancer, and osteoarthritis. The self-report instrument is rated on a scale from 1-7 ranging from the highest to the worst. The score range of the scale is 13-91. The calculated alpha reliability of the scale was satisfactory at 0.92. The Daily Spiritual Experience Scale (DSES)¹⁵ was used to measure spiritual experiences of the dialysis patients. The scale is a 16-item self-report measure designed to assess a patient's relation with the transcendent in daily living experiences. The scale is scored on a 6-point rating, with responses ranging from 1=many times a day to 6=never. The current alpha reliability of the scale was satisfactory at 0.84. The third scale used was the World Health Organisation Quality of Life (WHOQOL) scale.¹⁶ The scale helps to measure four sub-domains, namely physical health 7 items, psychological health 6 items, social relationships 3 items, and environmental health 8 items. It is scored on a 5-point rating scale, with responses ranging from 1 to 5. The alpha reliability of the scale ranged from 0.78 to 0.92.

Data was analysed using SPSS 20. The relation between the variables was determined using a correlation coefficient. The demographic differences were determined using a t-test, and to test the predictive effect, multiple regression was employed. $P < 0.05$ was considered significant.

Results

Out of 200 patients, 116(58%) were males and 84(42%) were females. There were 33(16.5) patients age 20-30 years, 58(29%) aged 31-40 years, 65(32.5%) aged 41-50 years, 32(16%) aged 51-60 years and 12(6%) were aged 61-70 years.

II was negatively and SB was positively correlated with QOL in terms of physical health, psychological health, social relationship environmental health ($p < 0.05$ each). There was no correlation between II and SB ($p > 0.05$). Female patients had higher mean values for illness intrusiveness value

Table-1: Descriptive data, gender difference and correlation among illness intrusiveness (II), spiritual beliefs (SBs) and quality of life (QOL) (n=200).

Variables	1	2	3	4	5	6	7	M±SD	Male	Female
									n = (116) M±SD	n = (84) M±SD
II	-	0.34***	-0.26**	-0.37**	-0.32**	-0.25**	-0.29**	81.36±16.85	58.11±14.87	62.08±14.47
SB		-	-0.02	-0.18*	-0.16*	-0.25**	-0.24**	59.78±4.79	30.60±9.12	33.45±14.75
pH			-	0.80***	0.53**	0.24**	0.41**	31.8±11.86	19.11±7.51	18.94±4.87
PsH				-	0.81***	0.54**	0.78**	19.04±6.52	17.99±4.23	18.00±3.88
SR					-	0.46**	0.62**	17.99±4.08	10.50±2.45	9.89±2.43
EH						-	0.47**	10.25±2.45	24.43±5.26	25.15±4.93

CI: Confidence interval, PH: Physical health, PsH: Psychological health, SR: Social relationship, EH: Environmental health. * $p < 0.05$, ** $p < 0.01$.

Table-2: Linear regression of illness intrusiveness on quality of life (n=200).

Variables	Physical Health		Psychological Health		Social Relationship		Environmental Health	
	B	95 % CI	B	95 % CI	B	95 % CI	B	95 % CI
Constant	33.46	[24.74, 29.29]	23.34	[11.43, 15.33]	28.21	[15.66, 20.77]	24.47	[19.32, 23.45]
Illness intrusiveness	-0.323	[-0.17, -.05]	-0.283	[-0.773, -2.34]	-0.378	[-1.36, -2.41]	-0.152	[-0.419, -.085]
R2	0.225	0.123	0.234	0.155				
F	12.67	7.66	7.89	9.56				

CI: Confidence interval; * $p < 0.05$, ** $p < 0.01$ **Table-3:** Linear regression of spiritual belief on quality of life (n=200).

Variables	Physical Health		Psychological Health		Social Relationship		Environmental Health	
	B	95 % CI	B	95 % CI	B	95 % CI	B	95 % CI
Constant	27.16	[4.67, 7.23]	18.34	[12.23, 18.34]	20.44	[-8.98, 9.34]	18.22	[10.76, 12.90]
Spiritual belief	0.234	[-.09, -1.34]	0.356	[-0.004, -0.112]	0.167	[-0.154, -1.34]	0.159	[-0.345, -1.89]
R2	0.134	0.223	0.183	0.178				
F	15.26	7.78	10.88	19.12				

CI: Confidence interval; * $p < 0.05$, ** $p < 0.01$

62.08±14.47, spiritual belief 33.45±14.75 psychological health 18.00±3.88 and environmental health 25.15±4.93. Male dialysis patients had higher mean values for physical health 19.11±7.51 and social relationship 10.50±2.45 (Table 1).

It was a significant negative predictor of physical health ($p < 0.000$), psychological health ($p < 0.001$), social relationship ($p < 0.000$) and environmental health ($p < 0.05$) (Table 2). SB was a significant positive predictor of physical health ($p < 0.01$), psychological health ($p < 0.001$), social relationship ($p < 0.05$) and environmental health ($p < 0.05$) (Table 3).

Discussion

The current study tested the behavioural model based on the predictive effect of II and SB on QOL among dialysis patients. II was negatively related to the QOL subtypes of physical health, psychological health, social relationship, and environmental health, and II was a significant factor affecting the patient's QOL in terms of interest and life activities. Kurpas et al.⁵ highlighted that illness acceptance and change in lifestyle due to illness were strongly predictors of QOL in chronic patients. A higher level of illness acceptance tends to enhance the ability of self-reliance and self-esteem in chronic patients that increase their ability to cope with dialysis conditions and treatment procedures.¹⁷ Lifestyle patterns among these chronic patients were explored in a cross-sectional study in China which found that negative lifestyle changes, such as higher levels of smoking and alcohol drinking, negatively affected the health-related QOL.¹³

Further, the current study revealed that SB tended to enhance QOL. Visser et al.¹⁸ in the recent review of cancer patients highlighted that a high level of spirituality tended

to expand QOL. Koenig et al. tested the physiological effects of spirituality and religion and proved that a higher level of spiritual and religious beliefs could have a strong influence on the cardiovascular and immune systems, lowering blood pressure, increasing lipid profile and enhancing the resistance strength for chronic illness.¹⁹ Another study¹⁹ found that a higher level of positive religiosity tended to increase the overall level of global health.

The current study also showed that female dialysis patients were higher on II and SB, which is in line with literature.^{1,20,21} The greater affiliation with religious activities, more time committed to religious tasks (30% versus 21%) leads to more belief in life after death.²¹⁻²³ Researchers have explored the outcome of religious activities on health outcomes among different populations, such as patients suffering from serious chronic illnesses, such as cancer, cardiac issues, lung disease human immunodeficiency virus . acquired immunodeficiency syndrome ((HIV/AIDS),²⁴ kidney failure, brain tumour²⁵ and stroke.^{25,26} Another study highlighted that a high level of religiosity and SB leads to improvement in overall QOL among cancer patients.^{27,28}

Conclusion

Dialysis patients having a higher II level tended to have decreased QOL. A higher level of SB in the patiented helps them enhanced the QOL.

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References

1. Institute for Health Metrics and Evaluation (IHME). Findings from the Global Burden of Disease Study 2017. Seattle, WA: IHME, 2018.
2. Naqvi SAJ. Nephrology services in Pakistan. *Nephrol Dial Transplant* 2000; 15: 769-71.
3. Musa AS, Pevalin DJ, Al Khalailah MAA. Spiritual well-being, depression, and stress among hemodialysis patients in Jordan. *J Holist Nurs* 2018; 36: 354-65.
4. Jin Wen, Kang Li, Wang Y. The effect of peer support group on illness intrusiveness in patients undergoing hemodialysis. *Biomed Res* 2017; 46: 119-20.
5. Gibson EL, Held I, Khawnekar D, Rutherford P. Differences in knowledge, stress, sensation seeking and locus of control linked to dietary adherence in hemodialysis patients. *Front Psychol* 2016; 7: 1864.
6. Megari K. Quality of Life in Chronic Disease Patients. *Health Psychol Res* 2013; 1: e27.
7. Yazawa M, Kido R, Ohira S, Hasegawa T, Hanafusa N, Iseki K, et al. Early mortality was highly and strongly associated with functional status in incident Japanese hemodialysis patients: A Cohort study of the large national dialysis registry. *PLoS One* 2016; 11: e0156951.
8. Homaie Rad E, Mostafavi H, Delavaris S, Mostafavi S. Health-related quality of life in patients on hemodialysis and peritoneal dialysis: a meta-analysis of Iranian studies. *Iran J Kidney Dis* 2015; 9: 386-93.
9. Turkmen K, Erdur FM, Guney I, Garry H, Adam S, Phillip W et al. Sleep quality, depression, and quality of life in elderly hemodialysis patients. *Int J Nephrol Renovasc Dis* 2012; 5: 135-42.
10. Musavi Ghahfarokhi M, Mohammadian S, Mohammadi Nezhad B, Kiarsi M. Relationship between spiritual health and hope by dietary adherence in haemodialysis patients in 2018. *Nurs Open* 2019; 7: 503-11
11. Aslam A, Ahmer Z, Fatima Aftab M, Ahmed A. Spiritual health among pakistani religious and non-religious professional: a comparative cross-sectional study highlighting the role of regional beliefs and practices. *Adv Mind Body Med* 2020; 34: 18-24.
12. Iqbal MS, Iqbal Q, Iqbal S, Ashraf S. Hemodialysis as long term treatment: Patients satisfaction and its impact on quality of life. *Pak J Med Sci* 2021; 37: 398-402.
13. Mir RZ, Arouj K. Effect of emotional regulation on depression, anxiety and stress among cardiac patients. *Rawal Med J* 2019; 44: 461-4.
14. Devins GM. Using the illness intrusiveness ratings scale to understand health-related quality of life in chronic disease. *J Psychosom Res* 2010; 68: 591-602.
15. Underwood LG, Teresi JA. The Daily Spiritual Experience Scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health related data. *Ann Behav Med*. 2002; 24: 22-33.
16. The WHOQOL Group. The World Health Organization Quality of Life assessment (WHOQOL): position paper from the World Health Organization. *Soc Sci Med* 1995; 41: 1403-9.
17. Hussain MA, Huxley RR, Al Mamun A. Multimorbidity prevalence and pattern in Indonesian adults: an exploratory study using national survey data. *BMJ Open* 2015; 5: e009810.
18. Visser A, Garssen B, Vingerhoets A. Spirituality and well-being in cancer patients: A review. *Psychooncology* 2010; 19: 565-72.
19. McAdams-DeMarco MA, Ying H, Olorundare I, King EA, Desai N, Dagher N, et al. Frailty and health-related quality of life in end stage renal disease patients of all ages. *J Frailty Aging* 2016; 5: 174-9.
20. Andrieu S, Coley N, Rolland Y, Cantet C, Arnaud C, Guyonnet S, et al. Assessing Alzheimer's disease patients' quality of life: discrepancies between patient and caregiver perspectives. *Alzheimers Dement* 2016; 12: 427-37.
21. Warsame F, Ying H, Haugen CE, Thomas AG, Crews DC, Shafi T, et al. Intradialytic activities and health-related quality of life among hemodialysis patients. *Am J Nephrol* 2018; 48: 181-9.
22. Bussing A, Michalsen A, Balzat HJ, Grunther RA, Ostermann T, Neugebauer EA, et al. Are spirituality and religiosity resources for patients with chronic pain conditions? *Pain Med* 2009; 10: 327-9.
23. Campbell J, Yoon DP, Johnstone B. Determining relationships between physical health and spiritual experience religious practices, and congregational support in a heterogeneous medical sample. *J Relig Health* 2010; 49: 3-17.
24. Wiśniewska L, Paczkowska B, Białobrzaska B. Zapotrzebowanie na wsparcie emocjonalne wśród pacjentów leczonych nerkozastępczo [Demand for emotional support among patients receiving renal replacement therapy]. *Forum Nefrologiczne* 2010; 3: 63-70.
25. Zelcer S, Cataudella D, Cairney AE, Bannister SL. Palliative Care of Children With Brain Tumors: A Parental Perspective. *Arch Pediatr Adolesc Med* 2010; 164: 225-30.
26. Mohyuddin A, Rehman I. Psychological factors of aging in Pakistan. *Indian J Health Well Being* 2016; 7: 109-12.
27. Zyoud SH, Daraghme 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: 44.
28. Kretchy I, Owusu-Daaku F, Danquah S. Spiritual and religious beliefs: Do they matter in the medication adherence behaviour of hypertensive patients? *Biopsychosoc Med* 2013; 7: 15.