ONLINE ISSN :3007-309X
PRINT ISSN :3007-3081

Journal of Medical & Health Sciences Review

ASSOCIATION BETWEEN SPIRITUAL WELL-BEING AND QUALITY OF LIFE AMONG PATIENTS WITH END -STAGE RENAL DISEASE

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ARTICLE INFO

Keywords: Spiritual well-being, Quality of life, End-stage renal disease, Hemodialysis

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ABSTRACT

Objective: This study aimed to assess the association between spiritual well-being and the quality of life among end-stage renal disease (ESRD) patients undergoing hemodialysis (HD).

Methodology: An analytical cross-sectional study was conducted at two public healthcare settings, the Institute of Kidney Disease and Lady Reading Hospital in Peshawar, Khyber Pakhtunkhwa (KPK). The sample, comprising 377 ESRD patients on a minimum of 6 months of hemodialysis, was selected using consecutive sampling. Data on spiritual well-being and quality of life were collected using the Urdu versions of the Spiritual Well-Being (SWB) scale and Quality of Life (QOL) scale, both with alpha-Cronbach's reliability coefficients of 0.82 and 0.74, respectively. Social and demographic data were also collected.

Result: The study revealed a strong positive correlation (0.721, $p<0.01$) between SWB and QOL. Statistical significance was observed between these two variables (Chi-square = 81.511, $p<0.001$). Most participants exhibited a moderate to high level of total spiritual well-being (SWB) and a low to moderate level of quality of life (QOL). Additionally, the study explored the relationship between demographic variables and QOL and Spiritual Well-being.

Conclusion: Spiritual well-being (SWB) was found to have a positive impact on the quality of life (QOL) of HD patients. Consequently, health systems, within the holistic framework of individual care, are encouraged to incorporate spiritual evaluation and care for HD patients. The findings emphasize the need for individualized treatment and care plans, recognizing the influence of socio-demographic factors on patients with the same disease.

Introduction

Optimal kidney function is crucial for overall well-being and equilibrium, playing a pivotal role in waste elimination and blood pressure regulation. Chronic kidney disease (CKD) poses a significant threat, potentially progressing to end-stage renal failure, where a substantial decline of 85 to 90% in kidney function places individuals at a heightened risk of mortality. Globally, CKD has emerged as a critical public health concern, with an estimated prevalence ranging from 8% to 16%. The prevalence of CKD has risen over the years, with a significant number of patients succumbing to the condition annually.[1] End-stage renal disease (ESRD) represents a major global health concern, contributing to premature mortality, diminished quality of life, and increased healthcare expenditures.[2] By 2019, ESRD was ranked 10th among the top causes of mortality worldwide. [1,3] Despite substantial investments in ESRD treatment, the associated healthcare costs remain significant, and patients in this category continue to face high rates of mortality and morbidity along with a reduced quality of life.[2] Developed countries are experiencing a rising incidence of kidney failure, leading to negative outcomes and substantial financial burdens. In countries like Iran, there has been a notable increase in the prevalence of ESRD cases over a short period Pakistan, holding the eighth position in terms of kidney disease prevalence, faces a considerable burden due to the high costs of treatment, low awareness levels, rising prevalence rates, and associated complications. [1,3–6] In Pakistan, kidney diseases claim the lives of 20,000 individuals annually, contributing to the country's high prevalence rate.[1,6,7] The economic burden of end-stage renal disease (ESRD) is exacerbated by costly treatment, poor awareness, and a lack of effective preventive measures. A significant percentage of the populations, particularly males, undergo dialysis therapy, facing a myriad of physical and psychosocial challenges. The standard treatment method, hemodialysis, has been associated with potential negative impacts on the overall quality of life (QOL) of ESRD patients. [5,8–10] The World Health Organization (WHO) defines quality of life as a multifaceted concept encompassing physical, mental, emotional, social functioning, and spirituality. [5] ESRD is a severe and persistent condition that adversely affects patients' quality of life, resulting in debilitation and restrictions across various dimensions of their existence. [11]Despite advancements in treatment and hemodialysis techniques, the issue of quality of life remains a substantial concern for individuals undergoing hemodialysis. [11,12] Spiritual well-being (SWB), an integral part of spirituality, is crucial for individuals dealing with Chronic Renal Failure (CRF). SWB encompasses both physical and psychological aspects of health and serves as an indicator of an individual's ability to navigate challenges, influencing their health outcomes. Understanding the spiritual well-being of patients becomes imperative, as it can impact their levels of hopefulness, sense of purpose, and overall quality of life.[5,13] While studies have indicated a favorable association between spirituality and quality of life, spiritual well-being is not widely integrated into palliative or supportive medical care practices in Pakistan. Nurses, who play a pivotal role in the care of hemodialysis patients, are well-positioned to identify and address the spiritual needs of patients. [13,14]However, the understanding of spirituality in the context of end-stage renal disease remains limited. [14]This study aims to explore the relationship between spiritual well-being and quality of life among hemodialysis patients in Pakistan, shedding light on an essential aspect of holistic patient care. Despite the global recognition of the impact of chronic illnesses on various facets of life, including spirituality, little is known about the relationship between

spiritual well-being and quality of life in the context of end-stage renal disease in Pakistan. This study seeks to address this gap by examining the connection between spiritual well-being and quality of life in hemodialysis patients, contributing valuable insights to the existing body of literature and potentially influencing healthcare policies and practices

Methodology

An analytical cross-sectional study was conducted in two public sector hospitals, Institute of Kidney Diseases Hayatabad Peshawar and Lady Reading Hospital of Peshawar. The study was conducted during the fourth semester of MS-Nursing from May 2023 to October 2023. Consecutive sampling was employed for its convenience and time efficiency, selecting eligible subjects until the desired sample size was achieved. A total of 377 end-stage renal disease dialysis-dependent patients with 133 from LRH and 244 from IKD were selected. All end-stage renal disease patients who were dialysis-dependent for at least six months were included. Patients with comorbidities such as CVA, deafness, blindness, and mental disorders were excluded. Before the commencement of data collection Ethical clearance was obtained from KMU's Ethical Review Board, Permission letters were obtained from the Director of Nursing Office addressed to the Directors of Nursing at LRH and IKD and informed consent was obtained from participants. Anonymity, privacy, confidentiality, and security measures were prioritized.

A self-administered questionnaire consisting of 52 items, including 6 demographic information, 20 SWB items, and 26 WHOQOL-BREF items, was used. Spiritual Well-being (SWB) assessed by the Spiritual Well-Being Scale (SWBS) which is rated on a scale of 1 to 6, with higher scores indicating greater well-being. Positively worded items (3, 4, 7, 8, 10, 11, 14, 15, 17, 19, and 20) are scored as follows: "Strongly Agree" (6), "Moderately Agree" (5), "Agree" (4), "Disagree" (3), "Moderately Disagree" (2), and "Strongly Disagree" (1). Negatively worded items (1, 2, 5, 6, 9, 12, 13, 16, and 18) are scored in reverse: "Strongly Agree" (1), "Moderately Agree" (2), "Agree" (3), "Disagree" (4), "Moderately Disagree" (5), and "Strongly Disagree" (6) .The tool is reliable, consistent and valid. The alpha-Cronbach' reliability coefficient is 0.82. Quality of Life (QOL) was assessed by WHOQOL-BREF questionnaire. It includes 2 items related to general health and overall quality of life and other from four domains i.e. Physical health (7 items), psychological health (6 items), social relationships (3 items), and environmental health (8 items). Responses are recorded on a 5-point Likert scale, ranging from "Not at all" (scored as 0) to "An extreme amount" or "Very much" (scored as 4). The alpha-Cronbach reliability is 0.74.SPSS version 22 was used for data analysis. Descriptive statistics, Pearson correlation, mean score differences, one-way ANOVA, Tukey HSD, and chi-square tests were applied.

Results

Social-Demographics Variables:

Demographic data were collected from 377 participants to explore basic characteristics and their association with spiritual well-being (SWB) and quality of life (QOL). The sample consisted of 35.8% females and 64.2% males, with a mean age of 42 years. The majority was married (63.4%), The analysis revealed a diverse educational background, with the majority having some level of education, a significant portion (40.6%) reported having received "Not at all" formal education. Educational levels were associated with various socioeconomic factors. Participants recognized their illnesses (100%) and Majority (99.5%) considered health issues as "illness."

Table 1: Socio-Demographic Variables

S. No	Variables	Range	Frequency	Percentage
1	Gender	Male Female	242 135	64.2% 35.8%
2	Education	Not at all Primary Secondary Tertiary	153 103 76 45	40.6% 27.3% 20.2% 11.9%
		Single Separate Divorced Widow/widower	2 6 30	0.5% 1.6% 8.0%
4	Currently ill	Yes No	377 0	100% 0%
5	If something is wrong with your health what do you think it is?	Illness Problem	375 2	99.5% 0.5%

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance

Frequencies and Percentages of Items for Quality of Life and Spiritual Well-being:
Participants rated their QOL across various statements. Notably, 31.0% reported being "Very Good" in overall quality of life. Participants responded to statements related to spiritual well-being. For example, 43.5% agreed that "God loves and cares about me."

Descriptive statistics:

Mean Score of Age, SWB and QOL

The minimum age was 15 years while the maximum age limit was 88 years, the mean age of participants were 42 years. The minimum total score for QOL is 25.00 and Maximum is 88.00 with mean score of 57.0531 while the minimum total score for spiritual well-being is 34.00 and maximum is 111.00 with mean score of 77.3926.

Table 2: Mean score of Age, SWB, QO

	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Age	377	73.00	15.00	88.00	1.60E4	42.3846	.70485	13.68580	187.301
Totalscoreqolife	377	63.00	25.00	88.00	2.15E4	57.0531	.69601	13.51407	182.630
Totalscorwellbeing	377	77.00	34.00	111.00	2.92E4	77.3926	.87209	16.93290	286.723
Valid N (listwise)	377								

Inferential Statistics:

Correlation between Spiritual Well-being and Quality of Life

A Pearson correlation analysis was performed to determine the relationship between the total score for quality of life and the total score for spiritual well-being. Strong positive correlation ($r = 0.721$, $p < 0.01$) between SWB and QOL, indicating a significant relationship. As the correlation coefficient is positive, an increase in the total score for spiritual well-being is associated with an increase in the total score for quality of life.

Table 3: Correlation between SWB and QOL

		Totalscoreqolife	Totalscorwellbeing
Totalscoreqolife	Pearson Correlation	1	.721**
	Sig. (2-tailed)		.000
	N	377	377
Totalscorewellbeing	Pearson Correlation	.721**	1
	Sig. (2-tailed)	.000	
	N	377	377

**. Correlation is significant at the 0.01 level (2-tailed).
Ta

Mean Difference in Scores across Gender

An independent sample t-test was used to compare means between two groups based on gender, total well-being score, and total score of life. Significant differences in mean for both total SWB and QOL scores between genders.

SWB (mean difference=5.28512, CI = 1.74412, 8.88530,$p < 0.004$) and total score of life (mean difference = 3.98304, CI = 1.15347, 6.83348, $p = 0.006$) between the two groups shown in table 4 and 5

Table4: Independent sample T-test for mean difference in SWB across the gender

Gendertotalscorewellbeing	N	Mean	Std.deviation	Std.Error mean
Male	242	79.2851	16.43538	1.05651
Female	135	74.0000	.1733946	1.49234

Totalscorwellbeing	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	1.307	.254	2.935	375	.004	5.28512	1.80084	1.74412	8.82613
Equal variances not Assumed			2.890	264.972	.004	5.28512	1.82847	1.68495	8.88530

Table 5:Independent sample T-test for mean difference in QOL across the gender

Gendertotalscorqolife	N	Mean	Std.deviation	Std.Error mean
Male	242	58.4793	13.29187	.85443
Female	135	54.4963	13.58109	1.16887

Totalscoreqolife	Levene's Test for Equality of Variances		t-test for Equality of Means					95%ConfidenceInterval of the Difference	
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.453	.501	2.768	375	.006	3.98304	1.43903	1.15347	6.81262
Equal variances not Assumed			2.751	272.244	.006	3.98304	1.44787	1.13260	6.83348

Application of One-way Analysis of Variance (ANOVA) and Tukey HSD

One-way analysis of variance statistical test was applied to see the difference in mean score on the dependent variable across more than two categories, and tukey HSD applied to see which

mean is different from which one. Significant differences in mean scores across education levels for SWB and QOL found. For variable totalscorwellbing (F = 5.450 and P = 0.001 <0.05), as shown table 6 and" Totalscoreqolife" (F = 12.703 and P = 0.000 <0.05), as shown below in table 8. While Mean scores for the marital status categories of both variable was insignificant statistically. For Totalscorwellbing (F =1.121, p= .349) and for Totalscoreqolife (F=1.412 p=.219).

Table 6: Means of Education categories and outcome of ANOVA for SWB

Category totalscor well-being and education	Sample (n)	Mean	ANOVA (p-value)	
Not at all **Primaryy** **secondary** **Tertiary**	153 76 103 45	74.6536 77.8738 77.1447 86.0222	**F= 5.450**	**P=.001(<0.05)**

Table 7: Shown Pair-wise mean difference of Educational categories and outcome of Tukey HSD for totalscore SWB

Comparison of education categories for totalscor well-being	Pair-wise mean difference	95% confidence Interval		
		Lower limit	Upper limit	P-value
Not at All VS Tertiary **Primary VS Tertiary** **Secondary VS Tertiary**	-11.36863* -8.14844* -8.87749*	-18.6509 -15.8219 -16.9547	-4.0864 -.4750 -.8002	P = 0.000 P = 0.032 P = 0.025

Table 8: Means of education categories and outcome of ANOVA for QOL Variable

Categorytotalscoreqolife and education	Sample (n)	Mean	ANOVA (p-value)	
Not at all **Primary** **secondary** **Tertiary**	153 103 76 45	52.7190 58.2136 59.4342 65.1111	**F= 12.703**	**P=.000(<0.05)**

Table 9:Pair-wise mean difference of educational categories and outcome of Tukey HSD for total score QOL

Comparison of categories Quality of Life variable and education	Pair-wise mean difference	95% confidence Interval		
		Lower limit	**Upper limit**	**P-value**
Not at All **Primary** **secondary** **Tertiary**	-5.49464* -6.71526* -12.39216*	-9.7456 -11.3958 -18.0482	-1.2437 -2.0347 -6.7361	**.005** **0.001** **0.000**

Primary **Not at All** **Tertiary**	 5.49464* -6.89752*	1.2437 -12.8574	9.7456 -.9377	**P = .005** **P = 0.016**
Secondary **Not at Al**	6.71526*	2.0347	11.3958	**P=0.001**
Tertiary **Not at All** **Primary**	 12.39216* 6.89752*	 6.7361 .9377	 18.0482 12.8574	 **P=.000** **P=0.016**

Association between Two Categorical Variables

Strong association (Chi-square = 81.511, p < 0.001) between SWB and QOL, indicating that higher SWB correlates with higher QOL.

Figure1: Categories of SWB: SWB categorized as low (20–40), moderate (41–90), and high (91–120).

Serial no.	**Spiritual Wellbeing**	Category	**Quality of Life**		P-value	
			<= 57.00 (Low QOL)	**58.00+ (High QOL)**		
1		**20-40(Low SWB)**	6 (100%)	0(0%)	6 (100%)	**Chi-square**= 81.511 **P** < 0.001
2		**41-90 (Moderate SWB)**	174(61.7 %)	108(38.3%)	282.0(100 %)	
3		**91-120 (High SWB)**	10(11.2%)	79 (88.8%)	89.0(100%)	
		Total	190.0	187.0	377.0	

Table#10: Association between SWB and QOL Score for Categories of Spiritual Well-being and Quality of Life

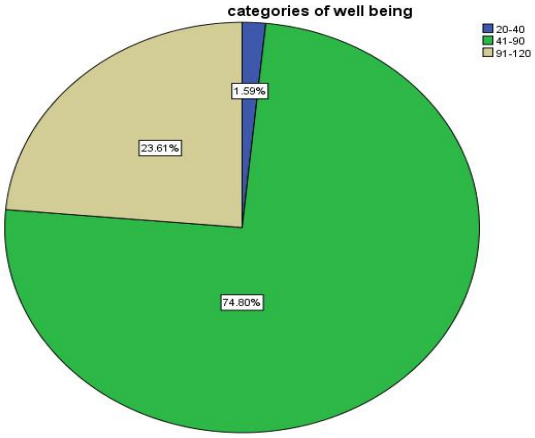
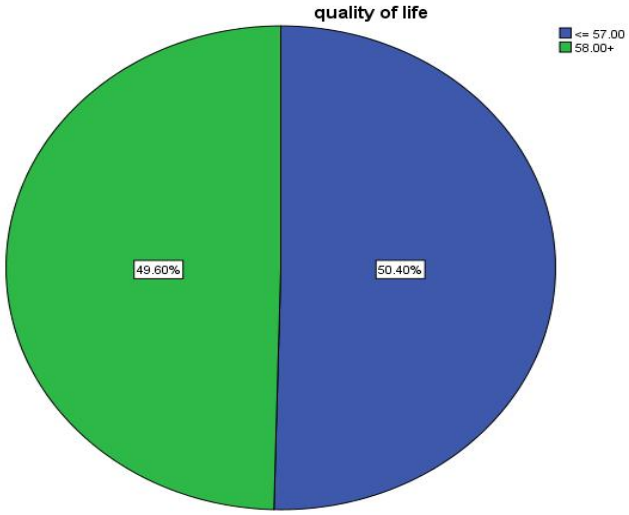


Figure2: Categories of QOL: QOL categorized as low (<= 57) and high (58.00+).



Discussion

Mean score differences among demographic categories

This study establishes a significant association between spiritual well-being (SWB) and quality of life (QOL) in end-stage renal disease (ESRD) patients undergoing hemodialysis. Demographic variables, particularly gender, showcase notable correlations with both SWB and QOL. Male patients exhibit higher SWB (mean score: 79.2851) compared to females (mean score: 74.0000). Similar results were observed in studies conducted by Pilger et al., Kanwal Shehbaz 2015, and Chatrung, Sorajjakool, & Amnatsatsue, .[14–16]The present study's findings differ from those of Saritas and Buyukbayram, as they did not observe statistically significant gender disparities in spiritual orientation. [17] Variances from Saritas, Buyukbayram, and Cheawchanwattana studies underscore potential gender-specific health behaviors. Marital status shows no significant influence on SWB, with a mean score of 78.2385 aligning with Pilger et al., Chatrung's and Saritas, findings. [14,16,17] Inconsistent results with K. Shehbaz's study highlight the complex role of marital status in spiritual well-being.[15] Patients with tertiary education demonstrate higher SWB (mean score: 86.0222). Divergence from Saritas and Buyukbayram's results emphasizes the need to consider educational status in evaluating spiritual well-being.[17] Males score higher than females in quality of life, contrasting Saritas and Buyukbayram's findings which found no significant gender differences. [17]Marital status lacks significant impact, opposing Saritas and

Buyukbayram's results, where single individuals reported higher quality of life scores. [17]While the results from Kanwal Shehbaz and Dr. Kiran Shehbaz's study in 2015, found higher quality of life among married individuals.[15]Educational status correlates with higher QOL, consistent with Kanwal Shehbaz's study. .(15)Additionally, a current study unveiled that the quality of life of hemodialysis patients is influenced by their health literacy, which is consistent with the results of studies conducted by Ebrahimi et al. (2014).[18]

Score of the levels of Spiritual Well-Being

Participants exhibit a moderate to high level of SWB, emphasizing the importance of spirituality in ESRD patients. In the current study, a variety of levels of SWB was observed among the participants. Some participants in the studies exhibited a high level of SWB. These individuals demonstrated a strong connection between their spiritual beliefs and a heightened sense of purpose and meaning in life. The majority of the participants across the studies fell into the moderate SWB category. These individuals showed a balance in their spiritual well-being, with a moderate level of SWB (typically in the range of 41-90) while a smaller number with low SWB (20-40). These individuals may benefit from interventions aimed at enhancing their spiritual well-being. Cultural factors influence SWB, showcasing the need for individualized care. Consistent with the findings, a study by Duran et al., 2020showed that participants have high SWB.[19]Similarly, other studies on hemodialysis patients also reported the spiritual well-being levels of patients to be high.[20]A previous studies[10,18,21,22] also reported a moderate level of spiritual well-being among patients, indicating that most participants recognized the value of their existence and accepted their current disease condition. The current study's findings, showing moderate to high spiritual well-being in Pakistani patients, differ from a study by Fradelos, 2021 in Greek patients, which indicating lower levels of spirituality.[9] This highlighted the potential influence of cultural factors on the spiritual well-being of individuals in different regions.

Score of the levels of Quality of Life

Quality of life varies, with approximately half in the "Low QOL" and half in the "High QOL" category, Which aligns with studies by Saritas and Ebrahimi et al., 2014) suggesting that the quality of life in patients with end-stage renal Disease (ESRD) tends to be at a moderate level.[17,18]Current findings challenge previous studies reporting uniformly low quality of life, highlighting individual differences or could be attributed to variations in the quality-of-life assessment scales used.

Association and Correlation between SWB and QOL

Significant positive correlation between SWB and QOL, indicating higher spiritual well-being corresponds to an enhanced quality of life. Strong correlation (0.721, $p<0.001$) emphasizes the interconnectedness of spiritual well-being and quality of life.

The results showed a significant positive association between SWB and QOL in ESRD patients, as indicated by a Chi-square value of 81.511 with a p-value less than 0.001. These findings are in line with a growing body of research that underscores the importance of addressing the spiritual dimension in healthcare, particularly for patients dealing with chronic and life-threatening conditions. The findings from studies. [5,9,15,16,21] support a positive association between spiritual well-being and quality of life

The findings from this study suggest that integrating spiritual support in the care of ESRD patients can positively influence both spiritual well-being and quality of life. Recognizing gender-specific health behaviors, considering marital and educational statuses and embracing a holistic approach are crucial for improving outcomes in this patient population. These findings

contribute to the understanding of spirituality's role in health outcomes, emphasizing the need for comprehensive healthcare interventions, thereby allowing nurses to develop health plans geared towards these dimensions, which are often ignored or dismissed, thus promoting a comprehensive approach to health care. It suggests the potential for interventions that enhance spiritual well-being to improve the overall health and well-being of individuals with chronic health conditions like ESRD.

Conclusion

In conclusion, this study reveals a significant positive correlation between spiritual well-being and the quality of life in end-stage renal disease (ESRD) patients undergoing dialysis. The complex nature of ESRD affects not only physical health but also mental and social well-being. Patients with robust spiritual health and a positive attitude towards haemodialysis exhibit better quality of life, aligning with existing literature. These findings underscore the importance of interventions to enhance spiritual well-being, particularly for nurses, who play a crucial role in identifying factors influencing the quality of life in ESRD patients. The results emphasize the need for healthcare systems to integrate spiritual evaluation and care into hemodialysis treatment, fostering a holistic approach and potentially improving overall patient well-being. This study contributes valuable insights for future research exploring these variables across various study designs.

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