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Health-Related Quality of Life among Nurses Working in Public Sector Hospitals of Khyber Pakhtunkhwa

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ABSTRACT

Health-related quality of life (HRQL) is a multidimensional concept that encompasses physical, psychological, social, and environmental factors. Numerous pressures are affecting nurses' physical and emotional well-being and everyday functioning, which in turn is harming their HRQL. **Objectives:** To assess HRQL among nurses and identify factors that may influence their quality of life. **Methods:** A descriptive cross-sectional study involving 375 nurses from four public sector hospitals in Khyber Pakhtunkhwa, Pakistan, selected through a convenient sampling technique. Data were collected through a structured questionnaire. Data have been analyzed descriptively to calculate the frequencies, percentages, mean, and standard deviation. Data were analyzed by SPSS version 22.0. **Results:** Most of the nurses (51.2%) were in the group age group of 26-30 years with nearly equal gender distribution. The environmental domain exhibited the highest mean Health-related quality of life score (27.23). Notably, a weak positive correlation was observed between age and the social domain ($r=0.181^{**}$, $p<0.001$). Conversely, a weak negative correlation was noted between education and the social domain ($r=-0.123$, $p=0.017$). Significant differences were found in mean scores for the Age, Physical, and Environmental domains (p-values of 0.010 and 0.011). **Conclusions:** It was concluded that this study emphasized the importance of addressing physical and psychological challenges faced by nurses to enhance their overall well-being. Furthermore, the study highlighted the influence of demographic factors on nurses' HRQL, offering valuable insights for tailored healthcare interventions and support programs.

INTRODUCTION

Health-related quality of life (HRQL) reflects an individual's satisfaction with life aspects influenced by health. Quality of Life (QoL) is a broader concept that measures overall well-being, while HRQL focuses on the impact of physical, mental, social, and environmental factors on health [1]. In healthcare, HRQL is crucial for evaluating hospital staff effectiveness. Healthcare professionals, particularly nurses work to improve healthcare access and quality, promote health, and prevent illness [2]. Yet there hasn't been much focus on improving the standard of living for Pakistani hospital staff. Since hospital personnel'(HRQL) is directly tied to their quality effectiveness, governments should give this careful consideration [3]. Nurses often face stressors like death, illness, and demanding work environments, which can negatively affect their HRQL by weakening their physical and mental health. Poor nurse health is linked to compromised patient care, safety, and increased medication errors. Studies show that nurses with poor health report lower HRQL [4, 5]. Different studies have reported poor psychological domain in the health-related quality of life [2]. Various factors can impact nurses' quality of life. Burnout (BO) among nurses may affect their productivity, quality of life, and ability to provide nursing care. Burnout among nurses has been linked to low quality

of life [6]. Another study has found that the most significant factors contributing to the nurses' low QWL were their insufficient and unfair compensation, a lack or poor system of issues resolution in the organization, lack of appraisal, job insecurity, highly stressful working environment, unethical advancement practices, and insufficient participation in decision-making [7, 8]. The physical and social aspects of a hospital setting have an impact on nurses' health-related quality of life, a workplace that is not suitable makes it difficult for nurses to maintain their physical and psychological well-being at work [9]. A study conducted showed that Iranian nurses had moderate HRQL, which was needed to improve the standard of care offered to patients [10]. Additionally, nurses had a higher-than-average work-life quality, which meant that nurses' quality of life scores were higher on rotating shifts [11]. HRQL has been progressively acknowledged in a variety of patient-reported outcomes in Pakistan, where living conditions, public health improvements, and medical care are all improving daily. The place of residence, House Occupant, ageing, Sexuality, City, Studies, and Profession were among the demographic factors that indicated that they have a substantial impact on HRQOL. Furthermore, Health-related population norms can influence Pakistan's general people's health and age-related declines in standards and values are evident in this study of Pakistanis; women had worse health across the board than men [12]. According to a study which shows that nurses with LBP (low back pain) due to their jobs have a much lower quality of life. The duties of the nurses and the standard of medical care would both be significantly impacted by this consequence [13]. According to the investigation, working as a manager, secretary, or welder predicts a lower HRQL mental constitutes, whereas limited resources and little physical exercise are linked to a lower HRQL physical aspect [14]. In Pakistan, little attention has been given to improving the QoL for hospital employees. HRQL is a crucial factor in enhancing hospital employees' well-being, which in turn leads to better performance, more efficient healthcare delivery, and improved service outcomes. Policymakers must prioritize HRQL for hospital employees, as it directly impacts their performance. This study aims to address this gap by providing valuable insights to guide efforts to improve nurses' quality of life in Khyber Pakhtunkhwa.

This study aims to investigate HRQL among nurses and identify factors that may influence their quality of life.

METHODS

The descriptive cross-sectional correlational design was conducted for 4 months, from Sep 2023 to Jan 2023. Data were gathered from public tertiary care hospitals of Khyber Pakhtunkhwa after getting proper permission. The inclusion criteria for the study were individuals aged 21 or older who were registered nurses working in public sector hospitals of Khyber Pakhtunkhwa and were willing to volunteer for the study were eligible. Nursing students and those nurses who were performing double shift duty were excluded. A total of 375 nurses were selected out of a total of 15328 nurses in the province using a convenient sampling technique calculated through Rao soft. Using the single-proportion formula, a sample size of 375 nurses was calculated using a 95% confidence level, 5% margin of error and taking an expected percentage of HRQL as 11.3% in nursing. The data were collected through the WHOQOL-BREF tool which is a well-known and commonly used tool for measuring HRQL in different settings. It has 26 components broken down into four categories: (a) physical health; (b) psychological health; (c) social relationships; and (d) environment. Higher scores in each domain, which are rated independently, suggest a better HRQL. Ethical approval was obtained from the relevant institutional review board of the college and targeted hospital administration. All those involved gave their informed consent, guaranteeing confidentiality and safety. Participants were free to leave the research at any time; participation was entirely voluntary. A statistical analysis tool like SPSS version 22.0 was used to enter and analyze the data. A descriptive statistic (means, standard deviations, frequencies, and percentages) was calculated to summarize demographic data and HRQL results. To investigate possible correlations between HRQL domains and demographic factors, inferential statistics like T-test, ANOVA, and correlative test analysis were employed.

RESULTS

Most of the participants were in the age group of 26-30 (51.2%), followed by those aged 21-25 (17.9%), with a nearly even split between males (51.2%) and females (48.8%). Regarding marital status, most participants were married (57.1%), while 42.9% were single. In terms of education, the most common educational level was "Post RN" (35.5%) and Bachelor of Science in Nursing (BSN) degree (31.2%). Largest group having 1-3 years of experience (35.5%), followed by 4-6 years of experience (34.1%). A significant portion of participants were in critical areas (49.9%) and general wards (42.9%), while smaller percentages were working in OPDs (1.6%) and other areas (5.6%) (Table 1).

Table 1: Demographic Characteristics of Study Participants (n=375)

Demographic Characteristics		Frequency (%)
Age	21-25	67 (17.9%)
	26-30	192 (51.2%)
	31-35	57 (15.2%)
	36-40 & Above	59 (15.7%)
Gender	Male	192 (51.2%)
	Female	183 (48.8%)
Marital Status	Single	161 (42.9%)
	Married	214 (57.1%)

Education	General Nursing	114 (30.4%)
	Post RN	133 (35.5%)
	BSN	117 (31.2%)
	MSN	11 (2.9%)
Experience	1-3 Years	133 (35.5%)
	4-6 Years	128 (34.1%)
	7-9 Years	55 (14.7%)
	10 Years and Above	59 (15.7%)
Area of Experience	Critical Areas	187 (49.9%)
	General Wards	161 (42.9%)
	OPDs	6 (1.6%)
	Others	21 (5.6%)

Results display the distribution of responses to various items in the WHOQOL-BREF questionnaire, reflecting the perspectives of 375 respondents on their quality of life and well-being. The results indicated that, in the Overall Health 'QoL Rating' and 'Health Satisfaction Status' items, a significant proportion of respondents (53.3% and 43.7%, respectively) at a mean score of 3.85 rated their health and health satisfaction as "Good," indicating that significant proportion of the participants views their overall health and quality of life positively. In contrast, the 'Physical Domain' items showed that respondents tend to face challenges with physical pain and medical treatment, with 10.9% and 20.3% rating these aspects as "Poor" or "Very Poor."

Furthermore, in the physical domain 'Satisfaction of Daily Living Activities' a mean score of 3.71 falls above the midpoint of the scale 2.5, indicating that, on average, participants generally reported a moderate to high level of satisfaction with their daily living activities. Moving to the 'Psychological Domain', 'Negative Feelings' stand out as an area of concern, with 10.1% of respondents reporting 'Poor' or 'Very Poor' feelings. On the positive side, 'Self-Satisfaction' and 'Concentration Ability' are rated highly, with 41.6% and 34.9% of participants marking them as 'Good'. Within the Environmental Domain, issues arise regarding 'Healthy Environment' and 'Leisure Activities', where a significant proportion of participants reported dissatisfaction. Conversely, 'Life Safety' and 'Availability of Information for Daily Life' received favourable responses, with 39.7% and 37.1% ranking them as 'Good' or 'Excellent'. In the Social Domain, 'relationship' and 'sexual satisfaction' are predominantly positive, with 48.0% and 41.3% rating them as 'Good'. However, 'Friend Support Satisfaction' shows potential for improvement, as 32.4% of participants marked it as 'Average.' Finally, most of the participants rate their psychological, social, and environmental health as 'Average' and 'Good' This means that a considerable number of individuals in the study had positive perceptions of their overall QoL in four domains (Table 2).

Table 2: Distribution of World Health Organization Quality of Life Brief Version (WHOQOL-BREF) items' responses (n=375; %)

WHOQOL-BREF Items	Mean	Very Poor-1 (%)	Poor-2 n (%)	Average-3 n (%)	Good-4 n (%)	Excellent-5 n (%)
Overall, Health						
QoL Rating	3.85	7 (1.9%)	23 (6.1%)	66 (17.6%)	200 (53.3%)	79 (21.1%)
Health Satisfaction Status	3.92	6 (1.6%)	23 (6.1%)	74 (19.7%)	164 (43.7%)	108 (28.8%)
Physical Domain						
Extent of Physical Pain	2.77	41 (10.9%)	105 (28.0%)	143 (38.1%)	71 (18.9%)	15 (4.0%)
Medical TX for Daily Function	2.57	76 (20.3%)	116 (30.9%)	92 (24.5%)	72 (19.2%)	19 (5.1%)
Energy for Everyday Life	3.39	28 (7.5%)	47 (12.5%)	111 (29.5%)	128 (34.1%)	61 (16.3%)
Get Around ability	3.78	12 (3.2%)	32 (8.5%)	81 (21.6%)	151 (40.3%)	99 (26.4%)
Sleep Satisfaction	3.46	20 (5.3%)	62 (16.5%)	80 (21.3)	151 (40.3%)	62 (16.5%)
Satisfaction of Daily Living Activities	3.71	16 (4.3%)	39 (10.4%)	72 (19.2%)	157 (41.9%)	91 (24.3%)
Capacity for Work	3.93	8 (2.1%)	27 (7.2%)	65 (17.3%)	156 (41.6%)	119 (31.7%)
Psychological Domain						
Enjoy Life	3.32	20 (5.3%)	55 (14.7%)	132 (35.2%)	120 (32.0%)	48 (12.8%)
The extent of Meaningful Life	3.33	32 (8.5%)	50 (13.3%)	119 (31.7%)	109 (29.1%)	65 (17.3%)
Concentration Ability	3.34	25 (6.7%)	55 (14.7%)	112 (29.9%)	131 (34.9%)	52 (13.9%)
Body Appearance	3.81	14 (3.7%)	39 (10.4%)	88 (23.5%)	95 (25.3%)	139 (37.1%)
Self-Satisfaction	3.95	8 (2.1%)	21 (5.6%)	70 (18.7%)	156 (41.6%)	120 (32.0%)
Negative Feelings (Anxiety, Depression, Despair, etc)	2.86	38 (10.1%)	93 (24.8)	152 (40.5)	65 (17.3)	27 (7.2%)
Environmental Domain						
Life Safety	3.46	18 (4.8%)	39 (10.4%)	118 (31.5%)	149 (39.7%)	51 (13.6%)
Healthy Environment	3.23	19 (5.1%)	64 (17.4%)	147 (39.2%)	99 (26.4%)	46 (12.3%)
Financial Satisfaction	3.42	18 (4.8%)	53 (14.1%)	123 (32.8%)	112 (29.9%)	69 (18.4%)
Availability of Information for Daily Life	3.39	8 (2.1%)	50 (13.3%)	140 (37.3%)	139 (37.1%)	38 (10.1%)

Leisure Activities	3.14	22 (5.9%)	81 (21.6%)	149 (39.7%)	97 (25.9%)	25 (6.7%)
Living Place Satisfaction	3.57	15 (4.0%)	39 (10.4%)	91 (24.3%)	174 (46.4%)	56 (14.9%)
Healthcare Satisfaction	3.50	11 (2.9%)	41 (10.9%)	113 (30.1%)	167 (44.5%)	43 (11.5%)
Transport Satisfaction	3.47	17 (4.5%)	46 (12.3%)	103 (27.5%)	159 (42.4%)	50 (13.3%)
Social Domain						
Relationship Satisfaction	3.30	11 (2.9%)	34 (9.1%)	61 (16.3%)	180 (48.0%)	89 (23.7%)
Sexual Satisfaction	3.78	8 (2.1%)	38 (10.1%)	78 (20.8%)	155 (41.3%)	96 (25.6%)
Friend Support Satisfaction	3.58	13 (3.5%)	45 (12.0%)	101 (26.9%)	142 (37.9%)	74 (19.7%)

The correlation coefficients are all positive and significant between the different domains, meaning that nurses' overall health shows positive correlations with all other domains (Physical, Psychological, Environmental, and Social). This shows that nurses who have higher overall health scores also tend to have higher scores on the physical, psychological, environmental, and social domains. There is a moderate to strong positive correlation (0.648**) between the Physical Domain and the Psychological Domain indicating that individuals with elevated physical health are more likely to experience better psychological well-being and vice versa. Furthermore, the correlation between the overall health domain and the physical domain is the strongest (0.524). This means that nurses with higher overall health scores are more likely to report better physical health. Also, nurses' Environmental and Social Domains have a positive correlation with other domains (Table 3).

Table 3: Correlation Coefficient in Overall Health and Domains

Correlations		GH	PD	PsD	ED	SD
Overall General Health (GH) Domain	Correlation (r)	1.000	-	-	-	-
	p-value	0.000	-	-	-	-
Physical Domain (PD)	Correlation (r)	0.524**	1.000	-	-	-
	p-value	0.000	0.000	-	-	-
Psychological Domain (PsD)	Correlation (r)	0.499**	0.648**	1.000	-	-
	p-value	0.000	0.000	0.000	-	-
Environmental Domain (ED)	Correlation (r)	0.469**	0.478**	0.527**	1.000	-
	p-value	0	0.000	0.000	0.000	-
Social Domain (SD)	Correlation (r)	0.442**	0.402**	0.477**	0.460**	1.000
	p-value	0.000	0.000	0.000	0.000	0.000

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

Findings provide insights into the strength and significance of correlations (r) between demographic variables and five HRQoL domains: Overall Health, Physical, Psychological, Environmental, and Social. The data reveals a weak positive correlation (r=0.181**, p<0.001) between age and social domain, indicating that as individuals grow older, they tend to develop stronger social connections, likely due to more available time and a broader network of friends and family. Another moderate correlation (r=0.132*, p=0.010) was found between age and physical health, indicating that advancing age is associated with a higher likelihood of encountering health issues. Additionally, there's a positive correlation (r=0.131*, p=0.011) between age and the environmental domain, indicating that older adults tend to have a stronger connection to their surroundings, potentially due to their increased familiarity and experience with their environment. The correlation between marital status and the physical domain is weak but statistically significant (r=0.103, p=0.047). This suggests that married people tend to have slightly better physical health than unmarried people. Marital status is weakly but significantly associated with both physical (r=0.103, p=0.047) and social (r=0.169, p=0.001) domains. It suggests that married individuals tend to have slightly better physical health and stronger social ties than unmarried individuals. Furthermore, there is a weak negative correlation (r=-0.123, p=0.017) between the Education and Social domains. This means that people with higher levels of education are less likely to have strong social ties than people with lower levels of education. Similarly, the table shows a negative non-significant correlation between the education and Physical Domain and Psychological Domain (r= -0.056, p=0.281 and r= -0.062, p=0.210) which suggests that a person's level of education is not strongly related to their physical and psychological well-being. This indicated that individuals with more life experience tend to have better physical health and stronger social ties. In other words, as people accumulate life experiences, they enjoy better physical well-being and become more adept at forming and maintaining social connections (Table 4).

Table 4: Correlation between Demographic Variables and different Domains

Variables		Overall, Health Domain	Physical Domain	Psychological Domain	Environmental Domain	Social Domain
Age	Correlation	0.049	0.132*	0.063	0.131*	0.181**
	p-value	0.346	0.010	0.224	0.011	<.001
Gender	Correlation	−0.068	−0.034	0.014	0.083	0.080
	p-value	0.189	0.514	0.787	0.108	0.124
Marital Status	Correlation	0.046	0.103*	0.078	0.034	0.169**
	p-value	0.373	0.047	0.131	0.509	0.001
Education	Correlation	−0.011	−0.056	−0.065	−0.078	−0.123*
	p-value	0.831	0.281	0.207	0.130	0.017
Experience	Correlation	0.022	0.152**	0.034	0.070	0.193**
	p-value	0.669	0.003	0.507	0.178	<.001
Experience Area	Correlation	−0.022	0.039	0.017	0.075	−0.047
	p-value	0.675	0.455	0.741	0.146	0.361

The correlation was significant at the 0.01 level (2-tailed)**, Correlation was significant at the 0.05 level (2-tailed)*

DISCUSSION

In the current study, the mean HRQL scores for all five domains are above the midpoint of the scoring scale, indicating that nurses in Khyber Pakhtunkhwa, Pakistan generally report good quality of life. The findings of this study differ from a prior study, which reported a high mean score for the social domain and the lowest for the environmental domain. However, current results align with Luciane Nascimento's research, particularly in the physical and social domains [15]. Additionally, our study's mean scores are substantially lower across all domains compared to a similar study, which found that Pakistani healthcare workers had higher scores in the social and psychological domains [16]. Most participants rated their overall health and quality of life as "Good," reflecting a generally positive outlook. In the physical domain, participants expressed moderate to high satisfaction with daily activities. In the psychological, social, and environmental domains, most rated their quality of life as "Average" or "Good," indicating positive well-being in these areas. Older nurses may have the energy and vitality to engage in social events, sports, and other activities, and are likely to receive more social support from friends and family, positively impacting their social well-being. This finding aligns with Far and Muhammad study, which suggests poor physical health can reduce mental health but contrasts with the negative correlation between physical and general health [17]. Gender was not directly linked to overall health or specific health domains, aligning with previous research [18]. Additionally, marital status showed a weak positive correlation with physical and social well-being, indicating that being married may improve physical and social health, likely due to emotional and social support from a partner. These findings are consistent with prior studies [19]. Experience has a significant positive correlation with the physical, psychological, and social domains (p<0.05), strongest with the social domain. The positive correlations suggest that individuals with more experience tend to have better physical, psychological, and social well-being. Experience could bring greater confidence, expertise, and social connections, which contribute positively to these domains. Additionally, a study finding shows that there were no correlations discovered between HRQL and any of the following: gender, marital status, and educational attainment [20].

CONCLUSIONS

It was concluded that most participants in Khyber Pakhtunkhwa, Pakistan, rated their overall health and quality of life as "Good" and reported moderate to high satisfaction with their daily activities. However, significant differences in HRQL scores were observed across various demographic groups. For instance, older individuals, married people, and those with higher education levels reported better overall HRQL. Additionally, nurses in better health showed better physical, psychological, environmental, and social well-being. These findings suggest that factors like age, marital status, qualification, and health condition can influence a person's HRQL.

Authors Contribution

Conceptualization: IR, HR, AK
Methodology: HR, AUR, AJ, MI, FZ, AK
Formal analysis: IR, NU
Writing review and editing: IR, NU, FZ, AJ

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

All the authors declare no conflict of interest.

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