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NURSING WELLNESS AND ITS ASSOCIATED ORGANIZATIONAL AND PATIENT-CARE FACTORS AMONG NURSES WORKING IN CARDIOLOGY DEPARTMENTS OF TERTIARY CARE HOSPITALS IN PUNJAB, PAKISTAN: A QUANTITATIVE STUDY

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Abstract

Background: *: Nursing workload, staffing stress, organizational leadership support, and patient care demands in the workplace could either positively or negatively affect the wellness of nurses. Organizational resources to support nurses in the workplace could function as protective factors.*

Objective: *The purpose of this quantitative cross-sectional study was to examine the relationship between nursing workload, staffing stress, leadership support, patient care demands, and the wellness of nurses.*

Methodology*: Data from 140 nurses in the Midwest were collected by a survey that contained a combination of questions to evaluate the participants' workload, their experiences of staffing stress, their perceptions of leadership support, their perceptions of the amount of demand created by patient care requirements, and their overall wellness. Results from the data were provided by use of descriptive statistics, Pearson correlations, one-way ANOVA, and a multiple linear regression.*

Results: *The mean score for the participants' ratings of their workload and staffing stress was 4.16 (SD = 0.72), which was the highest score of all the measured variables. The mean score for the participants' ratings of patient care demands was 4.06 (SD = 0.65). Negative correlations were found between nursing wellness and measures of nursing workload ($r = -.468$, $p < .001$), staffing stress ($r = -.394$, $p < .001$), and patient care demands ($r = -.394$, $p < .001$). Positive correlations were found between nursing wellness and leadership support ($r = .512$, $p < .001$) and support ($r = .512$, $p < .001$). A significant regression model was found. $F(3,136) = 32.881$, $p < .001$.*

Conclusion: *The findings of this study support the position that the organizational working conditions affect the wellness of nurses and, therefore, require integrated workplace interventions.*

Introduction

Cardiovascular diseases or CVDs affect millions of people all over the world and are leading cause of death globally. Even though in developed countries number of death caused by CVDs is declining but in low- and middle- income

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countries number of death due to CVDs is increasing. CVDs place increased demand on healthcare system and are managed primarily within the framework of tertiary care. Monitoring and administration of medications along with providing emergency care to patients and their families and teaching them is part of role of cardiac nurses. It has been established that having sufficient numbers of nurses to care for their patients is better for their health and that working nurses to the limit and not having enough of them to care for patients can have several negative results including those caused by missing care (Aiken et al., 2014; Assaye et al., 2021; Twigg et al., 2021). Nursing in cardiac care units is particularly demanding as patients are critically ill and some of them can deteriorate quickly. Emergencies can occur at any time and there are physical as well as emotional demands of patients' and their families' needs. These factors can cause burnout and emotional exhaustion in cardiac nursing (Larysz et al., 2021; Jun et al., 2021).

There are several characteristics of the work environment that influence the wellness of the nurses. These include the extent to which the work of nurses is affected by factors outside of their control; the amount of stress or pressure that they feel; their physical and emotional fatigue; their job satisfaction; and their overall quality of professional functioning. Positive work environments are known to have a range of both positive nurse and patient outcomes (Lake et al., 2019). For instance, positive work environments are associated with a range of good nurse outcomes, as well as with safe patient care and with a range of other positive patient outcomes. Positive work environments are also known to decrease the risk of burnout in nurses and increase job satisfaction among them in different healthcare settings (Purdy et al., 2010; Wei et al., 2018). The quality of care that is provided to patients can also be affected by the organization of the work environment and by the individual characteristics of the staff (Bae, 2021). This is why the stress that nurses experience due to excessive workload or to poor schedules can affect their well-being and the safety of their patients.

The nursing workforce globally is facing immense challenges. The wellness of nurses working in health care system of Pakistan is a concern for many. A previous study reported correlation between burnout and quality of life of nurses. The same is true for the factor that determine nursing satisfaction for work in tertiary care hospitals of Pakistan. These factors are inadequate for supervision, lack of opportunities for training and development to meet demands of patient care. All these problems have been discussed in the previous study and attempts have been made to address the issue of burnout. However, the issue remains an occupational health concern and needs to be addressed. There is need for further research to establish relationship between nursing wellness and various factors affecting the same in the context of work place, i.e., workload/staffing, leadership and work environment, teamwork and patient care demands of the nurses working in cardiology departments of the tertiary care hospitals in Southern and Central Punjab. The purpose of this study is to investigate relationship between the nursing wellness and above-mentioned factors in the cardiology departments of Bahawal Victoria Hospital, Bahawalpur; Sheikh Zaid Hospital, Rahim Yar Khan and Nishtar Hospital, Multan. The findings of this study will be helpful for the nursing administrators and hospital management to identify modifiable factors affecting the work place of the nurses and to develop department specific strategies to promote wellness of the nurses and to deliver quality care to the patients with cardiovascular diseases.

Research Objective

To determine the association between nursing wellness and organizational and patient-care factors among nurses working in cardiology departments of tertiary-care hospitals in Punjab, Pakistan.

Methodology

Study Design and Setting

The study is a quantitative, cross-sectional correlational research study conducted to explore the lives of nurses working in the cardiology

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departments of three tertiary-care hospitals in Punjab, Pakistan i.e. Bahawal Victoria Hospital, Bahawalpur; Sheikh Zayed Hospital, Rahim Yar Khan and Nishtar Hospital, Multan.

Study Population and Eligibility

Registered Nurses from 3 tertiary care hospitals of Punjab were selected. Bahawal Victoria Hospital, Bahawalpur; Sheikh Zayed Hospital, Rahim Yar Khan and Nishtar Hospital, Multan were the study setting. Inclusion criteria were: clinical staff working in Cardiology Departments of the three hospitals; registered Nurses; working in respective departments for at least six months. People on extended leave from work, administrative staff within the hospitals and those who declined to participate in the study were excluded from the study.

Sample Size and Sampling Procedure

Using the proportionate sampling technique 140 nurses from the three aforementioned hospitals were recruited for the study. Participants were recruited in proportions equal to the nursing workforce in respective cardiology departments of the hospitals.

Data Collection Instrument

The tool used for data collection consisted of four sections of a questionnaire. Section A comprised a number of items regarding the background and professional characteristics of the participants (A). This was followed by a number of items regarding the cardiovascular professional training (B) as well as the organizational as well as the patient-care factors (C) that could affect the wellness of nurses. The organizational and patient-care as well as the wellness items were rated on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Statistical Analysis

All analyses were performed using SPSS software. The frequencies and percent were calculated for the most of the variables (categorical variables) and means and standard deviations were calculated for the scaled data (variables). Pearson correlation was calculated to assess the relationships between organizational and patient care factors and the nursing wellness. Multiple linear regression was performed to identify the most predictors of the nursing wellness. All tests were conducted at .05 level of significance.

Ethical Considerations

The study was granted ethical clearance from appropriate sources concerned. In addition permission was granted from sources concerned in respective hospitals where data were to be collected from study participants. Participants were provided with information about purpose and scope of the study and that they were dealing with a confidential and anonymous research study. Furthermore, it was made clear that their participation in the study was voluntary, and they could withdraw from study at any stage without any repercussions.

Results

The study consisted of 140 nurses working in 3 tertiary-care hospitals in Punjab. The highest proportion of the respondents from these hospitals were from Nishtar Hospital, Multan (55; 39.3%), followed by Bahawal Victoria Hospital, Bahawalpur (48; 34.3%) and Sheikh Zayed Hospital, Rahim Yar Khan (37; 26.4%). Hence, the highest proportion of participants in the study consisted of the nurses from Nishtar Hospital, Multan followed by the other two hospitals. All 140 respondents (100%) were analyzed in this study.

Demographic and Professional Characteristics

The following table provides demographic information and other relevant data for the 140 participants who will be included in the study. The largest group of study participants are 26- to 30-years-old females who hold a BSN (Generic) degree and have 2-5 years of experience as a clinician. In addition, the largest group of study participants has 1-3 years of experience at their respective workplaces (45.0%). The largest number of participants are assigned to the Cardiology Ward (29.3%), and 58.6% of the participants have some level of research/training exposure.

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Table 1: Demographic and Professional Characteristics of Respondents (N = 140)

Characteristics	Category	n	%
Age	≤25 years	18	12.9
	26–30 years	62	44.3
	31–35 years	38	27.1
	>35 years	22	15.7
Gender	Male	16	11.4
	Female	124	88.6
Nursing Qualification	Diploma Nursing	31	22.1
	BSN (Generic)	68	48.6
	Post-RN BSN	36	25.7
	MSN	5	3.6
Total Clinical Experience	<2 years	21	15.0
	2–5 years	59	42.1
	6–10 years	38	27.1
	>10 years	22	15.7
Experience in Current Setting	<1 year	24	17.1
	1–3 years	63	45.0
	4–6 years	36	25.7
	>6 years	17	12.1
Clinical Area	Cardiology Ward	41	29.3
	CCU	39	27.9
	Cardiac ICU	26	18.6
	Cath Lab	12	8.6
	Cardiac Emergency	22	15.7
Research/Training Exposure	Yes	82	58.6
	No	58	41.4

Reliability Statistics

Reliability analyses provided acceptable to good internal consistency for all subscales (alpha coefficients = .769 to .853). The total instrument of 22 items also scored well with an alpha coefficient of .871, indicating that the instrument has satisfactory reliability for measurement of workload and of nursing wellness.

Table 2: Reliability Analysis of the Research Instrument

Scale/Subscale	Items (n)	Cronbach's α	Reliability
Workload and Staffing	4	.812	Good
Leadership and Environment	4	.784	Acceptable
Teamwork and Patient Demands	4	.769	Acceptable
Nursing Wellness	10	.853	Good
Overall Questionnaire	**22**	**.871**	**Good**

Descriptive Statistics

The highest scores for the average assessment for all of the areas of focus were for the areas of Workload and Staffing Stress with a mean score of 4.16 (SD=0.72) followed by the area of Patient Care Demands with a mean score of 4.06 (SD=0.65). The average score for the area of Overall Nursing Wellness was 3.09 (SD=0.71). The lowest score for the average assessment for all of the areas of focus for the nursing staff at this hospital was for the area of Leadership and Support for Nurses with a mean score of 2.96

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(SD=0.84). The Skewness and Kurtosis for all of the data for all of the areas of focus were within acceptable or within the limits of indicators of normality.

Table 3: Descriptive Statistics and Distribution of Study Variables

Study Variable	N	Mean	SD	Skewness	Kurtosis
Workload & Staffing Stress	140	4.16	0.72	−0.681	0.214
Leadership & Support	140	2.96	0.84	−0.112	−0.421
Patient Care Demands	140	4.06	0.65	−0.542	0.108
Overall Nursing Wellness	**140**	**3.09**	**0.71**	**−0.084**	**−0.315**

Workload and Nursing Wellness

None of the between group differences were statistically significant for Workload & Staffing Stress ($F(2,137) = 0.779$, $p = .461$), Leadership & Support ($F(2,137) = 1.312$, $p = .273$) or Overall Nursing Wellness ($F(2,137) = 0.903$, $p = .408$). Hence, there were no statistically significant differences between the three groups for any of the outcomes studied in this evaluation.

Table 4: One-Way ANOVA of Workload and Nursing Wellness by Group

Outcome Variable	Between-Group SS	Within-Group SS	df	MS	F	p
Workload & Staffing Stress	0.814	71.594	2, 137	0.407	0.779	.461
Leadership & Support	1.842	96.178	2, 137	0.921	1.312	.273
Overall Nursing Wellness	0.912	69.198	2, 137	0.456	0.903	.408

Workload, Support, Patient Care Demands, and Nursing Wellness

The Pearson correlations showed some significant associations between the Nursing Wellness scores and several of the key work environment scores. Workload & Staffing Stress scores were significantly negatively correlated with the Nursing Wellness scores ($r = −.468$, $p < .001$). The Leadership & Support scores were significantly positively correlated with the Nursing Wellness scores ($r = .512$, $p < .001$). The Patient Care Demands scores were significantly negatively correlated with the Nursing Wellness scores ($r = −.394$, $p < .001$). This pattern indicates that greater demands at work, a greater workload and stress from having to find and keep 'adequately' staffed to meet patient care needs are associated with low levels of nursing wellness. Strong leadership and good support are associated with higher levels of wellness.

Table 5: Pearson Correlations Among Workload, Support, Patient Care Demands, and Nursing Wellness

Variable	1	2	3	4
1. Workload & Staffing Stress	1	−.284**	.491**	−.468**
2. Leadership & Support	−.284**	1	−.182*	.512**
3. Patient Care Demands	.491**	−.182*	1	−.394**
4. Overall Nursing Wellness	−.468**	.512**	−.394**	1

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

**Correlation is significant at the 0.05 level (2-tailed).

Overall Nursing Wellness

The regression model was statistically significant, $F(3, 136) = 32.881$, $p < .001$. The three variables of Workload & Staffing Stress, Leadership & Support and Patient Care Demands together predicted the variable of Overall Nursing Wellness.

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Table 6: ANOVA Results for Multiple Regression Predicting Overall Nursing Wellness

Model	Source	SS	df	MS	F	p
1	Regression	29.446	3	9.815	32.881	<.001
	Residual	40.664	136	0.299	—	—
	Total	**70.110**	**139**	—	—	—

Dependent variable: Overall Nursing Wellness. Predictors: Workload & Staffing Stress, Leadership & Support, and Patient Care Demands. N = 140.

Multiple regression models were found to be statistically significant. $F(3,136) = 32.881 (p < .001)$. The three independent variables of Workload & Staffing Stress, Leadership & Support and Patient Care Demands together predicted the Overall Nursing Wellness score for 140 samples.

Table 7: Multiple Regression Model Predicting Overall Nursing Wellness

Model	Predictors	F	df	p-value	Outcome
1	Workload & Staffing Stress; Leadership & Support; Patient Care Demands	32.881	3, 136	<.001	Overall Nursing Wellness

a. Dependent Variable: Overall Nursing Wellness

Discussion

The highest ranking work-related concern for the average score was indicated by the issue of workload and staffing stress, with an average score of 4.16 (SD = .72) followed by the high average score of 4.06 (SD = .65) for patient care demands. The lowest average score of 2.96 (SD = .84) was for leadership and support. Clearly the major work-related concerns for nurses center around the issues of their workload and staffing. These are found by Shin et al. (2018) to be two of the main issues that lead to nurse outcomes of burnout, dissatisfaction, fatigue, and decreased well-being. Also that an increase in the nursing workload results in an increase in nurse fatigue and burnout and a decrease in quality patient care. When looking at the hospital work environment Simonetti et al. (2021) found that the work environment (organizational) was significantly associated with nurse burnout. Thus these work-related concerns of nurses need to be addressed in conjunction with other organizational conditions.

However, the strongest positive correlation was found for leadership and support with overall nursing wellness ($r = .512$, $p < .001$). Supportive leadership, as an organizational resource may be very important in order to safeguard the well-being of nurses in demanding work environments. Relational, supportive and constructive leadership is associated with work-related well-being and low levels of burnout (Niinihuhta & Häggman-Laitila, 2022). Other forms of leadership, for example ethical leadership are positively related to the well-being of nurses. Workplace factors explain this relationship (Si et al., 2023). In order to improve the work environment of nurses, various interventions are developed in order to change various aspects of the work environment of

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nurses. A systematic review was conducted and evaluated the effects of these interventions on a variety of outcomes, such as on nurse-related and organizational outcomes (Paguio et al., 2020). The work environment of nurses is also an important mediator through which leadership influences the occupational outcomes of nurses, in addition to burnout (Lee et al., 2019). Communication, participation, support and a positive clinical environment are examples of leadership practices that are believed to be effective in improving the work environment of nurses and, in turn, their occupational outcomes. The multiple regression model explained 51.8% of the variance in overall wellness, $F(3, 136) = 32.881$, $p < .001$. The view that workload-related factors and organizational factors contribute to the occupational health of the nurse, rather than a single dimension (Shalak et al., 2021), is supported by the present findings. Furthermore, it has been reported that the staffing and the nursing work environment of the nurse are the two key factors associated with burnout, fatigue, job satisfaction, and intentions to leave or retire among 346 nurses (Bae, 2021). Moreover, the workplace is considered to be a setting for health promotion (Cohen et al., 2023). Thus, improving the nursing wellness will require an integrated approach that includes addressing of the issues related to the staffing, the demands of the patient care, the effective leadership and a variety of strategies for creating a healthier clinical work environment.

Conclusion

The study concludes that workload and staffing stress and patient care demands were significantly associated with poorer nursing wellness, whereas leadership and support were positively associated with wellness, and the combined regression model significantly predicted overall nursing wellness, highlighting the importance of organizational working conditions in nurses' well-being. Based on these findings, healthcare administrators should ensure adequate staffing, optimize workload and patient allocation, strengthen supportive and responsive leadership, improve teamwork and workplace support, and introduce regular nursing wellness and stress-management initiatives. Particular attention should be given to high-demand clinical areas to promote a healthier work environment, enhance nurses' well-being, and support sustainable quality patient care.

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