

# Nursing Workload and Level of Patient Satisfaction with Nursing Care in Cardiology Department at Tertiary Care Hospitals Pakistan

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## ABSTRACT

**OBJECTIVE:** The objective of the current study was to analyze nursing workload and patient satisfaction in Civil Hospital, Karachi.

**METHODOLOGY:** A cross-sectional analytical study was conducted at the cardiology department of Dr. Ruth K. M. Pfau Civil Hospital Karachi after approval from the ethical committee and written consent from all enrolled patients. Data were collected from May to October 2018 and a purposive sampling technique was used, a total of 162 patients participated, including age > 18 years and hospital stay > 2 days, and unconscious patients were excluded. Two questionnaires were adopted: Nursing workload and patient safety and modified Heather K. Laschinger Research Tool patient satisfaction with the quality of nursing care questionnaire (PSNCQQ). The data were analyzed through SPSS 20

**RESULTS:** Higher means ( $3.91 \pm 0.276$ ) score of patient satisfaction was found in the adequate workload group of nurses as compared to more work loaded ( $2.948 \pm 1.06$ ) nurses. 04 care-related indicators were significantly associated with nursing workload (Injury, infection, bedsore, allergic reaction from any side effects of medications) while 03 were not significantly associated (urinary tract infection, confused identity of patient and wrong medication) by considering P value < 0.05.

**CONCLUSION:** The findings of the study showed that the majority of the patients were satisfied with those nurses who had adequate workload and four care-related indicators were significantly associated with the nursing workload.

**KEYWORDS:** Nurses, Workload, Nursing care indicators, Satisfaction, Cardiology ward, Tertiary Care Hospital.

*This article may be cited as:* Hussain S, Razzaque MA, Shah H, Lashari MN, Wahid A. Nursing Workload and Level of Patient Satisfaction with Nursing Care in Cardiology Department at Tertiary Care Hospitals Pakistan. J Liaquat Uni Med Health Sci. 2021;20(03): 241-5. doi: 10.22442/jlumhs.2021.00846

## INTRODUCTION

Nurses are forefront health care professionals, most distinctive and involved with the patient. They are busy 6 to 12 hours duty a day and 6 days per week which is almost equal to 1/3 of the hospital cost<sup>1</sup>. Globally, 30% of the budget increased in hospitals due to increased nursing workload<sup>3</sup>. Management of nursing workload is a standard of the nursing task according to defined criteria of nurse to patient ratio in hospitals, which is helpful to ensure the satisfaction of patients in the provision of nursing care while violation of standards raises nursing workload followed by dissatisfaction<sup>4</sup>. Researchers have found out that well-equipped and well-structured hospitals cannot provide satisfactory nursing care without following well-defined standards of nurse to patient ratio<sup>5</sup>. According to Health Ministry (2018), a nurse should be assigned 3 patients per shift in the cardiology ward, and 1 is to 1 ratio or a maximum of 2 patients per nurse per shift in the coronary care unit (CCU)<sup>6</sup>. Pakistan Nursing Council (PNC) also made clear policy/criteria of nurse to patient ratio for the general ward (one nurse should be assigned 10 patients) and for ICU (1 nurse should be assigned, 2 patients). It is not

implemented in most of the health care systems of Pakistan, hence nurses are overworked (1 nurse is being assigned 50 patients per shift)<sup>7</sup>. Studies showed that the primary intention of measuring nursing workload is to notify the manager to develop a plan and implement policies in the provision of nursing services to manage the work of nurses in an acceptable manner<sup>8</sup>.

Nationally and internationally, extensive descriptive studies have been conducted related to nursing workload and patient satisfaction. Calculating nurse to patient ratio is the most important determining factor of assessing patient satisfaction, which is a positive and emotive behavioral response of the client to their experiences and predefined set criteria<sup>9</sup>. Therefore, it depends on the compatibility of hopes of best-fostering nursing care and his apprehension of genuine care that he or she acquired<sup>10</sup>. An additional 1 patient in a nurse assignment per shift increases the probabilities of incidences like failure to rescue, burnout of nurses, job frustration that might result in an increased proportion of patient dissatisfaction<sup>11</sup>. According to the Systems Engineering Initiative for Patient Safety (SEIPS), overburdened nurses are not

capable to provide competent and proficient services to patient<sup>12</sup>. The existing literature points out that inappropriate tasks of nurses can compromise the excellence of nursing care that can potentially threaten patient satisfaction<sup>13</sup>. The current study assessed the prevalence of nursing workload and its indicators which are the root causes of patient dissatisfaction in the cardiology department at tertiary care hospitals in Sindh, Pakistan.

**METHODOLOGY**

This Cross-sectional Analytical study was approved by the Institutional review board (IRB) of Dow University of Health Sciences and written consent had been taken from all enrolled patients. A total of 162 patients who were hospitalized in the cardiology department of Dr. Ruth K. M. Pfau Civil Hospital Karachi participated. Data were collected from May to October 2018 and a purposive sampling technique was used. Including age > 18 years and hospital stay > 2 days. Those who were unconscious during the study period were excluded. For data collection, two questionnaires were adopted. The first questionnaire was related to nursing workload and patient safety with a mixed-method design<sup>14</sup>. It consisted of demographic information ( age, gender, marital status, education level, the patient admitted through, patient length of stay at the hospital, number of times hospitalized.), care-related indicators( fall/injury during a hospital stay, hospital-acquired infection during hospital stay, skin problems from being bedridden, allergic reaction from any side effects of medication, catheter-associated or urinary tract infection, patient identity confused with another patient, given wrong medication), nursing workload indicators(number of nurses and in-patients per day). The second questionnaire was adopted from a modified Heather K. Laschinger Research Tool patient satisfaction with the quality of nursing care questionnaire (PSNCQQ)<sup>15</sup>. It consisted of 5 point Likert scale as:Excellent =5, Very good =4, Good = 3, Fair = 2, Poor =1.(Maximum score 80 and the minimum score 16). A patient who obtained a score from 16 to 40 =dissatisfied and 57 to 80=satisfied. The data were analyzed through SPSS 20. For quantitative variables, Mean±SD and Qualitative variables frequency and percentage were used. Binary logistic regression was used to find out the association between the nursing workload and patient satisfaction. Cross tabulation was used to show the distribution of patient satisfaction with nursing care and other parameters. The Chi-Square test was applied to find out the association of patient satisfaction with other parameters by considering the significance level at 5%.

**RESULTS**

It is found that the mean score of patient’s satisfaction was significantly different among different categories

of patient’s admission i.e. P-value =0.0060. The least score of patient satisfaction was observed in those patients who were referred from another facility (3.22±1.04); which is statistically different from others. It is observed that the mean score of patient’s satisfaction was statistically different among a different number of hospitalizations (in the last 2 years) i.e. P-value = 0.008. The level of patient satisfaction was high in those patients who visited the hospital 3-4 times in the last 2 years which was 3.65±0.744. (Table: I)

**TABLE I: DEMOGRAPHIC CHARACTERISTICS AND PATIENT SATISFACTION**

Characteristics	N (%)	Mean±SD	P-value		
Patient's age (Years)	25 -35	53 (32.7)	3.35±0.834		
	36 – 45	49 (36.2)	3.32±1.119		
	46 – 55	23 (14.2)	3.73±0.688	0.304	
	56 – 65	23 (14.2)	3.565±0.506		
	66 and above	14 (8.6)	3.64±0.633		
Gender	Male	64 (39.5)	3.48±0.872		0.753
	Female	98 (60.5)	3.43±0.920		
Educa-tional level	Primary	50 (30.9)	3.68±0.74	0.050	
	Secondary	63 (38.9)	3.22±1.08		
	Graduate	33 (20.4)	3.54±0.505		
	Post Graduate	16 (9.9)	3.50±1.03		
Marital Status	Single	89 (54.9)	3.42±0.951	0.898	
	Married	71 (43.8)	3.49±0.843		
	Divorced	02 (1.2)	3.50±0.707		
Patient admitted through	Emergency Department	84 (51.9)	3.58±0.763 <sup>a</sup>	0.0060*	
	Referred from another facility	58 (42.0)	3.22±1.04 <sup>b</sup>		
	Admitted through to the unit	10 (5.2)	4.00±0.0 <sup>a</sup>		
Length of stay at the hospital	less than 10 days	137 (84.6)	3.49±0.858	0.218	
	More than 10 days	25 (15.4)	3.25±1.11		
Times Number of hospitaliza-tions (In last 2 years)	1- 2 Times	39 (24.1)	3.28±0.916 <sup>a</sup>	0.008*	
	3 - 4	87 (53.7)	3.65±0.744 <sup>b</sup>		
	4 + Times	36 (22.2)	3.16±1.10 <sup>a</sup>		

Significant Level at <0.05

A 4 out of 7 care-related patients indicators were significantly associated with nursing workload whereas 3 out of 7 were not associated with the



52.4% the patient was significantly ( $p < 0.05$ ) satisfied with nurses who has adequate workload which was supported by cross-sectional studies which were conducted in England, Singapore<sup>15,16</sup>. Another study which was held among Canadian nurses, favoring our findings that higher workload put a negative impact on patient outcome<sup>17</sup>. Furthermore, a study which was described that potential endangering cause of patient safety and satisfaction is fatigue and stress of nurses<sup>18</sup> these conclusions are not supported with our study findings.

The present study also highlighted the care-related indicators in which four indicators such as injury, infection, bedsore, allergic reaction because of adverse effects of any medication during hospitalization were significantly ( $P < 0.05$ ) associated with the nursing workload. These findings were consistent with cross-sectional studies which found a significant association of nursing workload, patient satisfaction, and its outcome i.e. urinary tract infection and injuries, bedsores, medication errors, and communication gaps. These studies suggested that a proper nurse-to-patient ratio might be practiced to avoid the adverse events of patient safety<sup>19,20</sup>.

This study found that the means score of patient satisfaction was significantly different among different categories of patients' admission. The least score of patient satisfaction was observed in those patients who were referred from another facility; which is statistically different from others, it might be due to different nursing workloads. It was also observed that the mean score of patient satisfaction was statistically different among a different number of hospitalizations (in the last 2 years). The level of patient satisfaction was high in those patients who visited the hospital 3-4 times in the last 2 years which is  $3.65 \pm 0.744$ . Similar findings were supported by study by WHO in Turkey in 2021<sup>21</sup>, while a study conducted by Sharew NT 2018<sup>22</sup> in Ethiopia found out that educational status and patient who had admission more than two times significantly influenced patient satisfaction. Furthermore, our study did not show significant differences concerning age, gender, marital status, educational level, and length of stay with patient satisfaction, the same findings were found in a study in Saudi Arabia in 2013<sup>23</sup>. In addition, unlikely findings were revealed by our study that the majority of participants were unmarried and their age lies between 25-35 years, which was supported by United States cohort study<sup>24</sup> and contradicted by many studies<sup>21-23</sup>.

#### **Limitations of the study:**

The existing study was a cross-sectional analytical study which could only find out the present factors of nursing workload and couldn't establish causality and effect, which need further evaluation by applying experimental study design

It was limited to analyze solely nursing workload and

level of patient satisfaction by considering care-related indicators and nursing workload indicators.

Furthermore, this study was only conducted in one public sector, its results can be tested further in private sector hospitals in Pakistan.

#### **CONCLUSION**

The findings of the study highlighted that majority of the patient was satisfied with those nurses who had adequate workload. Four care-related indicators were significantly associated with nursing workload likewise: injury, infection, bedsore, and allergic reaction from side effects of medications. For further investigation, confounding factors for instance: physical distance of cardiology ward, sudden critical condition of the patient, and other possible factors that might bring more significant results regarding nursing workload.

**Ethical Permission:** Dow University of Health Sciences Karachi, ERC letter No. IRB-982/DUHS/Approval/2018/982/67, dated 10-05-2018.

**Conflict of Interest:** There is *no* conflict of *interest among the authors*.

**Financial Disclosure / Grant Approval:** There was no funding agency.

**DATA SHARING STATEMENT:** The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions

#### **AUTHORS CONTRIBUTIONS**

Hussain S: Conceived idea, designed writing  
Razaque MA: Drafting manuscript, Literature review  
Shah H: Review and final approval of manuscript  
Lashari MN: Statistical analysis & editing of manuscript  
Wahid A: Data collection and data entry

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