



Original Article

Factors Affecting Nurses Performance Working in Intensive Care Units at Tertiary Care Hospitals Peshawar

Ihsan Ullah¹, Sardar Ali², Rashid Hussain³, Akhtar Hussain⁴, Muhammad Iqbal², Rafsoon⁴ and Amir Sultan⁵*

¹Department of Nursing, Mehboob Medical Institute, Peshawar, Pakistan

²Institute of Nursing Sciences, Khyber Medical University, Peshawar, Pakistan

³Department of Nursing, Sarhad Hospital for Psychiatric Disease, Peshawar, Pakistan

⁴Department of Nursing, Khyber Teaching Hospital, Peshawar, Pakistan

⁵Tasleem College of Nursing & Health Sciences, Swat, Pakistan

ARTICLE INFO

Key Words:

Factors, Performance, Nurses, Intensive Care Unit, Peshawar

How to Cite:

Ullah, I. ., Ali, S. ., Hussain, R. ., Hussain, A. ., Iqbal, M. ., Rafsoon, ., & Sultan, A. (2023). Factors Affecting Nurses Performance Working in Intensive Care Units at Tertiary Care Hospitals Peshawar: Nurses Performance Working in ICU. *Pakistan Journal of Health Sciences*, 4(06).

<https://doi.org/10.54393/pjhs.v4i06.829>

***Corresponding Author:**

Amir Sultan
 Tasleem College of Nursing & Health Sciences, Swat, Pakistan
amirsultan204@gmail.com

Received Date: 4th June, 2023

Acceptance Date: 26th June, 2023

Published Date: 30th June, 2023

ABSTRACT

Specialized nurses play a significant role in the capacity of standard health care across the globe. Many factors in intensive care units (ICUs) are present that could waste nurses' time and energy. **Objectives:** To determine the factors affecting job performance of nursing staff working in Peshawar, Khyber Pakhtunkhwa, Pakistan. **Methods:** In this Descriptive Cross-sectional study, total of 325 nurses were selected through census sampling working in ICUs of five tertiary care hospitals Peshawar from May, 2021 to September 2021. The data collected by using adapted research instrument which had two parts: 1-demographic data, 2-nursing performance factors/obstacles. The data were analyzed with the descriptive and inferential statistics by using SPSS version-22. **Results:** The most common factors were: delay in getting medications from pharmacy (71.79%), improper patient's beds space in ICUs (69.55%), distraction caused by the family' members (62.82%) and insufficient space to sit down and do paper-work (57.69%). In the field of technology shortage of equipment's (52.56%) and using equipment's in poor condition (41.7%) were the most frequent obstacles. Gender, age and specialization in ICU is associated with factors that affect the performance of ICU nurses. **Conclusions:** Many obstacles such as delay in getting medication from pharmacy and having to use equipment in poor condition can be managed by simple interventions such as implementation of centralized pharmacy system as well as biomedical engineering system. Furthermore, management of policies and enhancing teamwork are needed to reduce obstacles such as inadequate information from physicians and disorganized unit.

INTRODUCTION

Nursing is a career inside the health care system concentrated on the care of families, individuals, and societies so they may maintain, recover, and attain optimum health and standard of life. Nurses might be distinguished from other health care workers by their aptitude of patient care, trainings, and scopes of practices [1]. Nurses perform in several spheres with different levels of prescription power. A lot of nurses offer care within the organizational scope of general doctors, and this customary character has formed the public appearance of

nurses as care givers. However, nurse practitioner is allowed by most authorities to practice self-sufficiently in a diversity of situations. From the time of postwar age (19th Century), nursing education has undertaken a procedure of diversification in the direction of specialized and advanced credentials, in which several of the traditional guidelines and provider characters are changing [2]. The capability to deliver quality and safe care to patients is the principal objective and motivation for nursing professionals. However, approximately 53,000 people die each year in

hospitals because of preventable therapeutic faults. Nurses and the standards of their working environments, together with their professional, physical, and technological features, can play a vital role in decreasing errors and improving patient well-being in the hospitals [3]. In Intensive care units (ICUs), the nursing care is mostly characterized as fast-paced, emotionally stimulating, and complex matter. The patients in ICU are critically ill and need persistent observation and sudden decision-making from nursing workforces. The potential for mistakes in such complex working settings is much higher than any other serving area. In intensive care units (ICU), there is a wide range of elements persuading nurses' performances. Critical health care units are the crucial portions of hospitals which offer patients quality care with serious and emergency situations [4]. A survey conducted in Iran in 2016, which shows that the total 3825 ICU beds with the possession rate of over 90 percent from serious patients [5]. In ICUs, performance of nurses has vital and direct influence on the health conditions of crucially ill patients. Sustaining patient care and increasing the standards of precaution are elementary confronts in ICUs. It has been estimated that each day, approximately 200 different measures and responsibilities are performed for each ICU client, which shows the higher occupational burden in such divisions [6]. The elements that affect performances create a challenge in delivering the regular treatment and make the resources of nursing without any extra benefits for the patients [7]. The research study consequently, concentrates on recognizing factors which affect the nursing performance in critical care units. Conversely, there was shortage of evidence on level of nursing performances in research studies. Thus, the aim of this study was to evaluate elements affecting nursing performance employed in ICU of Tertiary Care Hospitals Peshawar.

METHODS

In the Intensive Care Units of five tertiary care hospitals, a cross-sectional study was conducted; From May 2021 to September 2021, in Peshawar, Khyber Pakhtunkhwa, Lady Reading Hospital (LRH), Khyber Teaching Hospital (KTH), Hayatabad Medical Complex (HMC), Northwest General Hospital (NW-GH), and Rehman Medical Institute (RMI). There were five hospitals, three of which were public and two of which were private, with varying bed capacities. All the nurses working in the intensive care unit of these five hospitals were the total population, then through online sample size the sample was calculated using 95% confidence level with 5% margin of error and having 80% prevalence rate the total the total sample was 325. The study participants/subjects were selected using simple

random sampling method. The inclusion criterion for the study was a registered nurse who provided direct care to the patient in ICU. Nursing staff that were on leaves and not-present in the work area or employed on managerial position were excluded from the study. Data collection tool on factors affecting performance of nurses was adapted with slight modification used in another study which was developed by Gurses and Carayon [8]. There were two sections to the questionnaire: Initial segment comprises of segment information of study participant, for example, age, gender, level of education, ICU specialty, and number of years spent in the ICU. Second part of research tool comprised of 14 questions in which twelve question response is dichotomous (yes/no) while the remaining two question responses are having five-point Likert scale (1= Best, 2=Appropriate, 3= Medium, 4= inappropriate, 5=worst). The questionnaire reliability of the tool with Chronbach Alpha is 0.865. Questions to evaluate nurses' performance and factors affecting nurses' performance make up the assessment tool. Five experienced facilitators used a planned English version of a self-administered questionnaire to collect the data. Inconsistencies and missed values were being looked for in the completed questionnaires. Each member of staff in each of the 19 intensive care units of the five tertiary care hospitals in Peshawar completed the questionnaires over the course of three shifts. The researcher properly coded and edited the data prior to entering it. Data were analyzed by SPSS Version 22.0 for its interpretation and presentation. Percentages and frequencies were calculated for categorical variables (Gender, Age, Qualification and Experience etc.), while mean and standard deviation were calculated for continuous variables. Pearson Chi-Square test was used to determine association of factors affecting performance of nurses with demographic variables such as gender, age and education. Approval was taken from ASRB, ERB, Hospital's Departments, and Participants. All ethical standards were followed during data collection and analysis. The study purpose, potential benefits, risks, implications to improve the overall performance of nurses by prevention measures regarding factors affecting nurses' performance working in intensive care units were explained. Participants were given the option to participate in the study if they so choose, as well as the option to withdraw at any point during the data collection process. Members' freedoms of secrecy and privacy were guaranteed.

RESULTS

The total participants of the study were 312, where the number of male participants was higher than female nurses. The age group 25-34 years was in majority

compared to other age groups. Nurses who qualification was diploma in nursing was in the majority, while the participant's qualification of ICU was not specialized. The 1-5 years' experience nurses were in maximum number compared to other experience nurses (Table 1).

Table 1: Demographic data of the participants

Variables	Frequency (%) N=312
Gender	Male 158(50.64)
	Female 154(49.36)
Age	Less than 25 Years 57(18.3)
	25-34 Years 174(55.8)
	35-44 Years 64(20.5)
	45-54 Years 16(5.1)
	55-64 Years 1(.3)
Qualification	Diploma in Nursing 195(62.50)
	BSN 114(36.54)
	MSN 03(0.96)
Specialty in ICU	Yes 97(31.09)
	No 215(68.91)
Experience in ICU	1-5 249(79.9)
	6-10 51(16.3)
	11-15 12(3.8)

Table 2 illustrate factors that affect the performance, that medication from pharmacy is delayed (71.9%), followed by too much distance in patient room (69.5%), then looking for searching supplies waste time (64.1%), disturbance from family (62.8%), lack of space for documentation (57.7%), waiting for instrument that are using by others (52.6%), and information of doctor are insufficient (50.3%) are the major factors that affect the performance of ICU nurses (Table 2).

Table 2: Factors affect the performance of ICU Nurses

Item	Yes	No
Disturbances from family	196 (62.8%)	116 (37.2%)
Delays in obtaining medication from the pharmacy	224 (71.7%)	88 (28.3%)
Waiting for instruments because someone else was using it	164 (52.6%)	148 (47.4%)
Lack of space for documentation	180 (57.7%)	132 (42.3%)
Looking for searching supplies waste time	200 (64.1%)	178 (35.9%)
Patient charts take too much time	154 (49.4%)	158 (50.6%)
Looking for new medical orders	100 (32.1%)	212 (67.9%)
Looking for equipment's when are not in their right place	104 (33.3%)	208 (66.7%)
Handing over at the end of shift take too much time	129 (41.3%)	183 (58.7%)
The information of doctor is insufficient	157 (50.3%)	155 (49.7%)
Too much distance in patients' room	217 (69.5%)	95 (30.5%)
Equipment that are too much used	140 (44.8%)	172 (55.2%)

The questions regarding late-timely help from nursing assistant and noisy quiet workplace during shift having 5-point Likert scale, 5-best, 4-appropriate, 3-medium, 2-inappropriate, and 1-worst. Table 3 shows that (59%) of the nurses consider that when help required the nursing

assistant is late (59%), while only (12%) considers that their response is timely. In environmental condition regarding workplace, Majority (24%) replied that it was somehow noisy, 22% replied it was noise while only 20% replied that it was quiet (Table 3).

Table 3: Factors that affect the performance of ICU Nurses

Factors	5	4	3	2	1
The help I received from nursing assistants was timely-late.	184(59%)	52(16%)	24(8%)	15(5%)	37(12%)
During my shift today, my workplace was noisy-quiet.	63(20%)	64(21%)	41(13%)	76(24%)	68(22%)

Table 4 shows that the gender, age and specialization in ICU are associated with factor that affect the performance of nurses (Table 4).

Table 4: Association of affecting factors with selected variables

Factor that affects performance	Gender	Age	Specialty in ICU
	0.000	0.006	0.001

DISCUSSION

The total participants of the study were 312, where the number of male participants was higher than female nurses. The study was conducted with aim to identify the factors that affect the performance of nurses working in intensive care unit. In the current study the five leading factor that affects the performance of nurses was; medication delay from pharmacy (71.9%), followed by too much distance in patient room (69.5%), looking for searching supplies waste time (64.1%), disturbance from family (62.8%), and lack of space for documentation (57.7%). A study conducted in Iran 2018 that most common factor is too much calls from the family member (75%) followed by interruption by family members (72.9%), while delay of medication from pharmacy was (54.6%). Insufficient place for work contributes (52.9%), and distance from one room to another (51.6%) [9]. A study conducted by Ahmed *et al.*, demonstrate the factors that became an obstacle in nurses' performance. The work place is crowded (64.7%), lighting of work place (63.9%), space between patient beds (63%), distraction by family member (61%), and noisy environment (60.5%) [10]. A study conducted by Mohamadi *et al.*, illustrate that family member interruption is the leading cause that increase the workload of nurses [11]. Other studies also reveal that family members interruption are leading obstacle (33.4%) in the performance of nurse [12], while no space for paper work also contributes to nursing performance as an obstacle [13]. Another study findings were different from our results that reveals that; Excessive workload, lack of facilities, inability to control stress, and lack of supervision are the factors that affect the performance of nurses [14]. The present study also illustrates that sterilization and the

use of advance equipment contributes to quality care that improves the patient outcome. Based on the findings of this study it was revealed that (44.8%) of the equipment using in the study setting was old. The study also identifies the shortage of instruments that was reported (52.6%) of the nurses that we waiting because someone is using it and we wait for our turn. Ahmed *et al.*, (2108) was in line with our findings that reveals that (58%) nurses wait for their turn because the instrument is operated by other staff, while (40.3%) concern that the instrument we are using is old [10]. The study of Rajaeian and Masoudi found that (35%) of nurses report that their equipment are old, and (27.5%) show concern that it waste too much time due to deficiency of equipment and wait for our turn [9]. The study of Mashouf *et al.*, found that (43%) of nurses mentioned that the instruments they are using is old [15]. The is also supported by the study of Keshk and Gurses who report that old and short of equipments leads to obstacle in nursing performance [12]. The current study also identifies that incomplete information of doctor (50.3%) and new orders of doctor (32.1%) and is also a barrier that affects the nursing performance. Similarly, the study of Rajaeian and Masoudi found that 48.3% of nurses performance are affected by delay in seeing new medical orders, and 30.4% affected due to inadequate information from physician [9]. The findings are also supported by other studies that reveals that followup of new order and inadequate information is caused by poor interaction and communication among the duty doctor and nurses and became one of a leading factor that affect the performance of nurses [12, 15]. Another study mentioned that additional challenge to self-respect reported by a study was the inter-association of patient and nurse that may occur due to the nurses may not attain a sufficient response from the patients which lead to a feeling of loneliness for both nurses and patients [16]. The current study emphasiz that obstacles are cateogized in findings so intervention is necessary to minimize the impacts of barriers and provide a good enviroemnt for nurses that will improve the patient outcome. Zarrini *et al.*, revealed that competent, skilled, and motivated health care workforces are the basis for well performance of health care systems. The deficiency of nursing labor in healthcare systems especially in ICUs imposes workload on hospitals and decreases person's performances that sequentially become a hurdle to obtain national as well as global development aims. Nurses signify the biggest human resource division in healthcare systems and their performance has a straight impact on health care efficiency. Research reports demonstrated several dynamics which affect the level of nurses' performances [17]. Mahmoodzadeh *et al.*, established parallel results that the nursing occupational performance is termed as the

efficiency of an individual in working his or her responsibilities and roles linked with direct care of patients along with fulfilling the allocated responsibilities and roles efficiently [18]. Another study has classified performance into activities associated with the task performances, technical cores, and actions that sustain the social setting in which technical core must operate circumstantial performances. As a whole, occupational performance in nursing is a multifaceted spectacle with various variables which affect its level, for example work load, individual characteristics, working satisfaction, appreciation of achievements, personal competencies, social support, feedback, organizational climate, supportive communication, and leadership behaviours [19]. Sikorova and Kucova related comparable study that factors inflicting the performances of nursing staffs were recognized negatively for example deficiency of staff appreciation who are carrying out quality and well performances, lack of a formal routine assessment system and poor occupied situations [20]. It is accessible as an approach to manage the nursing care in ICU, concerning knowledge and actions from several professional classifications in a study for consent which interprets into standard in the consideration to the patient's wellbeing requirements [21]. There were few limitations to our research during the course of its completion.

CONCLUSIONS

According to the findings of this research, staff nurses who participated in the study reported a higher level of performance challenges related to the physical work environment, as well as tools related obstacles, for the intensive care nurses that affect their performance. Therefore, to promote quality care and improve patient outcome, tool related barriers should be eliminated while some should be structurally changed.

Authors Contribution

Conceptualization: IU

Methodology: SA, RH

Formal analysis: AH

Writing-review and editing: MI, R, AS

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

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

The authors received no financial support for the research, authorship and/or publication of this article.

REFERENCES

- [1] Chaudoir SR, Dugan AG, Barr CH. Measuring factors

- affecting implementation of health innovations: a systematic review of structural, organizational, provider, patient, and innovation level measures. *Implementation Science*. 2013 Dec; 8: 1-20. doi: 10.1186/1748-5908-8-22.
- [2] Myburgh J, Abillama F, Chiumello D, Dobb G, Jacobe S, Kleinpell R, et al. End-of-life care in the intensive care unit: Report from the Task Force of World Federation of Societies of Intensive and Critical Care Medicine. *Journal of Critical Care*. 2016 Aug; 34: 125-30. doi: 10.1016/j.jcrc.2016.04.017.
- [3] Hooper C, Craig J, Janvrin DR, Wetsel MA, Reimels E. Compassion satisfaction, burnout, and compassion fatigue among emergency nurses compared with nurses in other selected inpatient specialties. *Journal of Emergency Nursing*. 2010 Sep; 36(5): 420-7. doi: 10.1016/j.jen.2009.11.027.
- [4] Meert KL, Clark J, Eggly S. Family-centered care in the pediatric intensive care unit. *Pediatric Clinics*. 2013 Jun; 60(3): 761-72. doi: 10.1016/j.pcl.2013.02.011.
- [5] Moss M, Good VS, Gozal D, Kleinpell R, Sessler CN. A critical care societies collaborative statement: burnout syndrome in critical care health-care professionals. A call for action. *American Journal of Respiratory and Critical Care Medicine*. 2016 Jul; 194(1): 106-13. doi: 10.1164/rccm.201604-0708ST.
- [6] Needham DM, Korupolu R, Zanni JM, Pradhan P, Colantuoni E, Palmer JB, et al. Early physical medicine and rehabilitation for patients with acute respiratory failure: a quality improvement project. *Archives of physical medicine and rehabilitation*. 2010 Apr; 91(4): 536-42. doi: 10.1016/j.apmr.2010.01.002.
- [7] Khalid I, Doshi P, DiGiovine B. Early enteral nutrition and outcomes of critically ill patients treated with vasopressors and mechanical ventilation. *American Journal of Critical Care*. 2010 May; 19(3): 261-8. doi: 10.4037/ajcc2010197.
- [8] Gurses AP and Carayon P. Performance obstacles of intensive care nurses. *Nursing research*. 2007 May; 56(3): 185-94. doi: 10.1097/01.NNR.0000270028.75112.00.
- [9] Rajaeian Z and MasoudiAlavi N. Barriers to nursing performance from the perspective of nurses working in intensive care units. *Journal of Critical Care Nursing*. 2018 Jul; 11(1): 1-6. doi: 10.5812/ccn.64815.
- [10] Ahmed WA, Soliman ES, Shazly MM. Staff nurses' performance obstacles and quality of work life at Benha University Hospital. *Nursing Health Science*. 2018 Mar; 7: 65-71. doi:
- [11] Mohammadi M, Mazloumi A, Kazemi Z, Zeraati H. Evaluation of Mental Workload among ICU Ward's Nurses. *Health Promot Perspect*. 2015;5(4):280-7. doi:10.15171/hpp.2015.033.
- [12] Keshk LI, Qalawa SA, Aly AA. Performance obstacles experiences among critical care nurses in damanhur teaching hospital. *Life Science Journal*. 2012; 9(2): 1044-54. doi:
- [13] Ragab SA, Al Torky MA, Ghallab SA. Relationship between performance obstacles and workload among intensive care nurses at Assiut University Hospitals. *The Malaysian Journal of Nursing (MJN)*. 2017 Oct; 9(2): 45-51.
- [14] Sari DP, Saputera B, Saleh M, Sholihah Q, Daud I. Factors affecting the nurse performance in medical ward. *Indian Journal of Public Health Research and Development*. 2020 Mar1(3): 1479-83.
- [15] Mashouf S, Esmailpour-Zanjani S, Sheikhi AA. The study of factors predisposing nursing errors in intensive care units from selected hospitals' nurses' perspectives in Tabriz. *Journal of Health and Care*. 2013 Jun; 15(1): 25-16.
- [16] Schallenberger CD, Tomaschewski-Barlem JG, Barlem EL, Rocha LP, Dalmolin GD, Pereira LA. Moral sensitivity components identified among nurses from Intensive Care Units. *Revista Brasileira De Enfermagem*. 2019 Feb; 72: 2-8. doi: 10.1590/0034-7167-2017-0202.
- [17] Zarrini KA, Sanagoo A, Jouybari L, Vakili MA, Kavosi A. Evaluation of occupational hazards for nurses in intensive care units of tertiary care centers. *Journal of Nursing and Midwifery Sciences*. 2018 Oct; 5(4): 153. doi: 10.4103/JNMS.JNMS_52_18.
- [18] Mahmoodzadeh Z, Ashktorab T, Naeeni SM. The correlation between Moral Distress and Caring Behaviors of Nurses in Intensive Care Units of Bandar Abbas Hospitals in 2018. *Iranian Journal of Medical Ethics and History of Medicine*. 2019 Mar; 12(1): 82-93.
- [19] Yakusheva O, Costa DK, Bobay KL, Parada JP, Weiss ME. Variability in catheter-associated asymptomatic bacteriuria rates among individual nurses in intensive care units: An observational cross-sectional study. *PLoS One*. 2019 Jul; 14(7): e0218755. doi: 10.1371/journal.pone.0218755.
- [20] Sikorova L and Kucova J. The needs of mothers to newborns hospitalised in intensive care units. *Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub*. 2012 Dec; 156(4): 330-6. doi: 10.5507/bp.2011.046.
- [21] Kuo FH, Huang HM, Sun FK, Lin WJ. Interpersonal communication competence and conflict handling styles of nurses in intensive care units. *Hu Li Za Zhi*. 2019 Apr; 66(2): 67-76.