

Collaboration among Nurses and its Association with the Provision of Routine Nursing Care in Intensive Care Unit

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ABSTRACT

Background: Providing high-quality nursing care is crucial for the well-being and recovery of patients. Nurses play a important role in recovery of patient by various elements of nursing care. Effective delivery of routine nursing care is influenced by various factors, including the collaborative dynamics among nurses. Collaboration among nurses have garnered increasing attention in recent years due to its potential impact on patient outcomes and safety. **Objective:** To assess nurses' inter-professional collaboration level and to determine collaboration among nurses and its association with the provision of routine nursing care in the ICUs. **Study Design:** Cross-sectional correlational design. **Settings:** The study was conducted in the intensive care units of Bahria International Hospital, a private hospital in Lahore Pakistan. **Duration:** The duration of data collection was 09 months after the approval of synopsis from Research Ethical Committee (REC), The University of Lahore. **Methods:** This research was done with a cross-sectional correlational design to examine the association between collaboration among nurses and the provision of routine nursing care in intensive care units (ICUs). The sample of 172 registered nurses conveniently selected from public hospitals. Two modified questionnaires were utilized to collect relevant data: one to assess collaboration between nurses and the second questionnaire to check the provision of nursing care. **Results:** Knowledge checked by NNC scale which showed that 64% of participants have good collaboration, and 36% of participants have poor collaboration. Routine nursing care checked by RNC Questioner which showed that level of routine nursing was good in 65.7%, while found poor nursing care in 34.3% of selected papulation. A Chi-square test was performed to see the association, which showed a significant association between collaboration among nurses and routine nursing because calculated P value is <0.001, (P value is <0.05 taken as significant). **Conclusion:** Based on the results, the findings of this study highlight the positive association between collaboration among nurses and the provision of routine nursing care in the intensive care unit. By promoting a culture of collaboration, healthcare facilities can optimize the delivery of high-quality nursing care in the intensive care unit.

Keywords: Collaboration, Nursing care, Intensive care unit.

INTRODUCTION

Providing high-quality nursing care is crucial for the well-being and recovery of patients in intensive care units. Nurses play an important role in delivering routine nursing care, encompassing a wide range of essential tasks to meet patients' physical, psychological, and emotional needs.¹ However, the effective delivery of routine nursing care is influenced by various factors, including the collaborative dynamics among nurses within the ICU setting. Collaboration among nurses refers to the degree to which nurses work together effectively in providing care to patients in the intensive

care unit. It is measure by the Nurse-Nurse Collaboration Scale (NNC): This scale developed by Dougherty and Larson.² It includes 20 scales of collaboration such as communication, shared process, coordination, and professionalism with four likert scale. According to NNC scale for collaboration among nurse it considers good collaboration if the percentage of total score is 60% or more, if it less than 60% considered as poor collaboration.²

Collaboration among healthcare professionals, particularly nurses, has garnered increasing attention in recent years due to its potential impact on patient outcomes and safety. Effective collaboration promotes

communication, coordination, and mutual decision-making among healthcare team members, fostering a supportive and cohesive working environment.³

A study highlighted the significance of collaboration among nurses in improving patient care and outcomes. Research has shown that effective collaboration enhances care coordination, reduces medical errors, and improves patient satisfaction.^{4,5} However, despite its importance, the relationship between Nurse-Nurse collaboration and the provision of routine nursing care in ICUs remains understudied. Limited empirical evidence exists regarding the impact of collaboration on provision of routine nursing care.⁶

Provision of nursing care refers to any instance in which necessary nursing care is provided to a patient. Such as medication administrations, monitoring of vital signs, skin care, mouth care, feeding to the patient and turning to patient to prevent from bed sore in ICU.⁷

The RNC questionnaire uses to check the provision of nursing care. It includes 16 scales of provision of routine nursing care with five likert scale, and its cut-off value of this is 60%. A score of less than 60% consider poor nursing care. A score of 60% or more consider good nursing care according to a scale. Understanding the association between nurse collaboration and routine nursing care is essential for developing strategies to optimize patient care in ICUs. Identifying the factors that facilitate collaboration among nurses can provide valuable insights into the barriers and opportunities for improving the delivery of routine nursing care.⁸

In a study done by Baggs, the researcher examined the association between nurse collaboration and care coordination in ICUs. The findings indicated that higher levels of collaboration among nurses were significantly correlated with improved care coordination, including timely completion of routine nursing care. The study emphasized the importance of collaborative relationships among nurses in enhancing routine nursing care.⁹

Another study done to explore the relationship between nurse collaboration and medical errors in ICUs. The results revealed that units with higher levels of collaboration had lower rates of medical errors, demonstrating the critical role of collaboration in patient safety and preventing adverse events. The study highlighted the need to foster a collaborative culture among nurses to ensure the delivery of safe and effective routine nursing care.¹⁰

Furthermore, a study focused on the impact of collaboration on patient outcomes in ICUs. The researchers found that units with higher levels of nurse collaboration had better patient outcomes, including lower mortality rates and reduced lengths of stay. The

study emphasized the positive influence of collaboration on the overall quality of nursing care and patient recovery.¹¹

These studies collectively support that collaboration among nurses is vital in providing routine nursing care in ICUs. They highlight the positive impact of collaboration on care coordination, patient safety, and overall patient outcomes. However, despite these valuable insights, further research is still needed to examine the association between nurse collaboration and specific elements of routine nursing care, such as ambulation, patient turning, medication administration, and vital sign monitoring.¹²

By building upon the existing body of knowledge, this research aimed to contribute to the literature by examining the relationship between collaboration among nurses and the provision of routine nursing care in ICUs. It seeks to provide evidence-based findings that can inform healthcare organizations in developing strategies to enhance collaboration among nurses and optimize the delivery of routine nursing care, ultimately leading to improved patient outcomes.¹³

By exploring this association, healthcare organizations can implement targeted interventions and policies that foster a collaborative culture and ensure high-quality nursing care. Therefore, this research investigated the association between collaboration among nurses and the provision of routine nursing care in ICUs by assessing the level of collaboration among nurses and examining its relationship with specific elements of routine nursing care, such as ambulation, patient turning, medication administration, and vital sign monitoring as per criteria of provision of routine nursing care.¹⁴

Collaboration among nurses facilitates effective communication and coordination within the healthcare team, resulting in seamless care transitions, fewer errors, and improved patient safety.¹⁵ Through collaboration, nurses can share vital patient information, collaborate on care plans, and address any concerns or challenges that arise while providing routine nursing care.

Collaboration among nurses promotes a positive work environment characterized by trust, respect, and open communication.¹⁶ When nurses work collaboratively, they can rely on each other for support, seek input from their colleagues, and collectively address challenges or barriers to delivering routine nursing care. This positive work environment contributes to job satisfaction and overall organizational success.¹⁷

METHODS

The cross-sectional descriptive and correlational study design was used to assess the collaboration among nurses and its association with the provision of routine nursing

care in intensive care units. The study was conducted in the intensive care units of Bahria International Hospital, a private hospital in Lahore. Study took 9 months after REC approval. 172 Nurses are calculated with a 95% confidence interval, and 7% margin of error, and the expected percentage of practice among staff nurses is 32.50%.¹⁸

In this study, a convenient sampling technique was used for nurses. Convenience sampling is a non-probability sampling method where units are selected for inclusion because they are the easiest for the researcher to access.¹⁹ Two questionnaires were used to collect data. The first questionnaire gathered data from staff about their collaboration level, which the staff themselves filled out. Participants were recruited by contacting them via the official WhatsApp group for hospital staff.

The nursing supervisor on duty filled out the second questionnaire by checking the patient and cross-checking the ICU flow sheet to identify the quality of nursing care. The data for this study was collected through a combination of self-administered questionnaires and direct observation on the same day, but the time was random.

RESULTS

The sample population of 172 nurses were chosen for the study from the different Intensive Care Units of Bahria International Hospital Lahore. Table 1 demonstrate that the majority, 90.1%, of participants were between the ages of 25-35 years, and 9.9% were from t the age group of 35-45 years. Gender: shows that most participants (142) were female with 82.6% of the population. Male participants were 30 with 17.4% of the population. Experience in Intensive Care Unit: 81.4% of participants had an experience of more than 1 year and less than 2 years, 12.8% of participants had experience of more than 2 years and less than 5 years, whereas 5.8% had an experience of more than 5 years and less than 10 years. Experience in Current Position: Results revealed that 81.4% of participants had an experience greater than 1 year and less than 2 years. 12.8% of participants had experience of greater than 2 years and less than 5 years, whereas 5.8% had experienced more than 5 years to 10 years.

Nursing Collaboration Level: Table 2 shows that 110 of participants with percentage of 64 had good collaboration, while 62 participants with 36 percentage had poor collaboration according to cut off value of NNC scale. Provision of Routine Nursing Care: This table shows that level of routine nursing was good of 113 patients with percentage of 65.7, while 59 patients found with poor nursing care with percentage of 34.3 according to cut off value of PRNC scale. Association between Nursing Collaboration and Routine Nursing Care: In

association table P-value was obtained using a chi-square test. The data analysis revealed a significant association between collaboration among nurses and the provision of routine nursing care in the intensive care unit. This finding emphasizes the importance of effective collaboration and its impact on providing quality nursing care. The high Pearson Chi-Square value of 159.332 with 1 degree of freedom indicates a robust statistical association between the two variables ($p < 0.001$). This result suggests a relationship between the level of collaboration among nurses and the frequency of missed nursing care. The significance of this association underscores the need to address collaboration issues to improve patient care outcomes.

Table 1: Demographic characteristics

	Variable	Frequency (f)	Percentage (%)
Age	25 to 35 years	155	90.1
	36 to 45 years	17	9.9
Gender	Male	30	17.4
	Female	142	82.6
Experience in ICU	≥ 1 year but ≤ 2 years	140	81.4
	> 2 years but ≤ 5 years	22	12.8
	> 5 years to 10 years	10	5.8
Experience in Current Position	≥ 1 year but ≤ 2 years	140	81.4
	> 2 years ≤ 5 years	22	12.8
	> 5 years to 10 years	10	5.8
Total		172	100.0

The actual outcome of the Chi-Square test for goodness-of-fit is presented in last table. The test determines if the proportions of responses in the categories conform to a given pattern and if the sample distribution of this study deviates significantly from the claimed distribution. The sampling technique used was convenient sampling. More significant differences between expected and observed data result in a more excellent chi-square value. The likelihood is more significant when this value is more excellent and there is a statistically significant difference. This study shows that there are statistically significant between collaboration and the provision of routine nursing care. The results revealed a significant association between collaboration among nurses and routine nursing care provision in the intensive care unit, as P-value was significant ($P < 0.001$).

Table 2: Collaboration among Nurses and its association with provision of routine Nursing care

Nursing Collaboration Level	f	%age
Good Nursing Collaboration (Scores 60 and above)	110	64.0
Poor Nursing Collaboration (Scores <60)	62	36.0
Total	172	100.0
Level of Routine Nursing Care	f	%age
Good Nursing Care (Scores 60 and above)	113	65.7
Poor Nursing Care (Scores <60)	59	34.3
Total	172	100.0

Association between nursing collaboration and routine nursing care P-value <0.001, P-value was obtained using a chi-square test.

DISCUSSION

The findings of this research indicate a significance correlation between the collaboration among nurses and the provision of routine nursing care in the ICU. The data analysis revealed a significant statistical relation between collaboration among nurses and the provision of routine nursing care (p value is < 0.001). This results emphasizes the importance of effective collaboration in delivering high-quality nursing care to patients in the intensive care unit. The results of this study suggest that as the level of collaboration among nurses increases, the quality of routine nursing care also improves. Conversely, when there is a lack of collaboration among nurses, there is a higher chance of inadequate routine nursing care.

Promoting a collaborative principles and enhancing communication and teamwork among nurses should be a focus for healthcare organizations. The importance of addressing collaboration issues in the intensive care unit is underscored by the strong statistical association between nursing collaboration and routine nursing care. Improved information sharing, shared decision-making, and more efficient patient care processes can result from effective collaboration, ultimately benefiting patient outcomes. In this study in the portion of demographic data percentage of male nurses were just 17.4%, and age of participants from ages was between 25-25 years which is 90.1% of total population, it also revealed that 9.9% of the sample was between 36 to 45 years. Another study in which 70% of the study group at age 25-35 years, and percentage of males and females were same which was 50% equally, while it contrary with our study in which male Nurses were just 17.4 % while 82.6% were females.²⁰

Regarding to gender, there is an equal number between male and female. These findings supported by a study conducted in Iraq, which found that male and female that show equal percentage 50% male and 50% were female. But, these findings unsupported by a study conducted for improving for collaboration among nurses.²¹

The current study, along with previous research, aims to investigate the association between collaboration among

nurses and the provision of routine nursing care in the intensive care unit. This shared research objective underscores the common interest in understanding the impact of collaboration on patient care outcomes.²²

Similar to past studies, the present research utilizes a cross-sectional design and administers a questionnaire to assess the levels of collaboration and routine nursing care. This methodological similarity ensures comparability of findings and allows for a more comprehensive analysis of the topic.²³

Statistical Analysis: Consistent with previous research the current study employs the chi-square test to assess the association between collaboration and routine nursing care. This statistical approach is widely used in healthcare research and facilitates a straightforward comparison of results across studies.¹⁰ While some previous studies might have focused on diverse sample populations, the current study's sample is specific to a particular intensive care unit setting. Variations in collaboration levels and nursing care provision may exist due to the unique characteristics of this ICU setting.²⁴ Each healthcare setting may have its own unique organizational culture, leadership styles, and communication patterns. These contextual factors could influence the degree of collaboration among nurses and, consequently, the impact on routine nursing care. Thus, the findings of the present study may be specific to the studied ICU setting and may not be entirely generalizable to other healthcare contexts. While some previous studies may have focused solely on the association between collaboration and patient outcomes, the current study explicitly examines the relationship between collaboration and the provision of routine nursing care. This targeted approach provides more specific insights into the day-to-day aspects of nursing practice.²⁵

The findings of this research indicate a significance correlation between the collaboration among nurses and the provision of routine nursing care in the ICU. The data analysis revealed a significant statistical relation between collaboration among nurses and the provision of routine nursing care (p value is < 0.001). This results emphasizes the importance of effective collaboration in delivering high-quality nursing care to patients in the intensive care unit. The significant relationship between nursing collaboration and routine nursing care. This indicates a favourable environment for collaboration, which contributes to improved patient care outcomes.²⁶

CONCLUSION

In conclusion, the findings of this study highlight the positive association between collaboration among nurses and the provision of routine nursing care in the intensive care unit. It also showed that fostering a culture of

collaboration, healthcare facilities can optimize the delivery of high-quality nursing care in the intensive care unit.

LIMITATIONS

The study's findings may be limited to the specific ICU setting and the sample of nurses involved in the research.

The study may have used a cross-sectional design, which provides a snapshot of collaboration and its association with routine nursing care at a specific time.

SUGGESTIONS / RECOMMENDATIONS

Promoting collaborative culture: Hospitals and healthcare organizations should prioritize the development of a collaborative culture among nurses in health care settings.

Training programs and workshops should be provided to nurses to enhance their communication skills. This includes effective listening, clear and concise information exchange, and articulating patient care needs and concerns among the healthcare team.

CONFLICT OF INTEREST / DISCLOSURE

The authors declare no conflict of interest.

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