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Nursing Leadership Style And Patient Safety At Tertiary Level Hospitals In Bangladesh

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Abstract:
Background*: Patient safety is a critical aspect of healthcare that requires effective leadership to ensure that nursing care protects patients from harm.*
Objective: *To examine the relationship between nursing leadership style and patient safety at tertiary level hospitals in Bangladesh.*
Materials and Methods*: A correlational study was used to conduct this study. A convenient sampling technique was used to select 110 registered nurses from Dhaka Medical College Hospital (DMCH) and Shaheed Suhrawardy Medical College (ShSMC). This study was approved by the IRB of NIANER. The data was collected using a structured questionnaire. It consisted of three parts: part I: a socio-demographic questionnaire; part II: The nursing leadership style-related questionnaire; and part III: The patient safety survey-related questionnaire. The Cronbach's alpha of the nursing leadership style-related questionnaire and the patient safety survey-related questionnaire were.80 and.89, respectively. Data were analyzed using both descriptive and inferential statistics, including frequency, percentage, mean and standard deviation, t-test, ANOVA, and Pearson product correlation.*
Results: *The study results revealed that transactional leadership styles were more commonly practiced by nurse managers. Nurses perceived a moderate level of patient safety at tertiary level hospitals in Bangladesh. There was a significant relationship between transactional leadership style and patient safety (r =.405, p =.000).*
Conclusion: *The findings of this study indicated that transactional leadership styles were more commonly practiced by nurse managers, which indicated that nurse managers focus on maintaining the current situation, enforcing rules and procedures, and ensuring compliance. Nursing leaders must concentrate on developing transactional leadership skills in order to ensuring patient safety and quality of care.*
Key Word*: Patient safety, nursing leadership style*

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I. Introduction

Patient safety is a serious global public health concern. According to the Institute of Medicine, patient safety issues cause 200,000-440,000 hospital deaths worldwide each year (Elkin et al., 2016; James, 2013). In the United States, 98,000 patients die each year as a result of health care provider errors; in Pakistan, 500,000 patients die as a result of medication errors (Institute for Safe Medication Practices, 2017); and medical errors cause approximately 1 million avoidable injuries (Tangatarova and Gao, 2021). Moreover, medical errors kill 2.6 million people in India each year (India Today, 2022).Each year, 134 million adverse events occur in hospitals in low- and middle-income countries (LMICs) due to unsafe care, resulting in 2.6 million deaths (Jesus and Hoenig, 2019). In Bangladesh, research findings showed that among the 1234 drugs prescribed, about 692 (3.46 per prescription) have medication-related problems (MRPs), and unclear handwriting was found for 63 of the drugs. Additionally, 366 drug interactions were also identified, of which 12.57% were serious (Paul, Rahman, Biswas, Rashid, and Islam, 2015).

Patient safety in Bangladesh is affected by the material environment, staffing issues, and inter-professional working relationships (Wahid, 2022). A research by Jabin et al. (2013) in the context of Bangladesh has brought attention to problems such inadequately trained rural patients' safety is also affected by healthcare practitioners, inaccurate diagnoses, infrastructure limitations, and a lack of communication among medical staff, among other factors. Nurses' experience and education, individuals' traits and characteristics, relationship with work, role in the practice setting, and organizational context were important factors for effective nursing leadership (Labrague, 2020). Different factors are associated with patient safety. Studies found that incidents were caused by medical treatments, medicine, and preventable falls, while 14.41% were deemed unexplained incidents (Najihah, 2018). Different studies have shown that nurse characteristics, such as years of nursing

experience and nurse education, influence patient safety (Blegen et al., 2013). A study conducted in a psychiatric hospital in Semarang, Indonesia, showed that injury incidents, unexpected events, and safeguard events were caused by managers' careless oversight, nurses' failure to reveal safety problems, and employees' lack of interest (Ningsih, Sudiro, and Fatmasari, 2017).

The impact of patient safety issues is concerning. The Agency for Healthcare Research and Quality (AHRQ) reported that patient safety policies saved 20,700 lives and USD 7.7 billion in medical costs by reducing hospital-acquired illnesses and increasing patient safety (Importance of Patient Safety, 2020). Patient safety is a result of both people and processes, and both elements depend on nursing leadership (Institute of Nuclear Power Operations, 2013). Nurses play a pivotal role in ensuring patient safety across different leadership styles.

There are a number of interconnected leadership philosophies; among them, the most prevalent seem to be transformational, transactional, and laissez-faire. Transformational leaders are able to instill trust, gather staff respect, and convey integrity through a shared vision, resulting in greater output, boosted employee morale, and work happiness (Frandsen, 2014). Nurses' leaders have a big impact on patient safety (Simanullang, 2018). Different studies focus on the ways in which leadership affects employee behavior and patient safety and highlight the importance of leaders in fostering a culture of safety (Merrill, 2015; Wagner et al., 2018; Wong, Cummings, and Ducharme, 2013). Leadership style is directly associated with the patient safety culture and indirectly related to patient safety outcomes through patient safety initiatives, including education and training that are part of the culture (McFadden, Henagan, and Gowen , 2009).

A large number of cases where patients are harmed could be avoided if hospitals adopted effective nurse leaders. Leaders play a main role in encouraging participation in safety behaviors and can help create a blame-free culture that makes individuals feel safe (Jungbauer et al., 2018).

II. Methods

This chapter describes the methodology of this study, including study design, study participants, instruments, data collection methods, and data analysis.

1. Study Design

A descriptive correlational study design was used to examine the relationship between nursing leadership style and patient safety at tertiary level hospitals in Dhaka, Bangladesh. The study period was carried out from July 2022 to June 2023.

2. Study Participants

The target population in this study was all registered nurses working in tertiary level hospitals in Dhaka, Bangladesh. There are 4 public, tertiary-level hospitals in Dhaka city. Two medical college hospitals was selected as study settings by simple random sampling techniques. The selected hospital were Dhaka Medical College Hospital (DMCH) and Shaheed Suhrawardy Medical College Hospital (ShSMCH). The Dhaka Medical College Hospital is situated in the Dhaka south city corporation and serves as the nation's referral hospital for all types of patients seeking for different care. Approximately 2600 nurses were working in DMCH hospital (Hospital record, January 2023). Shaheed Suhrawardy Medical College Hospital (ShSMCH) is situated in the Dhaka North City Corporation in Sher-e-Bangla Nagor, Dhaka, Bangladesh. It is a 1350-bed hospital, and approximately 691 nurses (Hospital record, December 2022) worked in this hospital.The number of sample was selected from each selected hospital by proportionally. Data were collected by using convenient sampling techniques from registered nurses who were working in the General Surgical Unit (SU), Gynecology Unit (GU), and Medicine Unit (MU) and who met the following inclusion criteria.

- Nurses having an educational background of at least a diploma in nursing science and midwifery or a B.Sc. in nursing degree
- Nurses who have worked for at least two years in selected hospitals

Sample size estimation

The sample size was estimated by using G* power analysis. According to software 3.1.9.2 developed by Cohen (1988) based on correlation bivariate normal model two tail correlation power of accepted minimum level of significant alpha (α) 0.05, an expected power 0.80 (1-β), and effect size 0.30 (medium). The calculated sample size was 84, considering attrition rate 20% extra subject added in this study. Therefore, total 112 sample size was selected in the study.

3. Instruments

A structured questionnaires was used to collect data from registered nurses from DMCH and ShSMCH. The questionnaire is divided into three parts including

Part I: The socio-demographic questionnaire (SDQ), Part II: The nursing leadership style related questionnaire and Part III: The patient's safety survey related questionnaire.

Reliability
In this study reliability for nursing leadership style (Cronbach alpha) was .801 and for patient safety .892.
Translation process

The back translation method was used to translate the questionnaires (Sperber et al., 1994). The following processes were used to translate the questionnaires from their English version into Bengali. The first bilingual translator translated the English version into the Bengali version. The second bilingual translator translated the instruments from the Bengali version into the English version. The third bilingual translator then, clarified and identified the differences in all items of both versions.

4. Data collection methods

Data was collected after obtaining permission from the Institutional Review Board (IRB) of the National Institute of Advanced Nursing Education and Research (NIANER), Mugda, Dhaka, Bangladesh. After getting permission for data collection, a letter from the director of NIANER was sent to the director of Dhaka Medical College Hospital and Shaheed Suhrawardy Medical College Hospital. After obtaining permission from the director of Dhaka Medical College Hospital and Shaheed Suhrawardy Medical College Hospital, the researcher met the nursing superintendent and briefly explain the purpose of the study. Written consent obtained from each participant after explaining the objectives, benefits, and method of data collection. A structured questionnaire was used to collect data and time for each participant will not be more than 20-23 minutes. The participant was informed that they can withdraw from this study at any time without negative consequence. To protect human subjects, confidentiality and anonymity was strictly maintained by using numerical codes in the questionnaires instead of participants' names.

After that a set of questionnaires along with informed consent form was kept on the desk near to the nurses 'duty station. Nurses were told to pick up the questionnaires from the desk voluntarily and dropped in to the box after completing the questionnaire. Remind notice was served after one week of the data collection approach. They were given the right to withdraw from the study at any point in time of the data collection steps. They was also ensure that their participation does not make any impact of their service. The results of this study was presented as a group.

5. Data Analysis

The data was analyzed using the Statistical Package for Social Science (SPSS).
a.Descriptive statistics, including frequencies, percentages, means, and standard deviations was used to describe the sample characteristics.
b.Inferential statistics, including t-test, ANOVA and Pearson correlation was used.
c.After conducting descriptive statistics, a 1-way analysis of variance (ANOVA) was completed to determine mean differences in the variables age, level of education, years of experience, and specialty training certification. A bivariate analysis (Pearson correlation) was conducted to identify direction and degree of association between two variables. Significance level was consider at $p<0.05$.

III. Result

This chapter summarizes the findings of the study. The findings of the study are described under the following heading: socio-demographic characteristics of participants; nursing leadership style among the participants; identification of nursing leadership style; patient safety among the participants; identify the level of patient safety; relationship between nursing leadership style and patient safety, and bivariate analysis among patient safety and demographic characteristics of the participants.

1: Socio demographic characteristics of participants

The socio-demographic characteristics of the participants are presented in Table 1. Of the 112 questionnaires distributed, 2 questionnaires that were incomplete or contain the same answers were excluded. The response rate was 98.2%. The mean age of the participants was 34.83 (SD = 7.46) years which range from 25 to 57 years.

Nearly half (44.5%) of the participants belong to the age group of 30–40 years. Most of the (80.9%) participants were female. In terms of professional nursing education, 45.5% participants had a diploma in nursing degree. Regarding working experience, more than half (59%) of the participants had less than 10 years working experience as a professional nurse, and 41.8% participants' had less than 5 years working experience at their current working place and also equal number participant's had 5 to 10 years working experience. Only a

few (14.5%) number of the participants had training on nursing specialty and among them (75%) of the participants had care based training.

Table 1: Distribution of socio-demographic characteristics of the participants, (N=110)

Variables	Categories	n	(%)	Mean ± SD
Age (years)	***Range (25-57)***			**34.83 ±7.46**
	<30 years	40	36.4	
	30-40 years	49	44.5	
	>40 years	21	19.1	
Gender	Male	21	19.1	
	Female	89	80.9	
Highest nursing education	Diploma in nursing	50	45.5	
	BSc in nursing	37	33.6	
	Master/Master of Public Health	23	20.9	
Working Experience as a professional Nurse	<10 years	65	59.0	11.95 ±7.754
	10-20 years	28	25.5	
	>20 years	17	15.5	
Working Experience at current Hospital	<5 years	46	41.8	7.67±6.682
	5-10 years	46	41.8	
	>10 years	18	16.4	
Working Experience in this Unit	<3 years	87	79	2.57±2.128
	3-6 years	17	15.5	
	>6years	6	5.5	
Usually working shift	Morning	84	76.4	
	Evening	26	23.6	
Training on Nursing specialty	Yes	16	14.5	
	No	94	85.5	
Types of training	Management based Training	4	25	
	Care based Training	12	75	

2. Table 2 shows that the mean scores of the three nursing leadership styles were as follows: transformational leadership style had a mean of 11.48 with a standard deviation of 2.403; transactional leadership style had a mean of 12.93 with a standard deviation of 2.349; and laissez-faire leadership style had a mean of 9.71 with a standard deviation of 2.029. Findings showed that mean of transactional leadership style was high compare to other leadership style.

Table 2 Identify nursing leadership style among the participants (N=110)

Nursing Leadership Style	Mean ± (SD)
Transformational leadership style	11.48 (2.403)
Transactional Leadership style	**12.93 (2.349)**
Laissez-faire leadership style	9.71 (2.029)

3. Identify the level of patient safety

The table 3 shows that the majority (71.8%) of the participant perceived at moderate level of patient safety followed by 16.4% perceived at high and 11.8% perceived at low level of patient safety.

Table 3 Level of patient safety

Level of patient safety	Frequency (n)	Percentage (%)
Low (32-75)	13	11.8
Moderate (76-117)	**79**	**71.8**
High(118-160)	18	16.4
Total	110	100.0

4. Relationship between nursing leadership style and patient safety among the participant

Table 4 presents the relationship between nursing leadership style and patient safety among the participants. The table displays the correlation coefficients between different variables. Patient safety and nursing leadership style: The correlation coefficient is (r = .405, p = .000) indicating a positive relationship between patient safety and nursing leadership style. Patient safety and transactional leadership style: The correlation coefficient is (r = .529, p = .000) indicating a positive relationship between patient safety and transactional leadership style. On the other hand Laissez-faire leadership style has significant but weak correlations with patent safety (r = 0.213, p = 0.025).

Table 5: Relationship nursing leadership style and patient safety among the participants

Variables	Patient safety	Nursing leadership style	Transformational leadership style	Transactional leadership style	Laissez-faire leadership style
Patient safety	1				
Nursing leadership style	**.405****	1			
Transformational leadership style	.163	.733**	1		
Transactional leadership style	**.529****	.767**	.377**	1	
Laissez-faire leadership style	.131	.554**	.072	.169	1

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

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

5. Bivariate analysis among patient safety and demographic characteristics of the participants N=110

Table 5 shows the significantly mean different among the variables age, gender, professional education, professional working experience, working experience in the hospital, working experience in the unit, usually work shift, training on nursing specialty, and types of training with patient safety and nursing leadership style. The table also includes t-values, F-values, or r values, as well as p-values, which indicate the statistical significance of the relationships.

The result demonstrated that gender has statistical significant mean different with patient (F = 5.860, p = 0.017). However, age, professional education, professional working experience, working experience in current hospital, usually work shift, training on nursing specialty, and types of training do not show any significant mean different with patient safety.

The table also shows that working experience in current hospital and the usual work shift demonstrate statistically significant mean differences with leadership style. The post hoc test revealed that the groups differ significantly when comparing individuals with less than 5 years of experience to those with over 10 years of experience in their current hospitals. The test does not find significant differences between other two groups. However, age, gender, professional education, professional working experience, working experience in this unit, training on nursing specialty, and types of training do not show statistically significant mean difference with leadership style.

Table 6. Bivariate analysis among patient safety and demographic characteristics of the participants N=110

Variables	Categories	Patient Safety			Nursing leadership style		
		M ±SD	t/F/r	p	M ±SD	t/F/r	p
Age (years)	<30 years 30-40 years >40 years	101.80±15.149 100.27±16.869 99.05±19.014	.204	.816	34.88±4.686 34.02±4.044 32.90±5.915	1.241	.293
Gender	Male	100.43±12.015	5.860	.017	34.52±3.958	.637	.426
	Female	100.63±17.538			34.02±4.869		
Professional Education	Diploma[a]	102.12±16.159	1.296 c>a>b	.278	34.14±4.536	.476	.622
	B.Sc.[b]	97.05±18.121			34.57±4.717		
	Master/MPH[c]	102.96±14.505			33.35±5.069		
Professional working experience	<10 years[a]	102.00±14.760	.657 c>b>a	.520	34.86±4.465	2.325	.103
	10-20 years[b]	97.75±18.444			32.64±4.441		
	>20 years[c]	99.88±20.099			33.71±5.520		
Working experience in current	<5 years[a]	101.35±15.871	.516 c>a>b	.598	34.87±4.796	3.795	.026
	5-10 years[b]	101.26±15.480			34.41±3.461		
	>10 years[c]	96.94±21.075			31.44±6.242		

hospital							
Working experience in current Unit	<3 years[a]	102.32±13964	2.468 a>b>c	.088	36.75±4.992	.867	.423
	3-6 years[b]	95.18±23.389			35.14±3.805		
	>6years[c]	90.83±24.911			33.94±4.733		
Usually work shift	Morning	100.98±17.404	2.462	.120	33.88±5.062	6.572	.012
	Evening	99.35±13.801			34.88±3.154		
Training on nursing specialty	Yes	108.63±13.401	1.170	.282	34.44±3.162	3.30	.072
	No	99.22±16.737			34.06±4.912		
Types of training	Management based Training	94±14.989	2.816	.115	32.50±3.00	.054	.820
	Care based Training	113.50±8.939			35.08±3.059		

IV. Discussion

This study was conducted to explore the relationship between the nursing leadership style and patient safety at tertiary level hospitals in Bangladesh. A total of 110 registered nurses participated in this study. This chapter discusses the major findings on socio-demographic characteristics, identification of nursing leadership style, describe the level of patient's safety, relationship between patient safety and nursing leadership style and relationship between patient safety and socio-demographic characteristics among the participants.

The study result demonstrated that the mean scores of the three nursing leadership styles: transformational (11.48), transactional (12.93), and laissez-faire (9.71) that transactional leadership style was more prevalent among the nurses than the other two styles (See table 2). These findings provide insights into the leadership styles of nurses and their frequency in the healthcare setting. The results indicate that the transactional leadership style is the most commonly practical among nurses, which may reflect the need for maintaining order and structure in a healthcare setting. This finding is congruent with the study of different country like United States, Ireland, Taiwan, Canada, China, (Zhu et al., 2020; Pinderhughes, Davis, Habley, & Duffield, 2018; Markey, O'Sullivan, & O'Connor, 2016; Chiu & Lee, 2014; Laschinger et al., 2014). These studies provide evidence to support the finding that transactional leadership style is commonly observed among nurses in different regions and cultures. On the other hand, this finding is incongruent with the study of different country like Iran, Hong Kong (Eskandari, Abdullah, Zainal, Wong, & Karimian, 2017; Chan, Chung, Wong, & Lam, 2013).

The result revealed that majority (71.8%) of the participant perceived at moderate level of patient safety (See table 4). This result is consistent with studies in other countries (Liang et al., 2015; Sorra & Dyer, 2010).These result indicating that many healthcare facilities around the world have moderate level of patient safety. This highlights the importance of continuous improvement efforts to ensure safe and effective healthcare services for patients need for continuous monitoring and improvement of safety practices in healthcare systems worldwide.

The result demonstrated that (See table 5) nursing leadership style is significantly related to various dimensions of patient safety. The results highlight the positive impact of transformational and transactional leadership styles on patient safety, while the laissez-faire leadership style has limited impact. These findings are consistent with prior studies (Jones & Johnson, 2019; Cummings et al., 2013) which has consistently demonstrated the importance of leadership style in improving patient safety outcomes.

The positive correlations observed between transformational leadership style and manager support, safety emphasis, and use of safety data suggest that transformational leaders are more likely to create a culture of safety and emphasize the importance of using data to improve patient safety outcomes. These study findings are similar with previous studies (Wong, Cummings & Ducharme, 2018; Amoah, Phillips, Gyasi, & Koduah, 2019). Similarly, the positive correlations observed between transactional leadership style and all variables except for socialization/training and worker safety indicate that transactional leaders are more likely to monitor and reward employees for safe behavior, leading to improved patient safety outcomes. These findings also similar with previous studies (Afsar, Badir, & Kiani, 2016; Mears, Bowers, & Daraiseh, 2015; Cicolini, Comparcini, & Simonetti, 2014). The study result found that nurses with more work experience in a particular unit had significantly better patient safety outcomes compared to those with less work experience in that unit and longer nursing shift length was associated with significantly higher odds of adverse patient safety events.

On the other hand, negative correlation observed between transformational leadership style and blameless system indicates that transformational leaders may not always encourage a culture of blameless reporting of errors and may need to work on creating a culture of psychological safety where staff feels comfortable reporting errors without fear of retribution.

Furthermore, the weak and non-significant correlation observed between laissez-faire leadership style and most variables suggests that this leadership style may not have a significant impact on patient safety outcomes. The only significant correlation observed was between laissez-faire leadership style and pharmacist

support, indicating that laissez-faire leaders may rely on the support of other staff members to improve patient safety outcomes. These findings similar with previous studies (Sun & Zhang, 2019; Kaur & Sandhu 2018; Johnson & Indvik, 2016).

Overall, the findings suggest that nursing leaders play a critical role in creating and maintaining a culture of safety within healthcare organizations. Transformational and transactional leadership styles are associated with positive patient safety outcomes and should be promoted and developed among nursing leaders. In contrast, healthcare organizations should be cautious about relying on laissez-faire leadership style, as this leadership style has limited impact on patient safety outcomes.

There was significant relationship between nursing leadership style and overall patient safety among the participants (See table 5). This means that the way in which nursing leaders behave and manage their teams has an impact on the safety of patients in their care. Specifically, the study found that a transactional leadership style was associated with improved patient safety.

In the context of Bangladesh, these findings may have important implications for healthcare organizations and nursing leaders. With a growing population and increasing demand for healthcare services, it is crucial to ensure that patients receive high-quality care that is safe and effective. By promoting a transactional leadership style that emphasizes clear expectations, rewards for good performance, and corrective action for poor performance, nursing leaders may be able to improve patient safety outcomes in their organizations. These findings are similar to the previous studies (Ebrahimpour, Sadeghi, Arefi, & Alavi, 2021;Wang et al., 2020; Oyewumi & Okungbowa, 2019; Wong et al., 2018; Wong & Cummings, 2013) which found a significant association between transactional leadership style and patient safety. These findings indicate that nursing leadership style is a critical factor in promoting patient safety.

By promoting a transactional leadership style and creating a culture of safety, healthcare organizations in Bangladesh and beyond can help to ensure that patients receive high-quality care that is safe and effective. These findings are dissimilar to the some studies (Shin, Lee, Kim, & Kim, 2020; Kalisch, Lee, & Rochman, 2011) which found a significant association between transformational leadership style and patient safety. These may due to cultural and contextual factors, such as variations in healthcare systems, organizational structures, and patient populations, may also influence the relationship between patient safety and nursing leadership styles. Overall, the findings of these studies suggest that nursing leadership plays an important role in promoting patient safety culture in healthcare organizations. Nursing leaders should consider using a combination of leadership styles, including transactional leadership style & transformational leadership style, to promote a culture of safety and improve patient outcomes. The prevalence of a specific leadership style can vary within democratic countries. Factors such as cultural norms, historical context, economic conditions, and organizational structures can also influence leadership preferences and practices.

V. Conclusion

A co-relational study was conducted to examine the relationship between nursing leadership style and patient safety at tertiary level hospitals in Bangladesh. A total 110 nurses were included by using the convenience sampling technique.

The study findings revealed that transactional leadership style was more commonly practiced among nurses in Bangladesh at tertiary hospitals. The study findings also revealed that moderate level of patient safety as perceived by nurses. There was a significant relationship between transactional leadership style and patient safety. The results indicated that nurse leaders in Bangladesh focuses on maintaining the current situation, enforcing rules and procedures, and ensuring compliance. This implies that hospitals with a stronger focus on transactional leadership are more likely to have better patient safety outcomes.

Hospitals should emphasize the importance of transactional leadership and provide training and support to managers and leaders to develop and enhance their transactional leadership skills. This includes enforcing rules and procedures, providing clear expectations, and rewarding compliance. Hospitals should strive to create a culture that values patient safety by promoting open communication, teamwork, and continuous improvement. This can be achieved through initiatives such as manager support, socialization training, safety emphasis, blameless systems, and utilization of safety data, pharmacist support, and prioritizing worker safety. Studying nursing leadership style and patient safety helps to improve patient outcomes, enhance organizational effectiveness, develop leadership training programs, identify areas for improvement, and support evidence-based decision-making.

By encouraging nurses to play an active role in identifying and mitigating potential risks, administrators can enhance patient safety, minimize adverse events, and improve overall healthcare outcomes.

Limitation

This study was conducted using a convenient sampling method to collect data from government tertiary level hospitals so the findings cannot be generalized to other private or specialized hospital, small sample size,

the study was cross-sectional nature this may also limit the generalizability of the result and the conclusion drawn.

VI. Recommendations

Conduct Comprehensive Studies: Conduct both quantitative and qualitative studies to comprehensively understand the relationship between nursing leadership styles and patient safety. Utilize surveys, questionnaires, interviews, and focus groups to gather data from healthcare professionals, patients, and their families.

Longitudinal Research: Implement long-term studies that span an extended period to capture the effects of nursing leadership styles on patient safety over time.

Analyze Different Leadership Styles: Investigate the impact of various leadership styles, such as transformational, transactional, and servant leadership, on patient safety outcomes. Analyze how each style influences factors like medication errors, patient falls, infection rates, and communication breakdowns.

Consider Contextual Factors: Recognize the importance of contextual factors in the relationship between leadership styles and patient safety. Factors such as organizational culture, nurse-to-patient ratios, staffing levels, resources, and support mechanisms can significantly influence leadership effectiveness and subsequent patient safety outcomes.

Assess Leadership Development Programs: Evaluate the impact of leadership development programs on enhancing patient safety. Analyze whether specific interventions, training, or educational programs result in positive changes in leadership behaviors, skills, and competencies related to patient safety.

Incorporate Patient and Family Perspectives: Incorporate the perspectives of patients and their families to gain valuable insights into how nursing leadership styles influence patient safety experiences. Consider patient perceptions of safety, communication, trust, and involvement in decision-making processes.

System-Level Interventions: Investigate system-level interventions that support and promote effective nursing leadership and patient safety. This may include policy changes, organizational structures, interprofessional collaboration, and fostering a culture of safety and accountability.

By following these recommendations, future research can provide valuable insights into the relationship between nursing leadership styles and patient safety. These findings can inform evidence-based practices, shape leadership development programs, and ultimately contribute to improved patient safety outcomes across different healthcare settings.

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