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IMPROVING NURSING DOCUMENTATION KNOWLEDGE AMONG STAFF NURSES THROUGH A STRUCTURED TRAINING PROGRAM AT TERTIARY CARE HOSPITALS, KPK, PAKISTAN

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Abstract

Background: Nursing documentation is essential for patient safety, continuity of care, quality improvement, and legal accountability in hospital settings. However, persistent gaps in staff nurses' knowledge about standardized documentation practices highlight the need for effective educational interventions.Objective: This study evaluated the effectiveness of a structured training program in improving staff nurses' knowledge of nursing documentation. Methods: A quasi-experimental one-group pretest–posttest study was conducted among 219 staff nurses in a hospital setting. Participants received a structured training program over four weeks focusing on accuracy, consistency, and ethical aspects of bedside documentation. Knowledge was assessed before and after the intervention using a validated 10-item questionnaire. Data were analyzed using SPSS, and a Wilcoxon signed-rank test was applied. Results: The mean pre-test knowledge score (29.67 ± 2.64) increased significantly to 39.04 ± 1.63 post-intervention. The improvement was statistically significant ($t = -56.67$, $df = 218$, $p < 0.001$), with a mean difference of −9.37 (95% CI: −9.70 to −9.04) and a large effect size (Cohen's $d = 3.83$). Conclusion: The four-week structured training program significantly enhanced staff nurses' knowledge of nursing documentation.

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Introduction

Nursing Documentation is a core component of professional practice and serves as a critical communication tool between healthcare providers. Nursing Documentation plays an important role in medical records, not only reflecting the patient's condition and treatment, but also providing evidence-based practice that can be used in the future in medical disputes [1]. Documentation skills are the most vital in nursing intervention that integrates the nurse–patient interaction, which contains the health record, although errors in the documentation can lead to errors in patient care, increase the length of hospitalization, and contribute to mortality due to medical errors [2].

Proper documentation contributes to improvement in patient safety outcomes and reduces the risk of adverse effects, making it essential in modern health care systems [3]. A good quality nursing documentation has different significance; firstly, it can ensure the accuracy and continuity of patient information, provide reliable guidance for doctors and other health care providers, through which they can optimize treatment plans and enhance patient safety [4]. Accurate nursing documentation protects the health care provider from legitimate rights and legal consequences, including disciplinary action and adverse court decisions [5]. Furthermore, Knowledge base documentation can enhance the optimization of nursing communication, which leads to improved patient outcomes [6].

High-standard nursing documentation is crucial for patient safety and quality of care. Although comprehensive documentation of the nursing process is a key indicator of quality care, regular and periodic training is essential, as it helps enhance documentation practices [7]. Bedside nursing documentation refers to the real-time record of patient care intervention and observation. This technique links the gap between nursing intervention and ensuring that the patient data remains accurate, current, and complete [8].

However, recognizing the importance of nursing documentation, several studies showed a gap in nurses' knowledge, performance, and compliance with documentation standards. For example, before the implementation of the structured training program, nurses had limited knowledge about the importance of nursing documentation [9].

In addition, numerous studies have revealed that inadequate nursing documentation remains a persistent and significant challenge across healthcare settings. One of the basic contributing factors is the lack of knowledge among nurses toward proper documentation principles, formats, and standards. Many nurses enter clinical practice with insufficient theoretical and practical preparation related to comprehensive and legally sound documentation, which leads to incomplete, inaccurate, or inconsistent patient records [5]. Moreover, Inadequate or a lack of formal education and continuing professional development impairs nurses' ability to complete nursing documentation accurately. As a result, effective and timely communication of information among nurses is compromised, which ultimately has negative effects on patient care, continuity of treatment, and patient safety [10].

Furthermore, Structured training programs have been increasingly recognized as an effective strategy to address the deficiencies by enhancing nurses' theoretical knowledge and practical skills in documentation practice [11].

Objectives:

- To investigate the baseline level of knowledge of staff nurses toward bedside nursing documentation before the training program.
- To implement a structured training program on standard nursing documentation among staff nurses.
- To evaluate the post-training level of knowledge of staff nurses regarding nursing documentation
- To compare pre- and post-training knowledge scores of staff nurses related to nursing documentation.

Methodology

This study employed a quasi-experimental pre-test and post-test design to investigate the impact of a structured training intervention on staff nurses' Knowledge toward bedside nursing documentation. The design was chosen to determine whether the educational program could produce measurable improvements in nurses' knowledge within a routine clinical setup [5].

The study was conducted in two tertiary care and one Category C hospital located in Peshawar, Pakistan. These institutions were purposively selected due to their strategic importance within the regional health care system. These institutions represent tertiary-level care, managing high patient turnover, and serve a diverse patient population, making them an appropriate setting for evaluating nursing documentation knowledge. In addition, these hospitals have a large number of staff nurses and follow established nursing documentation protocol, providing a relevant and structured environment for the implementation and assessment of the training intervention.

A quasi-experimental study design was employed to evaluate the impact of a structured training program on

Frontier in Medical & Health Research

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staff nurses' knowledge related to nursing documentation. The targeted population was staff nurses, who were directly providing bedside care in the selected hospitals. The total nursing force across these institutions was approximately 800 nurses. The sample size was determined by using the Rao-Soft calculator (2004), considering a 95% confidence level, a 5% margin of error, and a 50% response distribution. Based on these parameters, the calculated sample size was 219 nurses, ensuring adequate reliability, validity, and generalizability of the study.

The targeted population consisted of registered nurses employed in the selected hospitals. From this population of approximately 800 nurses, 219 were included in the study, through convenience sampling techniques based on predefined inclusion criteria:

- Registered with the Pakistan Nursing& Midwifery Council, Pakistan
- Minimum of one year of clinical experience.
- Actively engaged in bedside nursing care and documentation.

Student Nurses, Managerial position nurses, and those who were on leave were excluded.

Written Informed Consent was obtained from all participants before data collection.

Data were collected using an adopted and modified structured questionnaire from validated international tools used in nursing Documentation research (Tadesse et al., 2024).

The instrument comprised two sections:

Section I: Demographic information (age, qualification, years of experience).

Section II: K 10-item Knowledge scale assessing nurses' knowledge toward nursing documentation, its importance, and consequences. Each item was rated on a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5).

The tool was pretested for reliability among 219 nurses before intervention, yielding a Cronbach alpha > 0.883 = which confirms strong internal consistency (Table 1).

Table 1: ***Reliability &Consistency by Yielding Cronbach's alpha***

Domain	No of Items	Cronbach's Alpha	Interpretation
Knowledge	1 - 10	0.883	Good internal consistency

Baseline (pre-test) data were collected one week before the training intervention, and post-test data were obtained immediately after the four-week program using the same instrument. Data collection was supervised by trained research assistants under the guidance of the research team to ensure accuracy, confidentiality, and uniform administration across all study sites.'

Data were analyzed using IBM SPSS Statistics version 25.0. Descriptive statistics (mean, standard deviation, frequencies, and percentages) were used to summarize demographic and Knowledge variables. Inferential analysis was conducted using the Wilcoxon signed-rank test to compare pre- and post-intervention knowledge scores, appropriate for paired ordinal data. Effect sizes were calculated to estimate the magnitude of change, and a significance level of $p < 0.05$ was adopted.

Ethical approval for this study, consequent upon the reference number issued by Lincoln University College (LUC), Malaysia (Ref: LUC/CPGS/PGS/20250611/001), was obtained from the Institutional Review Boards (IRBs) of Services Hospital, Khyber Teaching Hospital, Hayatabad Medical Complex, and Services Hospital, Peshawar. Administrative permission was also obtained from the nursing superintendents of all participating hospitals. Participation was voluntary, and confidentiality was strictly maintained. Participants were fully informed of their right to withdraw at any stage without consequences. No identifying information was included in the final dataset.

Result

This study evaluated the impact of a structured training intervention on nurses' knowledge related to bedside nursing documentation. Data were collected from 219 registered nurses working across medical, surgical, Orthopedic, Children's, ICU, CCU, and gynecology departments in major teaching hospitals. The analysis includes participants' demographic characteristics and evaluates changes in their knowledge and perceived barriers before and after the training intervention. Given the ordinal nature of the data, the Wilcoxon signed-rank test was applied to determine the statistical significance of pre- and post-intervention differences. Descriptive statistics, mean scores, frequency distributions, effect sizes, and p-values are reported to provide a comprehensive assessment of the intervention's overall impact.

The majority of participants were affiliated with Hayatabad Medical Complex (HMC) (45.2%), followed by Khyber Teaching Hospital (KTH) (43.4%) and Services Hospital (11.4%), as shown in Table 2. The nursing staff was

Frontier in Medical & Health Research

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predominantly female (90.9%), while the male representation was 9.1%. Most participants were within the 31–40 years age group (45.2%), followed by those aged 20–30 years (33.3%), indicating a relatively young professional profile.

Regarding academic qualifications, nearly half of the nurses (49.3%) held an FA/FSc degree, while 37.4% had a matric-level education and 13.2% possessed a bachelor's degree. In terms of professional qualification, the majority (59.8%) had completed Post RN/BScN, followed by Diploma holders (36.1%) and a small proportion (4.1%) with MScN degrees.

Concerning clinical experience, most nurses had between 1 and 20 years of experience, with 23.3% serving for 1–5 years, 22.8% for 11–15 years, and 21.9% for 16–20 years. Only a few participants had over 25 years of experience (7.8%). The participants represented diverse clinical units, with surgical wards accounting for 21.9%, followed by gynae (16.4%), children's wards (16.4%), medical wards (16.0%), orthopedic (14.6%), and ICU (14.6%).

Table 2: ***Demographic Characteristics of Participants (n = 219)***

Variable	Category	Frequency (n)	Percentage (%)
Institution Name	Services Hospital	25	11.4
	Khyber Teaching Hospital (KTH)	95	43.4
	Hayatabad Medical Complex (HMC)	99	45.2
Gender	Male	20	9.1
	Female	199	90.9
Age (Years)	20–30	73	33.3
	31–40	99	45.2
	41–50	35	16.0
	51–60	12	5.5
Academic Qualification	Matric	82	37.4
	FA/FSc	108	49.3
	BA/BS	29	13.2
Professional Qualification	Diploma	79	36.1
	Post RN/BScN	131	59.8
	MSN	9	4.1
Years of Experience	1–5	51	23.3
	6–10	34	15.5
	11–15	50	22.8
	16–20	48	21.9
	21–25	19	8.7
	26–30	17	7.8
Working Area	Medical	35	16.0
	Surgical	48	21.9
	Orthopedic	32	14.6
	Children	36	16.4
	Gynae	36	16.4
	ICU	32	14.6
Prior Training	No	219	100.0
Mother Tongue	Pashto	135	61.6
	Urdu	31	14.2
	Other	53	24.2

The impact of the structured training intervention on nurses' knowledge towards bedside nursing documentation was evaluated using the Wilcoxon signed-rank test, suitable for paired ordinal data. As presented in Table 3, there was a significant improvement in post-intervention knowledge scores compared with pre-intervention scores, indicating that the training program significantly enhanced nurses' knowledge and commitment toward accurate and timely bedside documentation.

Volume 4, Issue 6, 2026

Frontier in Medical & Health Research

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The mean pre-test knowledge score was 29.68 (SD = 2.64), which increased substantially to 39.04 (SD = 1.63) in the post-test. A Related-Samples Wilcoxon Signed Rank Test revealed that this difference was statistically significant (Z = 12.855, p < 0.001).

Furthermore, the effect size (r = 0.87) indicates a very large effect, demonstrating that the training program had a strong and meaningful impact on participants' knowledge regarding nursing documentation.

Table 3: ***Wilcoxon Signed-Rank Test Knowledge (n = 219)***

Domain	No of Items	Pre-test Mean (SD)	Post-test Mean (SD)	Wilcoxon Z	P Value	Effect size (r)
Knowledge	K10(K1-K10)	29.68 (2.64)	39.04 (1.63)	12.855,	< 0.001	0.87

The result revealed a substantial improvement in the knowledge of the staff nurses' domain following the structured training program. The pre-test mean knowledge score was 29.68 ($SD_{=2.64)}$, which increased markedly to 39.04 ($SD_{=1.63}$) in the post-test assessment. This indicates a remarkable improvement in nurses' knowledge after the intervention. The Wilcoxon Signed-Rank test demonstrated that this improvement was statistically significant (Z = 12.855, p < 0.001), confirming that the observed increase in knowledge scores was unlikely to have occurred by chance. In Addition, the calculated effect size (r = 0.87) indicates a large effect, reflecting a strong and meaningful impact of the training program on staff nurses' knowledge levels.

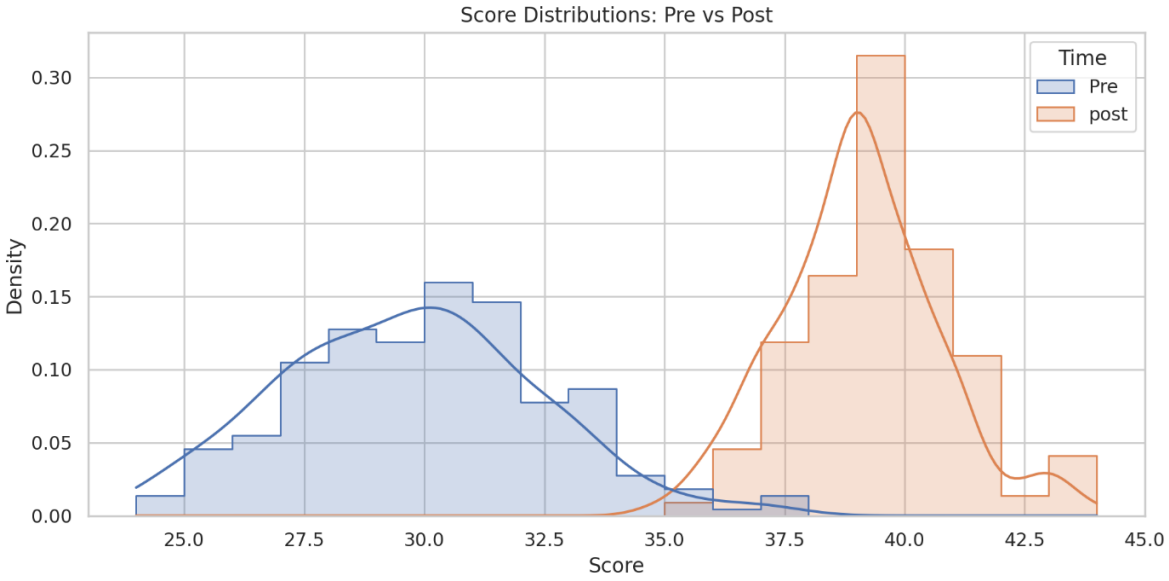

Figure 1: Score Distribution of pre- and post-test data

Figure 1 shows a relatively lower and broader distribution, with most values clustering around the lower score range, indicating the limited baseline performance before the intervention. In contrast, the post-test scores demonstrate a noticeable rightward shift, with higher scores and a more concentrated distribution, reflecting improved performance after the intervention.

Table 4 represents a comparison of the participants' scores before and after the intervention. The pre-test mean score was 30 with a standard deviation (SD) of 2.64, and a Standard error of the mean (SEM) of 0.18, while the post-test means increased to39 with an SD of 1.63, and an SEM of 0.11. The paired correlation (r= 0.87) indicates a strong positive relationship between the pre-test and post-test scores, suggesting consistency in measurement across the two time points. The mean difference between the pre-test and post-test scores indicates a substantial improvement, which is statistically significant (p<0.001), reflecting the effectiveness of the intervention.

Volume 4, Issue 6, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Table 4: *Mean Scores of Individual Domains Pre- and Post-Intervention of Knowledge*

Variable	Mean	SD	Std. Error Mean	Sig. (r)	Mean Difference	p-value
Pre-test	30	2.64	0.18			
Post-test	39	1.63	0.11			
Paired correlation Pre-test				0.87		
Difference (Pre – Post)					9.37	< 0.001

Discussion:

The structured training intervention had a significant and positive effect on nurses' knowledge of bedside nursing documentation in tertiary care hospitals in Peshawar. The post-intervention findings showed a clear improvement in knowledge scores, reflecting that the nurse developed a stronger appreciation for the importance of accurate, timely, and accountable documentation. The training enhanced participants' knowledge by strengthening their understanding of nursing documentation as a fundamental professional responsibility, which is essential to patient care, patient safety, and the legal protection of health care providers, rather than merely an administrative or secondary task.

The present study revealed a statistically significant improvement in nurses' knowledge of nursing documentation following the intervention. The pre-test means knowledge scores of 30 (SD=2.64, SEM=0.18) increased substantially to 39 (SD=1.63, SEM=0.11) in the post-test, indicating a marked enhancement in participants' understanding of documentation principles, standards, and professional responsibilities. This finding highlights the effectiveness of the structured educational intervention in addressing existing knowledge gaps related to nursing documentation.

The statistically significant mean difference ($p<0.001$) demonstrates that the intervention had a meaningful impact on nurses' knowledge of documentation. This result is consistent with previous studies showing that targeted training programs significantly improve nurses' knowledge of accurate, timely, and legally sound documentation [4].

Knowledge of nursing documentation is a core professional competency that directly influences the accuracy, completeness, and legal validity of patient records. Adequate knowledge enables nurses to document patient assessments, interventions, and outcomes in a systematic and standardized manner, which is essential for maintaining continuity of care, ensuring patient safety, and facilitating interdisciplinary communication [12].

In addition, Evidence from multiple studies indicates that staff nurses often demonstrate insufficient knowledge regarding standardized documentation practices, particularly in areas such as legal accountability, use of approved technologies, and timely bedside documentation [7]. Nurses with sound documentation knowledge are better equipped to comply with institutional policies, professional standards, and legal requirements, therefore reducing the risk of documentation errors and medico-legal consequences [13]. Structured training programs are effective in improving nurses' knowledge of nursing documentation. A training program that focuses on principles of accuracy and completeness, ethical consideration, and legal aspects significantly enhances nurses' understanding and confidence in documentation [14].

Overall, the findings of this study indicate a meaningful improvement in nurses' knowledge regarding bedside nursing documentation. The educational intervention enhanced participants' understanding of the purpose, significance, and standard of bedside nursing documentation, reinforcing its role as an essential component of professional nursing practice. Improvement in the knowledge contributed to greater awareness of accurate and timely record-keeping and promoted a more responsible approach to documentation. This result confirmed that structured training programs are effective in strengthening nurses' knowledge of documentation, which is fundamental for patient safety, legal accountability, and the delivery of high-quality nursing care.

Conclusion

The study concluded that the structured training intervention is highly effective in improving staff nurses' knowledge about bedside nursing documentation. The significant increase in post- test knowledge scores, along with the large effect size, indicates that a focused educational program can successfully address existing gaps in nursing documentation knowledge. Enhancing nurses' understanding of accurate, consistent, and ethically sound documentation practices is critical for promoting patient safety, ensuring continuity of care, and strengthening legal and professional accountability. The findings support the regular, structured documentation training in service

Frontier in Medical & Health Research

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education programs to sustain good quality in nursing documentation and improve overall standards of nursing care in hospital settings.

Conflict of Interest and Funding

The authors declare that there are no conflicts of interest associated with this study. No financial, personal, or institutional relationships influenced the design, implementation, analysis, or reporting of the research. The study was conducted solely for academic and professional development purposes.

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Frontier in Medical & Health Research

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Frontier in Medical & Health Research

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Appendix A

Knowledge toward Bedside Nursing Documentation (K1–K10)

1. I am aware that accurate nursing documentation is crucial for delivering high-quality patient care.
2. I have comprehensive knowledge of the standard formats and institutional guidelines for nursing documentation. e.g. SOP (standard operating procedure), narrative notes, care plans.
3. I am proficient in accurately recording patient assessments, nursing interventions, and clinical outcomes in the patient record.
4. I am well-versed in the hospital's policies and procedures governing nursing documentation practices.
5. I am confident in my ability to utilize electronic health records (EHR) effectively for nursing documentation.
6. I can accurately differentiate between subjective and objective data when completing nursing notes.
7. I have detailed knowledge of documentation requirements specific to different work shifts and during patient handovers.
8. I understand the significance of timely documentation in promoting patient safety and supporting continuity of care.
9. I have a thorough awareness of the potential legal consequences arising from incomplete or inaccurate nursing documentation.
10. I recognize that precise and complete nursing documentation is essential for professional accountability and legal safeguarding.