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Attitude towards electronic documentation among nurses in a tertiary hospital, Nepal: a cross sectional study

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Abstract

Introduction: The electronic documentation (ED) systems in healthcare settings have become an essential part of enhancing accuracy, accessibility, and continuity of care and reducing documentation errors and administrative burden. Nurses, being the primary users, play a vital role in ensuring effective utilization of the ED. Understanding their attitudes is therefore crucial for successful implementation. This study aimed to assess nurses' attitudes toward ED and to find out the association between socio-demographic characteristics and their attitudes.

Method: A descriptive cross-sectional study was conducted in 2024 Dec –2025 Aug, among 208 nurses at Patan Hospital. Attitudes toward ED were assessed using the standardized tool developed by Stronge and Brodt (1985). Participants were selected through systematic random sampling, and data were collected via Google Forms. Ethical approval was given by Institutional Review Committee of Patan Academy of Health Sciences (PAHS-IRC). Data was analyzed using descriptive statistics and chi-square tests.

Result: Overall, 106(51.00%) of participants exhibited a positive attitude toward electronic documentation, while 102(49.00%) showed a negative attitude. No significant association was observed between attitude and age, education, experience, position, frequency of practice, or prior training ($p>0.05$). However, the working unit showed a significant relationship with attitude ($\chi^2=8.461$, $p=0.037$), with nurses from emergency units demonstrating the highest positive attitude, 13(76.47%).

Conclusion: Slightly more than half of nurses demonstrated favorable attitudes towards ED. The working unit was the only socio-demographic factor found to significantly impact the attitude. These findings show the need of training and unit-specific strategies to strengthen positive attitudes and ensure the successful adoption of ED systems.

Keywords: Attitude; Electronic Documentation; Hospital; Nurses



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Introduction

Electronic documentation (ED) systems signify a major transformation in healthcare delivery worldwide. By enabling accurate and timely recording of clinical information, ED enhances the efficiency and quality of patient care. For nurses, it simplifies work, reduces paperwork, supports continuity of care, and lowers the risk of medical errors due to misinterpretation of handwritten records or incomplete information.^{1,2}

Nurses' attitudes toward ED systems are crucial for their successful implementation and sustainability.³ Positive attitudes encourage compliance and integration into routine practice, while negative attitudes can hinder the process. Global studies reveal differing perspectives: in Jordan and Palestine, nurses generally showed positive attitudes toward ED.^{1,4} However, in Egypt, 51% of nurses had negative views.⁵ Similarly, studies in India found that 56% and 75% of nurses, respectively, had unfavorable attitudes toward ED systems.^{6,7} The success of ED systems largely depends on nurses' acceptance and readiness to engage with such technologies.^{1,3} Despite such evidence, there is limited research in the South Asian region, and no published studies to explore nurses' attitudes toward ED in Nepal.

At Patan Hospital, the paper-based documentation system is currently transitioning to an electronic format, with a vision of becoming entirely paperless. Nurses are directly involved in this transformation and play a pivotal role in determining its success. This study aims to assess nurses' attitudes toward ED at Patan Hospital, providing evidence to guide implementation strategies and supporting the transition toward a more efficient and error-reducing documentation process.

Method

A descriptive cross-sectional study was conducted from 2024 Dec to 2025 Aug, in different wards of Patan Hospital, to assess the nurses' attitudes towards Electronic Documentation (ED). In this study, ED was defined as the use of computerized systems to record, store, and manage patient care information, serving as a replacement for traditional paper-based documentation.

At the time of the study, there were a total of 550 nurses working in different departments of Patan Hospital. A systematic random sampling technique was employed to select the sample. The sample size was determined using Open Epi version 3.01.⁸ A sample size of 227 nurses was estimated based on a finite population size of 550, with a 95% confidence level and a 5% absolute precision. To determine the sample, the n^{th} value was calculated and applied within the linear population frame (i.e., $n^{\text{th}}=550/227=2$). This means that every second nurse in the population

frame was included in the sample. Nurses who held positions as nursing director, assistant nursing directors, nursing supervisors, and those not involved in direct patient care were excluded from the study. A total of 208 nurses completed participation, representing 91.6% of the calculated sample size; the remaining did not respond or were unavailable during the study period.

The study received approval from the Institutional Review Committee (IRC) of Patan Academy of Health Sciences (Ref: Nrs2507252047). Google Form was developed and shared with the participants via institutional email and Viber, whichever was available and accessible.

The purpose, risks, and benefits of the study were well explained in the Google Form. Participants were informed that they could deny participating as well as withdraw from the study at any time without giving any reason during the study period. A statement indicating that the participant has understood all the information in the consent form and is willing to participate voluntarily was obtained by clicking next in the Google Form. Any identifying information was not collected to maintain anonymity. Data are stored securely in a password-protected computer that only the researcher has had access to, to maintain privacy, and used only for research purposes.

The standard tool developed by Stronge and Brodt (1985) structured questionnaire, was used for data collection. The instruments in this study consisted of two sections: one with socio-demographic and job-related variables such as age, level of nursing education, nursing job experience, practice of electronic documentation, working unit, position on job, and training on electronic documentation; and the other with the Attitude scale to measure the Nurses' Attitudes towards Computer documentation. The total scores of the tool ranged from 20 to 100. The nurses secured the highest score of 5 for positive response and 1 for negative response. Reverse scoring was done for negatively worded items. The scores of more than or equal to the mean score were considered positive attitudes, while scores less than the mean score were considered negative attitudes.⁹ The scale consisted of 20 items with a 5-point Likert scale, which extends from strongly agree to strongly disagree. This tool was used in a number of studies previously, and content validity as well as reliability of the questionnaire were evaluated in previous studies.^{10,11,12} Pre-testing of the tool was done on 10% nurses across different departments to check its practicability. Those participants were not included in the study sample.

Data were collected within two two-week period (2025 Jul 29 to Aug 15). Meanwhile, a reminder message was sent every third day of the day of

data collection. Hence, data was collected via a self-administered questionnaire.

After completing the data collection, the completed Google Form was checked individually to ensure that all fields were complete. The incomplete one was removed. Then the data were imported into Excel and then to Statistical Package for the Social Sciences (SPSS). The analysis was done by using descriptive statistics, including frequency, mean, percentage, standard deviation, and inferential statistics, including Chi-square, to find out the association between independent variables and attitude regarding electronic documentation among nurses. A p-value of <0.05 was taken as significant.

Result

The study includes a total of 208 nurses. Among them, 100(48.08%) of the participants were under 30 years of age, 174(83.65 %) held a bachelor's degree in nursing, and 82(39.42%) of the participants had worked as nursing staff in hospitals for more than 10 years. Regarding their current work position, 156(75.00%) were staff nurses, while only 10(4.81%) respondents reported that they had never practiced electronic documentation. In total, 92(44.23%) were employed in various inpatient departments, including medical, surgical, gynecology/obstetrics, ENT,

orthopedics, psychiatric, and pediatrics. Additionally, 119(57.21%) of participants had received training related to electronic documentation (ED), Table 1.

Table 1. Sociodemographic and work-related characteristics of nurses (N=208)

Characteristics	n (%)
Age (years)	
≤30	100(48.08%)
31–40	77(37.02%)
>40	31(14.90%)
Education	
PCL	26(12.50%)
BN/BNS/BSN	174(83.65%)
MN	8(3.85%)
Experience (years)	
<5	66(31.73%)
5–10	60(28.85%)
>10	82(39.42%)
Working Unit	
Inpatient	92(44.23%)
ICU	68(32.69%)
OT	31(14.90%)
Emergency	17(8.17%)
Position	
In-Charge	20(9.62%)
Senior SN	32(15.38%)
Staff Nurse	156(75.00%)
ED Practice	
Daily	108(51.92%)
Sometimes	90(43.27%)
Never	10(4.81%)
ED Training	
Yes	119(57.21%)
No	89(42.79%)

Table 2. Nurses' attitude towards questionnaire's items (N=208)

SN Item	SD n (%)	D n (%)	U n (%)	A n (%)	SA n (%)	Mean±SD Score
1 A computer increases costs by increasing the nurses' workload.	35(16.83)	87(41.83)	41(19.71)	39(18.75)	6(2.88)	3.51±1.07
2 Computers cause a decrease in communication between hospital departments.	33(15.87)	112(53.85)	23(11.06)	32(15.38)	8(3.85)	3.63±1.05
3 Computers will allow the nurse more time for the professional tasks for which he or she is trained.	12(5.77)	35(16.83)	36(17.31)	99(47.60)	26(12.50)	3.44±1.09
4 Part of the increase in the costs of healthcare is because of computers.	42(20.19)	85(40.87)	50(24.04)	26(12.50)	5(2.40)	3.64±1.02
5 The time spent using a computer is out of proportion to the benefits.	29(13.94)	93(44.71)	52(25.00)	32(15.38)	2(0.96)	3.55±0.95
6 Computers represent a violation of patient privacy.	61(29.33)	94(45.19)	32(15.38)	19(9.13)	2(0.96)	3.93±0.95
7 Only one person at a time can use a computer terminal; therefore, staff efficiency is inhibited.	16(7.69)	44(21.15)	48(23.08)	69(33.17)	31(14.90)	2.74±1.18
8 The computerization of nursing data offers nurses a remarkable opportunity to improve patient care.	16(7.69)	25(12.02)	52(25.00)	88(42.31)	27(12.98)	3.41±1.10
9 Computers contain too much personal data to be used in an area as open as a nursing station.	16(7.69)	73(35.10)	63(30.29)	51(24.52)	5(2.40)	3.21±0.98
10 Computers cause nurses to give less time to quality patient care.	26(12.50)	95(45.67)	27(12.98)	44(21.15)	16(7.69)	3.34±1.17
11 If I had my way, nurses would never have to use computers.	76(36.54)	86(41.35)	31(14.90)	12(5.77)	3(1.44)	4.06±0.94
12 Computers should only be used in the financial department.	89(42.79)	81(38.94)	20(9.62)	12(5.77)	6(2.88)	4.13±1.00
13 Computers make nurses' jobs easier.	12(5.77)	29(13.94)	36(17.31)	98(47.12)	33(15.87)	3.53±1.09
14 Paperwork for nurses has been greatly reduced by the use of computers.	16(7.69)	42(20.19)	32(15.38)	74(35.58)	44(21.15)	3.42±1.24
15 Orientation for new employees takes longer because of computers and, therefore, unnecessary work delays occur.	19(9.13)	83(39.90)	49(23.56)	51(24.52)	6(2.88)	3.28±1.03
16 Nursing information does not lend itself to computers.	9(4.33)	57(27.40)	84(40.38)	53(25.48)	5(2.40)	3.06±0.89
17 Computers save steps and allow the nursing staff to become more efficient.	9(4.33)	26(12.50)	37(17.79)	104(50.00)	32(15.38)	3.60±1.03
18 The more computers in an institution, the less the number of jobs for employees.	32(15.38)	100(48.08)	48(23.08)	22(10.58)	6(2.88)	3.63±0.96
19 Increased computer usage will allow nurses more time to give patient care.	12(5.77)	70(33.65)	50(24.04)	60(28.85)	16(7.69)	2.99±1.08
20 Because of computers, nurses will face more lawsuits.	20(9.62)	66(31.73)	70(33.65)	39(18.75)	13(6.25)	3.20±1.05

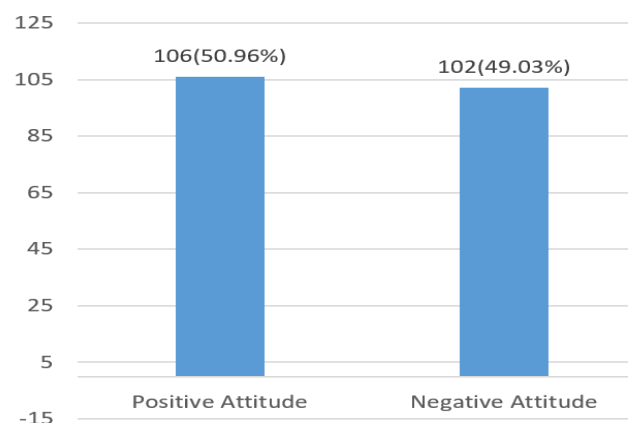
Note: SA = strongly agree; A = agree; U = uncertain; D = disagree; SD = strongly disagree

Table 3. Association between socio-demographic variables and level of attitude among nurses (N=208)

Sociodemographic Variables	Positive Attitude n(%)	Negative Attitude n(%)	Chi-Square Value	p-value
Age (years)			0.887	0.642
≤30	51(51.00%)	49(49.00%)		
31–40	37(48.08%)	40(51.92%)		
>40	18(58.06%)	13(41.94%)		
Level of education			0.284	0.868
PCL	12(46.15%)	14(53.85%)		
Bachelor	90(51.72%)	84(48.28%)		
Master	4(50.00%)	4(50.00%)		
Experience (years)			1.205	0.547
<5	35(53.03%)	31(46.97%)		
5–10	27(45.00%)	33(55.00%)		
>10	44(53.66%)	38(46.34%)		
Working unit				
ICU	35(51.52%)	33(48.48%)	8.461	0.037
Inpatient	39(42.42%)	53(57.58%)		
Emergency	13(76.47%)	4(23.53%)		
OT	19(61.29%)	12(38.71%)		
Position				
Nursing InCharge	11(55.00%)	9(45.00%)	0.649	0.723
Senior Staff	18(56.25%)	14(43.75%)		
Staff Nurses	77(49.36%)	79(50.64%)		
Frequency of Practice				
Never	7(70.00%)	3(30.00%)	4.458	0.108
Sometimes	51(56.67%)	39(43.33%)		
Daily	48(44.44%)	60(55.56%)		
Training on ED				
YES	58(48.70%)	61(51.30%)	0.549	0.459
NO	48(53.92%)	41(46.08%)		

A descriptive analysis of the total attitude scores gave a mean score of 69.20 ± 8.60 , with a minimum score of 46 and a maximum score of 95. Most participants responded with “agree” or “disagree.” The items “Computers represent a violation of patient privacy” {SD = 61(29.33%), D = 94(45.19%), U = 32(15.38%), A = 19(9.13%), SA = 2(0.96%); mean = 3.93 ± 0.95 }, “If I had my way, nurses would never have to use computers” {SD = 76(36.54%), D = 86(41.35%), U = 31(14.90%), A = 12(5.77%), SA = 3(1.44%); mean = 4.06 ± 0.94 }, and “Computers should only be used in the financial department” {SD = 89(42.79%), D = 81(38.94%), U = 20(9.62%), A = 12(5.77%), SA = 6(2.88%); mean = 4.13 ± 1.00 } received the highest ratings. In contrast, “Only one person at a time can use a computer terminal; therefore, staff efficiency is inhibited” {SD = 16(7.69%), D = 44(21.15%), U = 48(23.08%), A = 69(33.17%), SA = 31(14.90%); mean = 2.74 ± 1.18 } and “Increased computer usage will allow nurses more time to give patient care” {SD = 12(5.77%), D = 70(33.65%), U = 50(24.04%), A = 60(28.85%), SA = 16(7.69%); mean = 2.99 ± 1.08 } received the lowest ratings, Table 2.

The mean score of the attitude questionnaire was 69.20 ± 8.60 , indicating a positive attitude among 106(50.96) of the nurses, with a minimum score of 46 and a maximum score of 95, Figure 1.

**Figure 1. Distribution of nurses according to level of attitude (N=208)**

There was no association between age ($p=0.642$), level of education ($p=0.868$), experiences of nursing job ($p=0.547$), position in job ($p=0.723$), frequencies of practices ($p=0.108$) and training ($p=0.459$) with level of attitude among nurses. And the association was between working unit ($p=0.037$) and level of attitude, Table 3.

Discussion

This study aimed to assess nurses' attitudes towards Electronic Documentation (ED). The result showed that 51% of the nurses had an overall positive

attitude (mean attitude 69.2 ± 8.66) toward ED. A similar finding was observed in the study of Egypt (49%).⁵ Only 25% nurses had a positive attitude in India (Jayalakshmi et al., 2017).⁶ This result was contradicted by studies conducted in Saudi Arabia (81.1%), Nigeria (65%), and Oman (74%), where the majority of nurses had a positive attitude.^{7,10,15,16} Since ED has been implemented in the study setting only for a few months, nurses are still encountering various challenges in its use, which may partly explain the observed differences in attitudes. Unfortunately, no published research was identified in the context of Nepal, and only limited studies are available from neighboring countries. Therefore, direct comparison with other settings may not be appropriate.

The analysis of socio-demographic variables and nurses' attitudes toward electronic documentation provided valuable insights. The study found no statistically significant association between age and attitudes toward electronic documentation ($p=0.642$). While nurses over the age of 40 showed a slightly higher proportion of positive attitudes (58.1%) compared to their younger counterparts. This suggests that age alone does not strongly influence nurses' perceptions of electronic documentation. These findings align with research by Abu Raddaha et al. in 2018, which also reported that age did not significantly affect nurses' attitudes toward electronic health record systems.¹⁶ Similarly, educational level also did not have a significant effect on attitude ($p=0.868$). Nurses with bachelor's degrees exhibited a slightly higher positive attitude (51.7%) compared to those with PCL or master's level education. This aligns with Sinha & Joy (2022), who found that while higher education may improve familiarity with technology, it does not necessarily predict a more positive attitude toward ED.¹⁴ Additionally, a study showed more favorable attitudes among the nurses having the diploma and degree level of education.¹⁷ Work experience also showed no significant association with attitude ($p=0.547$), although nurses with more than 10 years of experience reported a slightly higher positive attitude (53.7%). This suggests that experience alone may not be a strong predictor of attitude, but longer exposure to clinical practice could increase familiarity and comfort with documentation systems. This study finding was contradict to the study where longer the service period (more than 10 years), more negative in attitude.¹⁷ The lack of significant association in the current study might be due to the homogeneity of the sample, institutional culture, or training opportunities that provide similar experiences regardless of demographic characteristics. Similarly, training on ED did not significantly affect attitude, as participants who had not received training showed a slightly higher positive response (53.92%) compared

to those who received training (48.70%). A possible explanation could be that the training sessions attended by participants were not comprehensive enough, or that attitudes are shaped more strongly by workplace experiences than by short-term educational interventions. The frequency of practice also showed no statistically significant association, although participants practicing daily tended to demonstrate slightly higher positive attitudes. Although the association was not significant, the slightly higher positive attitudes among nurses who practiced daily suggest that regular exposure and skill application may help reinforce confidence and improve perception of electronic documentation., even if the statistical relationship was not significant in this sample.

Interestingly, the working unit showed a statistically significant association with attitude ($\chi^2=8.461$, $p=0.037$). Nurses working in the Emergency Unit reported the highest positive attitude (76.5%), followed by the Operating Theatre (61.3%). In contrast, nurses in the inpatient unit had a lower proportion of positive attitude (42.4%). This finding may reflect the higher reliance on timely and accurate documentation in critical care and emergency settings, where electronic documentation can enhance workflow efficiency, reduce errors, and improve patient care. Similar observations were reported in Nigeria, highlighting that nurses in high-intensity units often demonstrate more favorable attitudes toward ED due to perceived practical benefits.¹⁵

Overall, these findings highlight the importance of unit-specific training and support to enhance positive attitudes toward electronic documentation. While demographic factors such as age, education, and experience showed no significant influence, the workplace environment and the nature of patient care responsibilities played a significant role in shaping nurses' perceptions and acceptance of ED. Future research should also consider key contextual factors such as whether the hospital is in a developed or developing country, hospital size, and the duration of ED system use, as these variables could explain differences and similarities among studies. Limitations of this study include the short duration of ED implementation and the single-center setting, which may limit generalizability.

Conclusion

The study revealed that a majority of emergency nurses demonstrated a more favorable attitude toward electronic documentation, highlighting that unit-specific factors can positively influence nurses' perceptions. Overall, attitudes were almost evenly divided between positive and negative among the participants. Socio-demographic factors such as age,

education, experience, position, and prior training did not show a significant association with nurses' attitudes. This suggests that the clinical context—meaning the specific working environment, patient population, workflow demands, and operational characteristics of the unit—has a greater impact on nurses' attitudes toward electronic documentation than individual demographic factors. To foster more positive attitudes and improve the integration of electronic documentation systems, it is essential to provide targeted training, unit-specific support, and strategies to address contextual challenges that nurses encounter in their clinical practice.

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Conflict of Interest

None

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None

Author Contribution

Concept, design, planning: BA, AG, KB, SD; Literature review: BA, AG; Data collection: BA, SD; Data analysis: BA, AG; Draft manuscript: BA, AG, KB; Revision of draft: BA. Final manuscript: BA, AG, KB, SD; Accountability of the work: BA, AG, KB, SD ; Guarantor: BA.

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