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IMPLEMENTATION OF THE NURSING PROCESS IN PATIENT CARE AMONG NURSING STUDENTS AT THANG LONG UNIVERSITY AND ASSOCIATED FACTORS

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ABSTRACT

Objective: 1) To describe the barriers to the implementation of the nursing process in patient care among nursing students of Thang Long University; (2) To analyze selected factors associated with the barriers to implementing the nursing process in patient care among the study participants.

Methods: A cross-sectional descriptive study was conducted on all 232 nursing students enrolled in the master's program and the bridging program from college to university at Thang Long University from January to August 2025. The barrier assessment instrument was adapted from the study by Manal Hamed Mahmoud, which demonstrated a Cronbach's alpha of 0.820. Data were collected through interviewer-administered questionnaires and subsequently entered and analyzed using SPSS version 20.0.

Results: Overall, 43.1% of students reported barriers, while 56.9% rated no barriers. The main barriers to implementing the nursing process identified by students included a lack of experience and ongoing training, high workload, staff shortages, non-care-related administrative burden, insufficient equipment and documentation forms, and time and funding constraints. In addition, management-related limitations were noted, including a lack of support and supervision, as well as hospital regulations and legal documents. Several factors were statistically associated with barriers in nursing process practice. Male students experienced more barriers than females (OR = 2.40; $p < 0.001$). Students from Internal Medicine/Pediatrics (OR = 3.08; $p < 0.001$) and Surgery/Obstetrics (OR = 2.37; $p < 0.05$) had a lower prevalence of barriers compared with those from other/specialty departments. Moreover, students in the master's program reported more barriers than those in the undergraduate group (OR = 2.03; p <0,05) There was a significant negative correlation between barriers and years of experience in patient care ($r = -0.325$; $p < 0.001$) as well as with the recency of formal instruction in the nursing process ($r = -0.143$; p <0,05).

Conclusion: The level of perceived barriers among students was moderate, and these barriers were associated with selected personal characteristics, workplace units, and the advanced training programs in which they were enrolled

Keywords: Barriers; nursing process; nursing students.

1. INTRODUCTION

The nursing process is a structured, evidence-based tool that supports nurses in delivering patient care systematically and safely. However, multiple studies have reported that the implementation of the nursing process in practice remains limited and is affected by various barriers. In Ethiopia, Fisseha Hagos et al. found that 90% of nurses had poor knowledge of the nursing process and that its implementation was impeded by resource shortages, work overload, and insufficient training [1]. In Nigeria, Florence O. Adeyemo reported that knowledge was the strongest determinant of nursing process utilization, followed by institutional factors and professional motivation [2]. In Ghana, Wahab Osman et al. observed that although 71% of nurses had good knowledge, the actual implementation rate was only 32.3%, with significant barriers including stressful working environments, lack of policies, and insufficient supplementary training [3]. Similarly, Manal Hamed

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Mahmoud emphasized common barriers, including a lack of time, staff shortages, the absence of guidance documents, and a high workload [4]. In Vietnam, the available literature has mainly focused on describing the current status or isolated steps of the nursing process; few studies have examined barriers and related factors affecting its implementation, particularly among nursing students — a pre-clinical human resource group [5] [6]. Accordingly, this study was conducted with two objectives: (1) To describe the barriers to implementing the nursing process in patient care among nursing students at Thang Long University; and (2) To analyze selected factors associated with those barriers among the study participants.

2. METHODS

2.1. Study design: Cross-sectional descriptive study.

2.2. Study setting and period: Thang Long University, from January to August 2025. Data collection was conducted from January to February 2025.

2.3. Study population: Nursing students enrolled in the master's program and in the bridging program from college to university at Thang Long University. Students on academic leave, those who had withdrawn, those not directly involved in patient care, and those who did not consent to participate were excluded.

2.4. Sample size and sampling

Census sampling; a total of 232 eligible students were recruited. Convenience sampling was used among individuals who met the eligibility criteria and agreed to participate.

2.5. Variables/indicators/contents

- General characteristics: age, sex, years of clinical experience, department, job position, training program, training history.

- Barrier-related variables concerning implementation of the nursing process.

2.6. Data collection tools and procedure

Section A comprised 13 items collecting demographic information, nursing professional background at the workplace, and academic information at Thang Long University.

Section B included items on barriers to implementing the nursing process at participants' workplaces. The instrument was adapted from Manal Hamed Mahmoud's study and consisted of 16 items grouped into four domains: experience-related, work-related, resource-related, and management-related barriers. Responses were rated on a 4-point Likert scale [4]. The instrument showed a Cronbach's alpha of 0.820.

2.7. Measurement and scoring criteria

Barriers were assessed using the 16-item instrument. "Strongly agree" scored 4, "agree" 3, "disagree" 2, and "strongly disagree" 1, yielding a total score ranging from 16 to 64; higher scores indicate greater perceived barriers. Scores were categorized as: no barrier (16–31), moderate barrier (32–47), and high barrier (≥48) [4].

2.8. Data processing and analysis

Data were entered using EpiData 3.0 and collected in parallel via Google Forms. Statistical analysis was performed with SPSS 20.0. Descriptive statistics included percentages and means (±SD). Inferential analysis used correlation coefficients (r) and chi-square tests with a significance level set at $p < 0.05$.

3. RESULTS

Table 1. Characteristics of the study participants (n = 232)

Characteristics	Frequency (n)	Percentage (%)
Sex		
Male	50	21,6
Female	182	78,4
Work sector		
Public	179	77,2
Private	53	22,8
Work unit		
Other specialties	73	31,5
Surgery / Obstetrics	59	25,4
Internal Medicine / Pediatrics	100	43,1
Academic program		
Master's	162	69,8
Undergraduate	70	30,2

The proportion of male students accounted for 21.6%, and 77.2% were working in public healthcare facilities. Most participants (69.8%) were enrolled in the master's program.

Table 2. Barriers to implementation of the nursing process (n = 232)

Barriers	Strongly agree n (%)	Agree n (%)	Disagree n (%)	Strongly disagree (%)
Experience-related barriers				
Lack of experience in implementing the nursing process	50 (21,6)	125 (53,9)	51 (22,0)	6 (2,6)
Inability to individualize patient care when applying the nursing process	30 (12,9)	111 (47,8)	89 (38,4)	2 (0,9)

Barriers	Strongly agree n (%)	Agree n (%)	Disagree n (%)	Strongly disagree (%)
Lack of continuing training on the nursing process	39 (16,8)	138 (59,5)	53 (22,8)	2 (0,9)
Lack of cooperation/support among nurses in implementing the nursing process	40 (17,2)	133 (57,3)	57 (24,6)	2 (0,9)
Work-related barriers				
Excessive workload affects implementation	82 (35,3)	127 (54,7)	22 (9,5)	1 (0,4)
Nurse-patient ratio insufficient for implementation	71 (30,6)	128 (55,2)	31 (13,4)	2 (0,9)
Salary and promotion do not motivate implementation	74 (31,9)	113 (48,7)	43 (18,5)	2 (0,9)
The burden of non-nursing administrative tasks hinders implementation	77 (33,2)	121 (52,2)	32 (13,8)	2 (0,9)
Resource-related barriers				
Lack of equipment for implementation	51 (22,0)	118 (50,9)	62 (26,7)	1 (0,4)
Lack of standardized forms/templates for implementation	48 (20,7)	128 (55,2)	53 (22,8)	3 (1,3)
Lack of time to apply the nursing process in practice	58 (25,0)	137 (59,1)	36 (15,5)	1 (0,4)
Lack of funding for training and implementation	51 (22,0)	124 (53,4)	56 (24,1)	1 (0,4)
Management-related barriers				
Lack of managerial support for implementation	45 (19,4)	95 (40,9)	89 (38,4)	3 (1,3)
Lack of monitoring/supervision/evaluation	38 (16,4)	107 (46,1)	82 (35,3)	5 (2,2)
Lack of institutional policies at hospitals	27 (11,6)	87 (37,5)	106 (45,7)	12 (5,2)
Lack of legal/regulatory documents at the state level	37 (15,9)	84 (36,2)	98 (42,2)	13 (5,6)

The main barriers to implementing the nursing process identified by students included insufficient experience, lack of continuing education, excessive workload, staff shortages, burden of non-clinical administrative tasks, inadequate equipment and documentation forms, lack of time, and limited budget. Additional constraints arose from managerial factors, such as inadequate support and supervision, absence of institutional policies, and lack of legal regulatory documents.

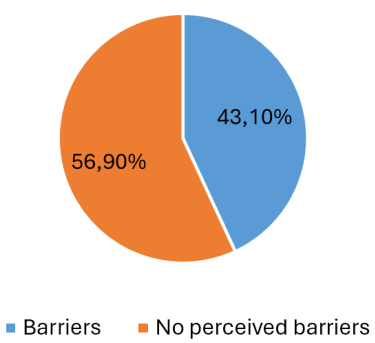

Figure 1. Levels of barriers to nursing process implementation among nursing students (n=232)

Overall barriers were reported in 43.1% of participants, whereas 56.9% rated that no barriers were present.

Table 3. Some factors related to the level of barriers to practicing nursing procedures among trainees (n=232)

Characteristics	High barrier		OR (95%)	p
	Yes n (%)	No n (%)		
Gender				
Male	30 (60,0)	20 (40,0)	2,40 (1,27-4,55)	0,006
Female	70 (38,5)	112 (61,5)		
Work sector				
Public	80 (44,7)	99 (55,3)	1,33 (0,71-2,50)	0,369
Private	20 (37,7)	33 (62,3)		
Work unit				
Other/ specialty	44 (60,3)	29 (39,7)	-	-
Surgery/ Obstetrics	23 (39,0)	36 (61,0)	2,37 (1,18-4,79)	0,015
Internal Medicine/ Pediatrics	33 (33,0)	67 (67,0)	3,08 (1,65-5,77)	0,000

Characteristics	High barrier		OR (95%)	p
	Yes n (%)	No n (%)		
Program of study				
Master's	78 (48,2)	84 (51,9)	2,03 (1,12-3,66)	0,018
Master's	22 (31,4)	48 (68,6)		

Several factors were statistically associated with barriers to implementing the nursing process. Male students experienced greater barriers than females (OR = 2.40; p = 0.006). Students working in Internal Medicine/Pediatrics (OR = 3.08; p < 0.001) and Surgery/Obstetrics (OR = 2.37; p = 0.015) reported lower levels of barriers compared with those in other/specialty departments. In addition, students enrolled in the master's program reported higher barriers than those in the undergraduate group (OR = 2.03; p = 0.018).

Table 4. Correlation between barriers to applying the nursing process and selected characteristics of nursing students (n = 232)

Characteristics	Barriers to applying the nursing	
	r	p
Age	-0,002	0,973
Years of experience in patient care	-0,325	0,000
Time since last formal training on the nursing process	-0,143	0,029

Barriers to applying the nursing process were not correlated with age (p = 0.973). There was a significant negative correlation between reported barriers and Years of experience in patient care (r = -0.325; p < 0.001): the more years of experience, the lower the perceived barriers. Time since last formal training on the nursing process (r = -0.143; p = 0.029): the more recent the formal training, the lower the perceived barriers.

4. DISCUSSION

4.1. Barriers to the implementation of the nursing process in patient care

The findings indicate that, despite the recognized feasibility of applying the nursing process (NP), several notable barriers remain. The most frequently reported obstacles were excessive workload (90.0%), shortage of nursing staff (85.8%), and non-nursing administrative burden (85.4%). These barriers are consistent with international literature. For example, the study by Fisseha Hagos in Ethiopia reported that heavy workload and disproportionate nurse-to-patient ratios were primary reasons why 90% of nurses failed to fully implement NP [1]. Similarly, Wahab Osman in Ghana identified a stressful working environment (96.8%), a lack of supportive policies (94.7%), and insufficient training (91.5%) as key barriers [3].

In addition, lack of continuing education (76,3%) and limited practical experience (75,5%) were also commonly acknowledged. This aligns with Florence Adeyemo's findings in Nigeria, which highlight insufficient supplemental training and reliance on habitual practices as constraints to NP implementation [2]. Likewise, Tahere Moghadas in Iran found that inadequate clinical exposure and lack of ongoing training were significant barriers among nursing students [7].

About resources, a considerable proportion of learners agreed that insufficient equipment (72.9%), lack of standardized documentation forms (75.9%), and limited time (84.1%) hinder NP application. These findings are consistent with Manal Hamed Mahmoud's study in Egypt, in which nurses reported inadequate infrastructure and the absence of standardized guidelines as major obstacles [4].

Notably, managerial factors were perceived as the least significant barriers, with only 18.1% reporting lack of supervision, support, or regulatory guidance as hindrances. This proportion is much lower than in Wahab Osman's study (Ghana), where 94.7% cited policy and managerial deficiencies as principal barriers [3].

Overall, nursing learners at Thang Long University appear to experience fewer barriers compared with practicing nurses in international studies. The predominant barriers are related to workload, workforce, training, and resources, whereas management-related barriers were minimally reported. These results suggest that improving NP implementation requires prioritizing workload reduction, staffing reinforcement, enhancing continuing education, and providing resources, while maintaining supportive managerial structures.

4.2. Factors associated with barriers to nursing process implementation

The analysis revealed that several personal and professional characteristics significantly influenced perceived barriers to NP practice.

First, gender was statistically associated with perceived barriers, with male learners reporting higher levels of barriers than females (OR=2.40; p=0.006). This may be attributed to the fact that male nurses are more frequently assigned to high-intensity or technical units, resulting in higher workload and perceived barriers. Previous studies, such as Florence Adeyemo's [2], did not identify gender-based differences, suggesting that these findings may reflect workplace assignment practices specific to local training and hospital settings in Vietnam.

Regarding departments, learners working in Internal Medicine & Pediatrics (33.0%) and Obstetrics-Surgery (39.0%) reported fewer barriers than those in small or specialty units (60.3%). This suggests that central clinical departments with more standardized NP protocols facilitate implementation, whereas smaller or specialized units (e.g., ENT, Dental-Maxillofacial, Traditional Medicine) may lack standardized practice, creating barriers. This highlights a need for standardization across departments.

Significantly, training program level was associated with perceived barriers: graduate (master's) learners reported higher barriers than undergraduate learners (48.2% vs. 31.4%; OR=2.03; p=0.018). One plausible explanation is that master's learners often have more clinical experience and managerial roles, making them more aware of systemic gaps in staffing, resources, and policies.

Correlation analysis showed a significant inverse relationship between years of clinical experience and barriers (r = −0.325; p = 0.000), indicating that more experienced nurses face fewer barriers, likely due to familiarity and adaptive skills. Similarly, the recency of formal NP training was inversely correlated with barriers (r = −0.143; p = 0.029), suggesting that up-to-date knowledge mitigates perceived barriers. These results are consistent with Wahab Osman's findings, in which the lack of training and knowledge updates was a key obstacle [3].

In summary, determinants of NP barriers are primarily associated with gender, workplace setting, educational level, and clinical experience. These findings underscore the need for rational staffing policies, standardization across departments, and routine training updates for both undergraduate and postgraduate nursing learners.

5. CONCLUSION

This study, conducted among 232 nursing learners (master's and bridging undergraduate students), found that 43.3% perceived significant barriers to applying the nursing process in patient care, with work-related barriers being the most prominent (>80%). Barriers were inversely correlated with years of clinical experience (r = −0.325; p = 0.000) and with the recency of formal NP training (r = −0.143; p = 0.029). Other factors significantly associated with barriers included gender (higher among males), workplace setting (higher in small/specialty units than central clinical departments), and training program level (higher among master's learners), with statistically significant differences (p<0.05).

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