



Clinical Reasoning Skills of Registered Nurses in Individualized Nursing Care Planning and Quality of Patient Care in Tertiary Hospitals

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ABSTRACT

Background:

Nursing care plans are essential for providing personalized and well-coordinated patient care. This study assesses nurses' proficiency in developing nursing care plans within an academic hospital.

Methods:

A cross-sectional study was conducted in selected wards involving 273 registered professional nurses, chosen through a random sampling approach. Analyses were conducted using STATA version 16.1 (StataCorp, Texas, USA), with a p-value of 0.05 considered statistically significant.

Results:

The findings show that out of 218 participating nurses (79.9% response rate), most nurses, 207 (94.8%), were knowledgeable in writing nursing care plans. Additionally, 136 (62.4%) had a positive attitude, but notably, 128 (58.7%) demonstrated poor practice. Nurses in psychiatry, obstetrics and gynaecology, and paediatrics wards were more knowledgeable ($p < 0.05$). Moreover, those aged 60+ had less favourable attitudes ($p < 0.05$), and those with over five years of experience were more likely to have poor practices ($p < 0.05$).

Conclusion:

This study highlights the need for systems that connect academic knowledge with clinical practice through ongoing and specialized training. Improving practical skills in care plan development is crucial for enhancing patient care quality, increasing workflow efficiency, and boosting nurses' satisfaction. This research adds to the discussion on nursing education and practice transformation in resource-constrained healthcare environments.

Key-words: Nursing care plan, clinical reasoning, healthcare education, nursing skills, patient care.

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INTRODUCTION

Nurses play a pivotal role in providing care to patients, families, and communities¹⁻³. Additionally, they are at the forefront of delivering holistic, patient-centred care⁴. This involves a thorough assessment, evaluation, and the execution of diverse interventions to ensure the best possible outcomes for patients. They also play a crucial role in empowering patients and their families to take an active role in their own care. Central to this process is the nursing care plan, a carefully formulated document that outlines the nurse's approach to patient care. This plan not only specifies the necessary direction for individual patient care but also serves as a record of the effectiveness of the interventions applied. A robust nursing care plan is characterized by its adherence to standardized, evidence-based practices that prioritize holistic and patient-centred approaches. Registered nurses bear the responsibility of devising and executing these care plans⁵, ensuring they meet the stringent legal standards for nursing care documentation, thereby providing a reliable, ethical, and efficacious framework for patient care⁶.

The significance of effective communication among nursing teams cannot be overstated, particularly given the significant impact of nursing care plans in minimizing healthcare errors. These errors are prevalent and often attributed to communication failures among nurses, which rank as a primary cause⁷⁻¹⁰. Studies on the implementation of nursing care plans have identified several challenges, such as the high volume of patients, equipment deficits, and a shortage of nursing staff¹¹⁻¹⁴. Other issues include insufficient oversight by nursing managers, insufficient time to carry out care plans, substandard nursing documentation, inadequate educational levels, and a lack of continuous training opportunities. Likewise, in our institution, the role of registered nurses is critical. They are responsible for crafting a comprehensive nursing care plan for each patient, which acts like a personalized map that guides care based on a patient's specific needs and desired outcomes.

Without a plan, information sharing becomes

disjointed, leading to misunderstandings and potentially incorrect care. This plan includes a thorough assessment of the patient, identifying their health needs, devising a strategy to meet these needs, executing the plan, and meticulously documenting every step taken to ensure the delivery of top-notch health care. However, the evaluation of nurses to ensure their proficiency in creating these plans has been insufficient or altogether neglected. Addressing these issues is critical, as failing to recognize patients' needs and lacking a plan to meet those needs can compromise the quality of care provided. Therefore, this study seeks to assess nurses' proficiency in developing nursing care plans within an academic hospital.

METHODOLOGY

This study employed a descriptive cross-sectional design to assess nurses' proficiency in developing nursing care plans. The study's participants were registered nurses from various wards at a Tertiary facility in Gauteng Province, including General Surgery, Paediatrics, Specialist, Psychiatric, Medical, and Obstetrics and Gynaecology.

Inclusion and Exclusion Criteria

The study included all registered nurses who were permanently employed, worked day shifts in the designated wards, and were registered with the South African Nursing Council. Registered nurses who were not permanently employed, as well as those contracted through nursing agencies, were not included in the study.

The minimum required sample size was determined to be 273. This figure was derived using the Rao-Soft online sample size calculator, based on the following parameters: an estimated 931 registered nurses working the dayshift across the selected wards; a confidence level of 95%; a margin of error of 5%; and an assumed response distribution of 50%. Convenient sampling was employed to choose the six wards, while simple random sampling was utilized to select the registered nurses from each ward, following proportional allocation within the six wards chosen in the hospital. The data collection was carried out

over three months, from April to June 2021, at an academic hospital affiliated with a South African university. The researchers gathered data through a self-administered questionnaire, developed after reviewing pertinent literature^{6,15-17}. These tools, often standardized for specific patient environments and cultures, may not suit other countries with differing backgrounds and cultures. Consequently, this study's nursing care plan questions were crafted in accordance with the South African national guideline. The questionnaire comprised two sections: Section A detailed participant demographics, including age, gender, qualification level, nursing experience, and current unit. Section B was divided into three domains with 26 items in total, addressing knowledge, attitude, and practice related to nursing care plans. The knowledge and attitude domains each comprise ten questions, while the practice domain contained six questions, all evaluated on a 5-point Likert scale (1 representing strongly disagree and 5 representing strongly agree). The maximum score for each question in the knowledge and attitude domains was 50. Nurses scoring $\geq 75\%$ in the knowledge domain are deemed to possess good knowledge; otherwise, their knowledge is considered poor. Similarly, in the attitude domain, scores $\geq 75\%$ indicate a favourable attitude, with lower scores indicating an unfavourable attitude. In the practice domain, the total score for the six questions is 60, and nurses achieving $\geq 75\%$ are regarded as having good practice, while those with lower scores are seen as having poor practice. The reliability and validity details of the questionnaire used in this study have been previously published¹⁸. Prior to data collection, three trained research assistants piloted and administered the tool to

27 participants. Data was analysed using the statistical programme STATA version 16.0 (StataCorp., USA). The demographic characteristics of the participants were presented using frequencies and percentages. The association between demographic characteristics and the two groups was tested using the Fisher Exact and/or Chi-square tests. A p-value of less than 0.05 was considered statistically significant. The study received ethical clearance from the Sefako Makgatho Health Sciences University's Research Ethics Committee (Ref: SMUREC/H/205/2020: PG), and the hospital management granted permission to access participants. All participants were duly informed about the study's aims and objectives. All collected data will be handled with strict confidentiality. Data were anonymized, ensuring that no personal identifiers are linked to the responses. The data were securely stored in a password-protected electronic database, accessible only to the research team.

RESULTS

Demographic Characteristics

In this study, a robust response rate of 79.9% was achieved, with 218 out of 273 nurses participating. Of these, 111 nurses, representing slightly over half (50.9%) of the participants, were aged 40 years or younger. A significant majority, 203 participants (93.1%), were female. Regarding educational qualifications, a substantial portion, 157 nurses (72.0%), held a diploma as their highest level of education. Work experience varied among participants, with 90 (41.3%) having ≤ 5 years of nursing experience. The distribution of participants across hospital wards was also noted, with the medical ward employing the most nurses at 63 (29%), followed by the specialist ward with 43 (20%) nurses.

Table 1: Demographic Information

	n	%
Age		
<30	46	21.1
31-40	65	29.8
41-50	45	20.6

60+	62	28.4
Gender		
Male	15	6.9
Female	203	93.1
Level of education		
Diploma	157	72.0
Bachelors	49	22.5
Postgraduate	10	4.6
Unspecified	2	0.9
Years of experience (years)		
<1	34	15.6
1-3	25	11.5
4-5	31	14.2
6-10	50	22.9
>10	77	35.3
Unspecified	1	0.5

Knowledge towards writing nursing care plans and its association with demographic factors

Most nurses 207 (94.8%) demonstrated good knowledge in writing nursing care plans, while a small number 11 (5.2%) showed poor knowledge. A significant correlation was found between the nurses' knowledge and their work settings (Table 2). Specifically, nurses working in psychiatry, obstetrics & gynaecology, and paediatrics were more likely to possess substantial knowledge in creating nursing care plans compared to their counterparts in other specialties ($p < 0.05$). However, no significant relationship was observed between the nurses' knowledge and their age, gender, educational level, or years of experience ($p > 0.05$, Table 2).

Attitude towards writing of nursing care plans and its association with demographic factors

In this study, most participants, constituting nearly two-thirds (136, 62.4%), exhibited a favourable attitude towards the writing of nursing care plans, while a minority of 82 (37.6%) displayed an unfavourable attitude. Notably, nurses aged ≥ 60 years were significantly more likely to hold an unfavourable view compared to their younger counterparts ($p < 0.05$). Furthermore, the study revealed that there was no significant correlation between the nurses' attitudes towards writing care plans and their gender, educational level, years of experience, or current work environment ($p > 0.05$).

Table 2: Association between knowledge, attitude, practices in writing nursing care plans and demographics

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Variables	n	Knowledge, n (%)			Attitude, n (%)			Practice, n (%)		
		Good	Poor	p-value	Positive	Negative	p-value	Good	Poor	p-value
Age										
<30	46	44(96)	2(4)	0.848	32(70)	14(30)	0.029*	19(41)	27(59)	0.183*
31-40	65	61(94)	4(6)		43(66)	22(34)		21(32)	44(68)	
41-50	45	44(98)	1(2)		32(71)	13(29)		24(53)	21(47)	
60+	62	58(94)	4(6)		29(47)	33(53)		26(42)	36(58)	
Gender										
Male	15	13(87)	2(13)	0.169	8(53)	7(47)	0.582	7(47)	8(53)	0.787
Female	203	194(96)	9(4)		128(63)	75(37)		83(41)	120(59)	
Level of education										
Diploma	157	149(95)	8(5)	0.839	93(59)	64(41)	0.142	60(38)	97(62)	0.312
Bachelors	49	46(94)	3(6)		32(65)	17(35)		24(49)	25(51)	
Postgraduate	10	10(100)	0(0)		9(90)	1(10)		5(50)	5(50)	
Years of experience										
≤5	90	85(94)	5(6)	0.765	52(58)	38(42)	0.260	75(83)	15(17)	<0.001*
>5	127	121(95)	6(5)		83(65)	44(35)		61(48)	67(52)	
Current work setting										
Medical	63	60(95)	3(5)	0.044	34(54)	29(46)	0.095	22(35)	41(65)	0.089
Specialist	43	40(93)	3(7)		31(72)	12(28)		24(56)	19(44)	
Surgical	31	26(84)	5(16)		17(55)	14(45)		8(26)	23(74)	
Psychiatry	18	18(100)	-		12(67)	6(33)		10(56)	8(44)	
O&G	44	44(100)	-		33(75)	11(25)		19(43)	25(57)	
Paediatrics	19	19(100)	-		9(47)	10(53)		7(37)	12(63)	

Practice towards writing nursing care plans and its association with demographic factors

Concerning the level of practice, fewer than half of the nurses 90 (41.3%) demonstrated good practice in writing nursing care plans, whereas a majority 128 (58.7%) exhibited poor practice. Notably, participants with over five years of work experience were significantly more likely to have poor practices in writing nursing care plans ($p < 0.05$). No statistically significant correlation was found between the nurses' age, gender, educational level, or current work setting and their practices in writing nursing care plans ($p > 0.05$).

DISCUSSION

The study aimed to assess the knowledge, attitudes, and practices of nurses regarding the writing of nursing care plans in the wards of an academic hospital in Gauteng province, South Africa. Our research revealed that 21% of the participants were under 30 years old, a figure notably lower than the 57.1%¹⁶ and 68.2%¹⁹ reported in previous studies. However, it exceeds the 2.7% reported by Nakate et al.¹⁵. Contrary to various studies that have reported a predominance of male participants^{16, 19}, our research revealed a notable majority of female participants, with 93% being women. This is consistent with the results of numerous other studies which have also found that females constituted most of their study subjects^{17, 20}. Studies indicate that a significant portion of nurses possess bachelor's degrees as their highest educational qualification^{16, 19-21}.

Conversely, other research emphasizes the commonality of certificates or diplomas in the field of nursing^{6, 15}. Notably, this specific study reveals that a striking 72% of nurses have attained diplomas as their ultimate academic achievement. Diverse findings have been presented regarding the years of experience in nursing. Andualem et al. discovered that nearly half (50.8%) of the nurses in their research had five or fewer years of professional experience¹⁶. Jasemi et al. observed an even distribution of work experience among nurses, with equal numbers having ≤ 5 years and > 5 years²⁰. Conversely,

Nakate et al. reported that all their study participants had more than five years of experience¹⁵. Similarly, some studies reported that most nurses had less than five years of experience²¹, while others indicated more than five years²⁰. In the current study, less than half of the nurses had under five years of experience. The findings of the current study indicate that most participating nurses were assigned to Medical and Specialist wards. Various authors have noted that in their research, nurses were primarily positioned in regular Outpatient Departments (OPD), as well as Surgical and Medical wards^{15-16, 19, 21}, and the Obstetrics and Gynecology units¹⁵.

Our study finding revealed that an overwhelming majority (94.8%) of nurses possessed a strong understanding of writing nursing care plans. This percentage was significantly higher than the 43%²⁰⁻²¹ and 54.6%¹⁶ reported in Ethiopia. Conversely, a cross-sectional study among 170 nurses across 32 Medical-Surgical units in four university hospitals in Tabriz, Iran, indicated that most nurses (85.9%) had inadequate knowledge of the nursing documentation process¹⁹. The discrepancies in these studies' results may stem from the lack of available reading materials on nursing documentation. In-service training on medical documentation has been shown to improve proficiency in writing nursing care plans^{15, 22-24}.

This study shows that nurses in psychiatry, paediatrics, and obstetrics and gynaecology units were significantly more proficient in writing nursing care plans compared to those in other disciplines. The possible reason for this could be that nurses working in these areas have undergone a 1-year course in the writing of nursing care plans after completing the general nursing course. The attitude of nurses towards the creation of nursing care plans is pivotal for delivering quality patient care. Andualem et al. emphasized the importance of fostering a positive outlook on nursing care documentation to enhance service quality¹⁶. Mwangi et al. discovered that 50% of nurses viewed nursing care documentation positively¹⁷, a figure comparable to the 54% and 58.8% observed in both Uganda¹⁵ and Ethiopia¹⁶, respectively.

However, this study revealed a higher percentage, with 62.4% of nurses holding a favourable view on the drafting of nursing care plans. This notable difference in the attitude towards nursing care documentation might be due to participants' differences in their level of educational background.

Studies revealed that the work environment significantly influences nurses' attitudes towards the documentation of nursing care. Nurses in outpatient departments tend to have a more positive attitude compared to their counterparts in inpatient settings^{20, 25-26}. The study's findings suggest that, except for Specialists and Obstetrics & Gynaecology departments, a larger percentage of nurses exhibit less favourable attitudes; however, these differences were not statistically significant. Our research also reveals a fascinating trend: a considerable number of nurses aged 60 and above tend to have a less favourable attitude towards the documentation of nursing care when compared to their younger colleagues. This disparity may stem from various factors that merit further investigation. Although this study observed a high level of knowledge and a positive attitude towards writing nursing care plans, only 41.3% of the nurses demonstrated good practice in writing them. This rate is comparable to studies in Ethiopia at 47.5%¹⁶, and 47.8%⁶, but lower than studies in Nigeria²⁷ at 70% and Ghana²² at 54%, which indicated better nursing care documentation practices.

The current study's findings surpassed those of a cross-sectional study at the University of Gondar Hospital in Germany, where 37.4% of nurses exhibited good practices of nursing care plans²⁸. The discrepancy may stem from variations in workload and supervision. Additionally, poor practices may result from not having a nursing care plan available for every patient in the ward and failing to review the nursing care plan twice daily for each patient. Without clear nursing care plans, nurses might miss essential interventions and delays in these actions may lead to decreased efficiency and potentially delayed care for patients. This study also noted that nurses with over five years of experience often

demonstrated suboptimal practices in writing nursing care plans, highlighting the need for further research into this matter. Effective nursing care plans are crucial as they offer a systematic approach to patient care and facilitate communication among healthcare providers, with the goal of providing high-quality, consistent, and evidence-based care.

LIMITATIONS

The limitations of the study are as follows. Being a cross-sectional descriptive study limited to one health care facility; its findings are not generalizable to other facilities within the province. The absence of a qualitative component means that it lacks in-depth information. Furthermore, the study did not involve a review of patient records, which would have been a significant indicator of each health worker's documentation practices. Finally, the use of self-administered questionnaires at the workplace for data collection could have introduced social desirability bias.

CONCLUSION

This study revealed that while nurses at this academic hospital possess adequate knowledge regarding the formulation of nursing care plans, their attitudes and practices fall short. These findings call for a strategic re-alignment of professional development frameworks, emphasizing continuous, competency-based training and mentorship tailored to clinical realities. Additionally, bridging the gap between academia and bedside execution is not only essential for improving patient outcomes but also for enhancing professional efficacy and morale. As healthcare systems transcend, the ability of nurses to craft and formulate effective care plans should be recognized as a cornerstone of quality patient care delivery. The study recommends ward-specific training modules to reflect the unique clinical demands of different specialties, structured mentorship and peer-learning systems to foster collaborative skill and capacity building, while simulation-based learning should be integrated into routine practice to reinforce clinical reasoning and precision. Additionally

institutional policies which support standardized and high-quality documentation, with digital tools and

electronic health record systems to guide nurses in real-time patient care plan formulation.

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