

Research Article

Factors Affecting the Implementation of Nursing Care Plans in Patient Care

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Abstract: Background: Nursing Care Plan (NCP) is used in practice as a systematic and scientific problem-solving method to determining the care needs of individuals. There is lack of research on factors affecting regarding utilization of nursing care plan in patient care.

Objective: The objective of this study were to evaluate the implementation of the nursing process and to determine the factors that may influence the implementation of the nursing process.

Materials and Methods: A cross-sectional survey was conducted at a private hospital during February to June, 2023. The study protocol was reviewed and approved. Permission from institutional heads was sought. Informed consent was obtained before data collection. Simple random sampling method was employed. The data were collected with structured questionnaires whose responses were rated on Likert scale. Data were coded and analyzed using SPSS v25.0.

Result: A total 108 nurses participated in the study. Study findings revealed 89% of the nurses were female nurses and 82% possessed diploma in nursing. The knowledge 50.5%, confidence 50.9% and willingness 54.2%, were at borderline good level. Whereas, assessment and diagnosis, planning, implementation, evaluation, and nurses' views about nursing care planning implementation were at < 50% as poor. There was a moderate positive correlation between knowledge and implementation R-Value 0.312 and confidence and evaluation R-Value 0.246. Barrier to implement nursing process included uncooperative patients, lack of awareness about nursing process, lack of preparedness, low satisfaction level, lack of in-service training, lack of time, and high patient flow.

Conclusion: Study's findings revealed knowledge, confidence and willingness of the nurses determine the use of nursing process in their nursing practice.

Keywords: Nurse, Nursing care plan, Nursing care, Nursing process, Nursing, Patient.

INTRODUCTION

Nursing Care Plan (NCP) determines the specific actions and interventions that nurses take to provide optimal care to a patient. It is a crucial tool in nursing practice, as it helps to organize and communicate the nursing care that a patient requires [1]. The nursing care plan is typically developed through a systematic process that involves assessing the patient's health status, and identifying their needs. The plan is customized for each patient, taking into account their medical history, current condition, and any potential risks or complications [2, 3]. It is also seen as a decision-making approach that treats the individual as a whole in psychological, sociocultural, spiritual, and economic dimensions and encourages critical thinking in nursing [4, 5].

Nursing education and training strongly emphasize the use of nursing care plan in nursing practice. Nursing care plan ensures

comprehensive care, promote consistency of patient care, supports evidence-based practice, empower patients, reduce medical errors and enhance patient safety [6, 7]. However, it is reported that nurses face challenges to implement nursing care plan effectively in patient care owing to various reasons [8]. The difficulties experienced by nurses to implement nursing care plan arises from characteristics of the nurses including level of education, knowledge about NCPs, and factors effecting implementation of NCPs in patient care. This requires nurses to deeply internalize the implementation of nursing care plan taking into account of multiple factors, as well as competence of the nurse [9, 10].

Nursing process implementation could be highly influenced by different factors that can lead to poor quality of nursing care, disorganization of the service, conflicting roles, medication error, poor diseases prognosis, readmission, dissatisfaction with the care provided, increase hospital stay and increased mortality. Several studies have documented knowledge deficit among nurses in various health facilities [11-16], lack of motivation and skill in using the care process, and absence of collabora-

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tion between nurses [2]. Some hospital management factors that could affect the proper use of the process are repetitious replacement of the nurses, shortage of nursing staff, no format for writing, lack of monitoring on the nursing process, and lack of necessary facilities and enough time [16]. This has been demonstrated in developing countries with limited resources. There are handful studies on the topic under research; more research is required in this area. Because of the magnitude of the problem, this study focuses on measuring the determinants for implementation of nursing care plans in patient care.

MATERIALS AND METHODS

A cross-sectional survey was conducted at a private hospital during February to June, 2023. The sample size (n) was calculated using finite population correction formula as, $n = [z^2 * p * (1 - p) / e^2] / [1 + (z^2 * p * (1 - p) / (e^2 * N))]$, where: $z = 1.96$ for a confidence level (α) of 95%, $p =$ proportion (expressed as a decimal), $N =$ population size, $e =$ margin of error. $z = 1.96$, $p = 0.5$ denoting prevalence of issue, $N = 150$ total nurses, $e = 0.05$. The calculation determined the sample size of 108 nurses. The nurses were recruited through simple random sampling. Nurses having at least one year experience and above were included while nurses in the probation and resignation notice period were excluded from research.

The data were collected through self-reported method, informed consent and questionnaires were handed over to the nurses and collected on subsequent days.

The questionnaires were delivered immediately to the researcher after completion to avoid any biasness resulted from interaction of nurses with each other. The randomly selected nurses were invited to fill the questionnaire comprising of 2 sections, demographics of study participant section and the implementation of nursing process by nurses' section. This whole procedure took maximum 20 minutes of the study participants.

The questionnaire regarding the implementation of the nursing process was adopted [17]. The questionnaire was previously shown to be a valid and reliable with 0.70 Cronbach alpha. The study instrument comprised of demographic information including gender, level of professional education, age, and experience of the study participants. The total number of items in questionnaire were 59, divided in the following sections. The second section of the instrument comprises of 31 items for nursing care plan. This section contains four subscales namely assessment and diagnosis 7-items, planning 9-items, implementation 10-items, and evaluation 9-items. Each item is the scale is rated in 5-points Likert scale (strongly agree=5, agree=4, neither agree nor disagree=3, disagree=2, strongly disagree=1). Third section consisted of 28-items divided into knowledge 4-items, confidence 4-items, willingness 4-items and nurses' opinions about the implementation of nursing care plans 17-items. This scale is rated on the 4-points Likert scale (strongly agree=4, agree=3, disagree=2, strongly disagree=1).

The study was reviewed by the research committee of the institute. Permission from the institutional head was taken. Informed consent was obtained from the nurses prior to data collection. Data collection was entirely voluntary. Study participants could opt not to participate and can also leave the study without giving a reason. Data were collected anonymously to ensure confidentiality.

STATISTICAL ANALYSIS

The data were coded and entered in the SPSS version 25.0 for analysis. The demographic information i.e., categorical (sex, education and hospital type) are presented in frequency and percentage. The continuous data (age, experience) is tested for normality using Shapiro-Wilk test. A value of >0.05 was test the assumption normal distribution. The normally distributed data presented through mean and standard deviation while non-normally distributed data interpreted through the median and interquartile range. The determinants were measured using Pearson's test. A P-Value of < 0.05 determined as significant. While R-Value was used to determine the strength of the relationship which can be either no relationship, a positive relationship, or a negative relationship. A value close of 1 determined as stronger relationship or effect of the variable.

RESULT

A total of 108 nurses participated in the study. The response rate was 100%. The study participants predominantly comprise of female nurses 89% than their male counterparts who were only 11%. Most of nurses 82% possessed basic nursing diploma. Only 18% were Bachelor of Science in Nursing; out of this 6% were owning Post Registered Nurse Bachelor of Science in nursing degree. Most nurses belong to the age group ≤ 29 years. There were 26 nurses in the 30-35 years age group, 24 nurses in 36-41.50 age group and 41.51+ years age group. Most of the nurses' experience belonged to the 6-12.5 years group and least to the 12.5-20 years group. There were 34 nurses who have ≤ 5 years of experience and 22 nurses 21+ years of nursing practice experience (Table 1).

Table 1. Demographic Characteristics of Nurses (n=108).

Demographic Variables		%	Frequency
Gender	Male	11.0	12
	Female	89.0	96
Professional Education	Diploma	82.0	89
	Bachelor	12.0	13
	Post RN – BSN	6.0	6
Age (years)	≤ 29	28.7	31
	30 – 35	24.1	26
	36 – 41.50	22.2	24
	42 +	25.0	27

Continued

Experience (years)	≤ 5	31.5	34
	6 – 12.5	33.3	36
	12.6 – 20	14.8	16
	21 +	20.4	22

The mean score more than > 50% determined as good and < 50% determined as poor. The mean willingness of nurses to implement nursing care plan was just around the good 54.2%. The range of score indicate that nurses' willingness was as low as 33.3% and as high as 75%. The mean knowledge and confidence of nurses to use nursing care planning was at borderline 50.5% and 50.9% respectively. The knowledge was ranged between 25-75% and confidence ranged between 37.5-75% correspondingly. The utilization of nursing care plan components in the nursing practice were rated lowest and poor by the study participants. The mean assessment and diagnosis score was at 40.8%, ranging between 28.6-54.2%. The mean planning score was at 41.2%, ranging between 28.8-55.6%. The mean implementation score was at 40.6% and ranged between 32-52%. Lastly, mean evaluation was lowest among questionnaire's subscales, the score was at 40.5% and ranged between 24-56% (Table 2).

Table 2. Descriptive Statistics of the Nursing Care Plan Components (n=108).

Sr.	Subscales of NCP Measurements	Mean	Std. Deviation	Minimum	Maximum
1	Assessment & Diagnosis	40.8	5.4	28.6	54.2
2	Planning	41.2	5.7	28.8	55.6
3	Implementation	40.6	4.3	32.0	52.0
4	Evaluation	40.5	7.3	24.0	56.0
5	Knowledge	50.5	8.9	25.0	75.0
6	Confidence	50.9	8.5	37.5	75.0
7	Willingness	54.2	9.7	33.3	75.0
8	NCP Implementation	49.3	4.8	39.8	63.3

Table 3 depicts the correlations between the components of nursing care plan, knowledge, confidence, willingness, nursing care plan implementation factors and experience of nursing practice. The knowledge of nurses was statistically significant moderate positive correlated with the implementation of the nursing care plan (P-Value < 0.05; R-Value= 0.312). The confidence to use nursing care plan in nursing practice was statistically significant moderate positive correlated with the evaluation of the nursing care plan (P-Value < 0.05; R-Value= 0.246). Whereas willingness, factors for nursing care plan implementation, and experience of the nurses did not show a statistically significant correlation with the components of the nursing care plan. However, the correlations among these variables were weak.

Table 3. Pearson's Correlations between Components of Nursing Care Plan and Factors (n=108).

Nursing Care Plan Components		Knowledge	Confidence	Willingness	NCP Implementation	Experience
Assessment and Diagnosis	R-Value	0.075	0.048	-0.110	-0.009	0.170
	P-Value	0.440	0.619	0.257	0.923	0.079
Planning	R-Value	-0.002	-0.097	0.147	0.088	-0.065
	P-Value	0.980	0.317	0.130	0.365	0.504
Implementation	R-Value	.312**	-0.171	0.166	-0.138	0.092
	P-Value	0.001	0.077	0.087	0.154	0.343
Evaluation	R-Value	-0.054	.246*	-0.176	-0.077	-0.131
	P-Value	0.577	0.010	0.068	0.426	0.176

*Correlation is significant at the 0.05 level (2-tailed).
 **Correlation is significant at the 0.01 level (2-tailed).

Table 4 depicts the factors affecting the implementation of the nursing care process in the nursing practice. A mean score of > 2.0 is considered a hindering factor. The mean scores are organized from high to lowest. Nurses reported uncooperative patients as a major hindrance to implementing the nursing care plan. Nurses indicated that patients' awareness of the nursing process contributed to the lack of nursing care plan implementation. The nurse also acknowledged that the lack of practice in the implementation of nursing diagnosis and lack of preparedness or knowledge about the nursing process were barriers to implementing nursing care plans at their clinical practice. Nurses also reported that low satisfaction levels, absence of in-service training pertinent to the nursing process, lack of time, and high patient flow mired nurses to implement the nursing care plans.

Table 4. Factors affecting Implementation of Nursing Process.#

Sr.	Factors	Mean	SD
1	Uncooperative patient	3.14	1.11
2	Awareness towards nursing process	2.82	0.67
3	Lack of practice in implementation of nursing diagnosis	2.81	0.73
4	Lack of preparedness or knowledge about the nursing process	2.73	0.57
5	Low satisfaction level	2.55	0.52
6	Absence of in-service training pertinent to nursing process	2.50	0.70
7	Lack of time	2.39	0.54
8	High patient flow	2.08	0.46
9	Lack of monitoring and evaluation	1.61	0.67
10	Early patient discharge	1.54	0.79

Continued

11	Lack of motivation for implementers	1.53	0.55
12	Poor patient economic status	1.46	0.55
13	Lack of resource	1.42	0.66
14	Poor/no support from administrators	1.38	0.58
15	Lack of supports from colleagues	1.26	0.48
16	Low salary	1.07	0.35
17	High patient to nurse ratio	1.02	0.14

#Items are organized in high to low scores.

DISCUSSION

This study found that most the study participants were female. This finding is consistent with other studies conducted in the national and international context [15,16,18]. Nursing is considered a female oriented profession. This is also attributed to the admission criteria ratio for male and female. Study findings revealed that few nurses possessed the Bachelor of Science in nursing degree and most were having the basic registered nurse diploma. Regardless of transformation and stimulation of nursing from diploma to degree by Pakistan Nursing Council and Higher Education of Pakistan. Perhaps there are not enough institutes to accommodate the registered nurse to offer them post registered nurse Bachelor of Science in nursing degree. Very few nurses possess post registered nurse Bachelor of Science in nursing degree. Recent economic inflations and surge may also be hindrance to attain or seek admission in post registered nurse Bachelor of Science in nursing degree. However, higher education is imperative for the professional development of nurses which in turn could increase the knowledge of nurses, as well as improve the nursing practice which is imperative for patient safety and favorable clinical outcomes [19].

The nurses participated in the current study have different years of experience as they are at different career levels of their profession. However, it is also clear that whether less or more experience, the education level of most nurses was basic registered nurse. It means that there may be greater influence of experience learning. The learning of practice environment generally influences the experiential learning. A positive conducive environment can be facilitated to enhance learning which can increase the confidence of the nurses to practice as per guidelines. On the other hand, a compromising and hindering environment could have negative nursing practice impacts. Generally, as the experience increases the number of nurses’ decreases and vice versa more nurses with less experience. However, in current study many nurses possessed more than 21 years of experience. Nursing shortage may have contributed to this phenomenon when more nurses are required but education system could not accommodate them. As a result, then less nurses enter in to the practice environment. Currently another trend is observed that many young nurses strive to work overseas. Therefore, nurses with more age and experience remain in the current system to provide services of care delivery to patients.

The nurses scored the implementation of nursing process as

poor in their nursing practice. The assessment and diagnosis, planning, implementation, and evaluation all were poor as determined by mean score around 40%. The poor scores in these stages imply that even when issues are identified, the planning and execution of solutions are lacking. This could be due to a variety of factors such as resource constraints, lack of coordination, or inadequate strategies.

This indicates that these areas are currently underperforming and require improvement. It was also evaluated that the maximum score of these determinants is between 52-56% that is just above the cutoff point. The fact that the best possible performance in these areas is only slightly above the cutoff point implies that there may be systemic or structural limitations in place. It might require significant efforts and changes to move from borderline good to an excellent level of performance. The higher score may be attributable to the nurses who possessed the Bachelor of Science in Nursing degrees and the poor score to the nurses who have basic nursing diploma in nursing. Most nurses in current study were having more than five years of experience. It seems that their experience is not enabling them to implement the nursing care process. This may also associate with the professional educational level of the nurses which was predominantly registered nurses. However, influence of the environment cannot be disregarded. They might not have enabled and supportive environment to exercise the implementation of nursing care process. This is supported by previous study that lack of supportive environment hinder the nurses to implement nurse care plans [20]. Furthermore, this is worrisome for the nursing practice which is linked with patient outcomes.

The study revealed a statistically significant and positive correlation between knowledge and the implementation of the nursing care process. The positive correlation, which is of moderate strength, may be attributed to the wide range of scores on the higher end of the scale. The implementation is linked with nursing interventions to fulfill the needs of patients. Moreover, greater experience of nurses may have enabled nurses for implementation of nursing care plan. Therefore, nurses were confident to evaluate the nursing process. This is evident by positive moderate correlation between confidence and evaluation. The evaluation generally involves the outcome of an intervention. For instance, pain medication is administered to the patient. After certain time, then nurse inquire about reduction in the pain. The lessening of suffering and reduction of pain is measured as outcomes of nursing intervention in this case which may be rewarding and source of satisfaction for the nurses. Therefore, nurses may be more confident in evaluation of nursing process. The willingness subscale was reported highest among all the measures in current research. The mean score is around good, as low as 33% and as high as 75%. This is reflective that many nurses’ willingness to implement the nursing care process but they were not able to do so. Many factors may contribute as hindrance to implement the nursing process [18].

The analysis of the factors affecting implementation of nursing process unfolds the barriers to implement nursing process. Study

participants in the current research reported that uncooperative patients as a major hindrance to implement nursing care process. This may be attributed to low knowledge and confidence of nurses in the current research. Patients may not feel safe when they sense lack of knowledge and confidence in nurses. As a result, they do not allow a stepwise nursing care process and want the nurses to provide immediate care rather going through the phases of nursing process [21].

Moreover, nurses shared that patients' lack of awareness toward nursing care process serve a barrier. This is possible when patient do not understand the value of nursing process. Therefore, it is imperative for nurses that they educate the patients and their families about the nursing process which in turn facilitate the implementation of nursing process and improve patient outcomes. However, this is also critical that nurses educate themselves first so they educate the patient and families appropriately and with confidence. The higher willingness of the nurses show that they wish to improve and implement the nursing process [18]. The lack of practice in implementation of nursing diagnosis came up a next factor. The low-level confidence may be due to lack of nursing process practice. Nurses generally depend on medical diagnosis and/or patient complains. Therefore, they do not practice nursing diagnosis in general. However, nursing diagnosis is a powerful tool to identify patient problems. This is a first step to solve patient problems. Unidentified patient problems compromise patient care which may contribute to dissatisfaction of patients as well as for nurses [22]. Lack of preparation for nursing process emerged as a next barrier in nursing practice. This seems a main problem in current research which is evident by low knowledge, confidence, and low scores on nursing process. This is supported by nurses' report for lack of in-service training for nursing process. This may be a major contributing factor for low level of knowledge and confidence among nurses to use nursing process. There is role of in-service trainings to improve the knowledge and confidence of nurses by providing opportunities for its implementation [23]. Nurses may also need to self-educate themselves through self-paced, self-directed and online free resources. Following, low satisfaction level hindered nurses to use nursing process in nursing practice. This is also supported in the literature [24]. Nurses also reported that there is lack of time to implement nursing care plans in nursing practice in current research. This is further supported by the fact that nurses experienced the high patient flow in the current research. Lack of nurses and high patient acuity may be a concern for implementing of nursing process. Nurse patient ratio in Pakistan in most healthcare settings is 1:50, whereas recommended is 1:10 ratio [24].

LIMITATIONS AND STRENGTH

Study has few limitations. A study from a single institute limits the generalizability of findings so result may be inferred cautiously. Lastly, self-reported measure may have restricted the nurses to report on phenomenon of interest. Future research should use qualitative and mixed methods approach to investigate about implementation of nursing care plan and their effect

on patient care, patient satisfaction and clinical outcomes. This study has provided useful insights in to the implementation of nursing care plan. Therefore, study have imperative implications for nursing practice and patient care. The findings of this can be used to develop the in-service training program for the nurses. In addition to the nursing process, data was collected and analyzed for nurses' knowledge, confidence, willingness and nurses' view about facilitator and barriers to implement nursing care process in nursing practice. Further follow-up interventional researches to measure the effect of educational program to improve to nurse confidence, knowledge, and willingness to implement the nurse care plans in patient care. Additionally patient outcomes can also be assessed.

CONCLUSION

In conclusion, study findings revealed knowledge, confidence and willingness of the nurses to use nursing care plans and process in their nursing practice. Study provides useful information to nursing and hospital administration. They can provide professional development opportunities to nurses through in-service trainings to improve the knowledge and confidence of nurses to implement nursing process. Nurses also indicated, number of barriers which are at personal and professional level. A comprehensive strategic plan can be used to alleviate the barriers. Future should focus on exploring implementation of nursing process through qualitative and/or mixed methods approaches for comprehensive research investigation.

AUTHORS' CONTRIBUTION

- **Imran Iqbal:** Conceptualized the study, Performed data collection, and Developed manuscript
- **Saima Kouser:** Conceptualized the study, and Contributed to manuscript development.
- **Sadia Samreen:** Performed data collection, and Contributed to manuscript development.
- **Gideon Victor:** Performed data analysis, Intellectual revision and Contributed to manuscript development.

CONFLICT OF INTEREST

Declared none.

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