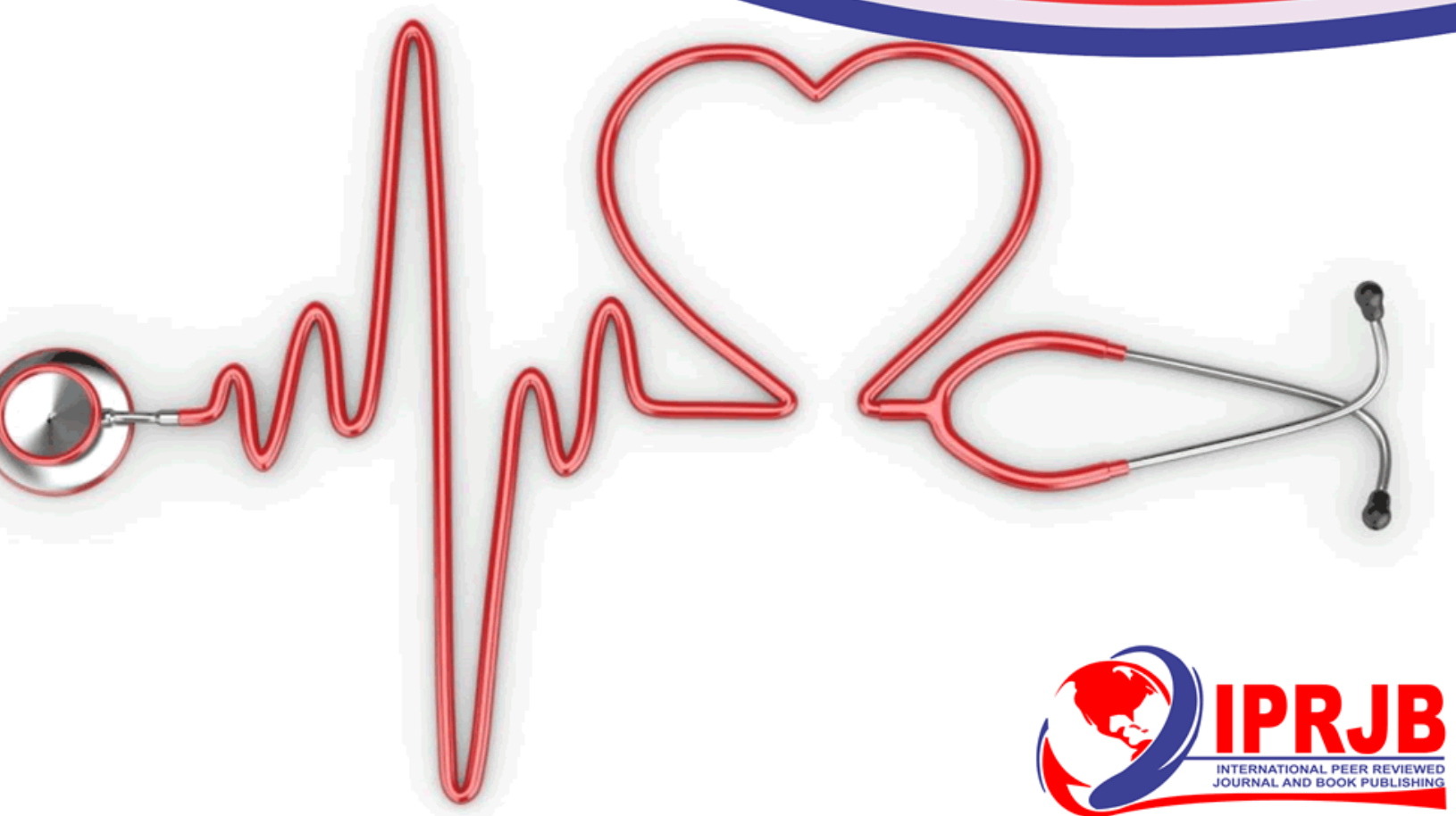


**THE INFLUENCE OF THE NURSES' CHARACTERISTICS AND
THE NURSES' ATTITUDES ON THE IMPLEMENTATION OF
THE NURSING CARE PLAN IN MACHAKOS COUNTY**

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Abstract

Purpose: This descriptive cross-sectional study sought to assess the implementation of the nursing process by nurses in two sub county hospitals in Machakos county, Namely: Kangundo and Kathiani sub county hospitals. The study examined the influence of the nurses' characteristics and the nurses' attitudes on the implementation of the nursing process in the sub County.

Methods: A self-administered questionnaire collected quantitative data, while key informant interviews were used to gather qualitative information. Descriptive statistics and inferential statistics (in particular, the chi-square and Fisher's Exact) were derived from the data.

Results: Sixty-three percent of the nurses (n=45) had drafted a NCP a week prior to the study while 35.7% (n=25) had not. Seventy-five percent of them (n=41) had implemented the NCP. The nurses who developed the nursing care plan frequently ended up implementing it (100%, n=43) compared to those who did not (23.1%, n=3; fisher's Exact Test P=0.000). Similarly, among the nurses who did not implement the nursing process, 76.9% (N=10) of them felt that NCP is time consuming. This difference was significant at 5% confidence level (LR=8.717, df=2, p=0.013). Although statistical analysis revealed no significant association between nursing process implementation and socio-demographic factors (p>0.05), qualitative findings suggested that the newly qualified nurses are more familiar with the nursing process than their older colleagues.

Unique contribution to theory, practice and policy: study recommends that nursing administration cultivate positive mentality among nurses towards the nursing process; particularly focusing on making nurses understand that the tool should be consistently used among all patients and that it significantly improves patient care.

Key words: *Personal Characteristics, Attitudinal Factors, Implementation Of The Nursing Care Plan (NCP).*

INTRODUCTION

Nursing care plan is the documentation of the nursing process [10]. Nursing process is a scientific technique of clinical judgment that nurses use in patient care [5]. It is a five-step process, which includes assessment, diagnosis, planning, implementation and evaluation [8]. This study is imbedded in Ida Jean Orlando's Deliberative Nursing Process Theory. In her attempt to understand the purpose of nursing, Orlando came to the conclusion that nurses help patients meet their unmet needs [7]. In this theory, patient's verbal and no-verbal cues require vigilant and regular assessment to identify priority needs; which subsequently guide nurses' interventions. These needs keep changing. The Theory identifies five stages: assessment, diagnosis, planning, implementation, and evaluation. In the assessment stage, the nurse completes a holistic assessment of the patient's needs. This is done without taking the reason for the encounter into consideration. The nurse uses a nursing framework to collect both subjective and objective data about the patient. The diagnosis stage uses the nurse's clinical judgment about health problems. The diagnosis can then be confirmed using links to defining characteristics, related factors, and risk factors found in the patient's assessment. The planning stage addresses each of the problems identified in the diagnosis. Each problem is given a specific goal or outcome, and each goal or outcome is given nursing interventions to help achieve the goal. By the end of this stage, the nurse will have a nursing care plan

Most countries have adopted nursing process. The focus is in improving the quality of care through encouraging staff on implementation of evidence-based practice [14]. However, many barriers and challenges in implementation of the same abound. An investigation done by Agyeman-Yeboah et al. [3] identifies the lack of understanding of the nursing process, absence of the care plans in the wards, staff shortage and limited time as some of the reasons for the failure to use the nursing process in patient care in Ghana.

Use of the nursing process in Kenya continues to be low despite being part of the nursing curriculum. According to Nyatichi [12], non-usage of the of the nursing process in care of patients in public hospitals contributes to diminished quality of health care in these facilities. Consequently, Nyatichi recommended that this need to be effected across various clinical settings, especially since nurses account for close to 51.5% health- care workforce in Kenya [4].

Nursing process is a structured way of providing high quality client centered care. events when used well [10]. Further, when fully implemented, it can trigger generation of knowledge to inform practice. To realize the value of evidence-based practice on patient outcomes, tools such as nursing care plans must always be utilized by nurses in clinical areas. Globally, nursing care plan has been adopted by different countries to improve quality of care. However, a significant portion of nurses are not routinely employing this process in their care of patients due to circumstances that vary from place to place[4]. In Kenya, Implementation of nursing process still remains low despite being part of nursing curriculum. Nyatich[12] observes that failure to exploit this crucial nursing care tool compromises the quality of health care in Kenyan public hospitals. Yet, the status in machakos sub county hospitals and factors influencing the implementation in the sub county remains unknown. This descriptive cross-sectional study sought to assess the implementation of the nursing process by nurses in Kangundo and Kathiani sub county hospitals in Machakos County. The study examined the influence of the nurses' characteristics and the nurses' attitudes on the implementation of the nursing process in the County.

Specific objectives

- 1) To examine the influence of the nurses' characteristics on the implementation of the nursing process in the two sub county hospitals.
- 2) To assess the influence of the nurses' attitudes on the implementation of the nursing process in the two sub county hospitals.

METHODS AND MATERIALS

Study design, study population and sampling procedures

A descriptive cross-sectional design which employed both quantitative and qualitative research methods approaches was used. The cross-sectional survey targeted 79 nurses working in two sub-county Hospitals in Machakos county; while the qualitative interviews involved the nursing officer in-charges of the two facilities as the key informants. A census study of 79 nurses from purposively selected departments that implement nursing process was conducted. These are the pediatric ward, newborn unit, Male medical and surgical unit, and the female medical and surgical wards. In addition, the patients had an average stay of 72 hours in the targeted units, giving the nurses an opportunity to implement nursing care plan. Also interviews were of the two purposively selected key informant in the two facilities were conducted.

Data collection and analysis

Approvals for the study were obtained from Kenya Methodists University Scientific and Ethics Review committee (KeMU SERC); the National Commission for Science, Technology, and Innovation (NACOSTI); and the Machakos County department of health. Further, written informed voluntary consent was obtained from the respondents after reading the cover letter accompanying the questionnaires. During interviews, the respondents verbally also gave consents.

Data was collected using two separate tools; namely, self-administered questionnaires and key informant interviews. The self-administered questionnaire was constructed from information gathered during literature review. Attempts were made to ensure that the items in the questionnaire address the study objectives. The questionnaire assessed the demographic and determinants of the nursing process utilization at Kangundo and Kathiani sub-county referral hospitals. The attitudinal factors were assessed using statements that were measured on a five-point scale (strongly agree, agree, uncertain, disagree and strongly agree). To gather additional information, the nursing services managers at the two sub county referral hospitals were purposively sampled for the key informant interviews. A key informant interview schedule with a set of questions addressing key thematic areas was used. The information from the key respondents was tape recorded.

Data was collected using self-administered questionnaires and key informant interviews for a period of three weeks from 20th may 2021-4th July 2021. Initially the researcher wanted to survey all the nurses in the said departments. However, only 69 were reached, translating to a response rate of 87.3%.

Quantitative data was analyzed using SPSS IBM version 23. Descriptive statistics (such as percentages, proportions and data frequencies) were computed. Further, Chi square was computed to determine any association between the independent and dependent variables of

interest. The findings were significant at $p < .05$. The data was presented in figures, tables and in prose. The qualitative data was listened to, transcribed and thematically analyzed. The reports were presented in narrative forms.

RESULTS

Implementation of the nursing plan

As shown in Figure 4.1, 64.3% (n=45) of the nurses had developed the nursing care plan in the week preceding the interview while 35.7% (n=25) had not. Asked if they implemented the nursing care plan developed, 54 nurses chose to respond to this question; with 75.9% (n=41) of them reporting to have implemented a care plan in the week prior the day of data collection.

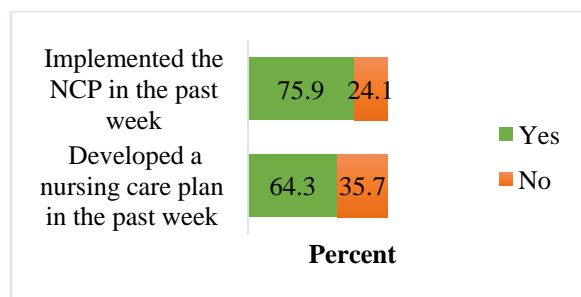


Figure 1 Percentage nurses who developed or implemented nursing Care Plan

When the Nursing services managers (NSM) as key informants (KIs) were interviewed, there was consensus that notwithstanding attempts to implement the nursing process, there remained some gaps. The ideal NCP steps were rarely followed; with most nurses said to cut-corners in the NCP. Their assessment data and nursing diagnosis were not exhaustively captured. As one nurse typically stated:

'most nurses will do the procedures then come and fill the (NCP) form afterwards'.

Though most nurses document in the care plans, a number of them feel that nursing care plan is a waste of time since it has no impact on the patients' outcome. The documentation is an attempt to comply with the expectations of the administration.

'Even now you could find some nurses doing it (NCP) because it is a requirement, maybe from the administration, but not for the benefit of the patient. We can say they(nurses) are practicing it but not 100%. Some have the attitude that it is time wastage'. KI-2

Personal characteristics of the respondents

The personal characteristics of the nurses are as shown in Table 4.1. In general, 82.6% (n=57) of the participants are below 50 years; with those in the age bracket of 31-40 years dominating this cohort. Only 17.4% (n=12) nurses were aged above 50 years. Most nurses, 53.6% (n=37) have attained diploma in nursing; with those holding certificate and bachelor's degree in nursing almost tying at 18.8% (n=13) and 17.4% (n=12) respectively. With regards to working experience, the nurses who participated in this study 79.7% (n=55) had accumulated more than six years' working experience.

Age and experience emerged as key themes during key informants' (KIs') interviews. There was consensus that recent nursing graduates have better understanding of the nursing process. For example, one KI typically stated that the nurses who qualified when the nursing process was not mandatory in their exams 'are slow to pick it up'. On experience, the KIs felt that the 'the more a person practices, the better they become in the implementation.' However, one key informant felt that most of the recent nursing graduates perform poorly on implementation of NCP plan when compared to their 'older counterparts'. The respondent retorted that noted that 'the [younger] nurse say it (NCP) is a wastage of time...'

Attitudinal factors

The nurses were asked to respond to a number of statement with the aim of ascertaining their attitudes (See figure 4.2). Most of the respondents suggested that that the nursing process ought to be adhered to always (76.9%, n=50) and 50%(n=33) found the nursing process time consuming. However, opinion was almost evenly divided on whether all the circumstances warrant adhering to the steps of the nursing process. For instance, 42.4%(n=28) of the nurses felt that all the steps of the nursing process must be followed at all times; compared with 39.4%(n=26) who thought otherwise. The nurses who felt that implementing the nursing process in their facilities was impractical were fewer (18.2%, n=12) than those who thought it was possible (71.2%, n=47). Asked if the nursing process improves patient care, 75.4%(n=47) responded in the affirmative while 13.8% (n=12) thought the NCP does not change the patient outcome. Whereas 25.8%(n=17) of the participants felt the NCP should be revised to make it less tedious and time consuming, the rest (74.3%, n=49) were either uncertain or out-rightly opposed to the idea of revising the care plan.

Table 1 Personal characteristics of the nurses

Characteristics	Frequency	Percentage	
Age bracket	21-30 Years	16	23.2
	31-40 years	23	33.3
	41-50 years	18	26.1
	Above 50 years	12	17.4
	Total	69	100.0
Highest qualification	Enrolled Nurse	13	18.8
	Diploma	37	53.6
	Higher Diploma	6	8.7
	Bachelor's Degree	12	17.4
	Master's Degree	1	1.4
	Total	69	100.0
Working experience	1-5 Years	14	20.3
	6-10 Years	25	36.2
	11-15 Years	8	11.6
	More than 15Years	22	31.9
	Total	69	100.0

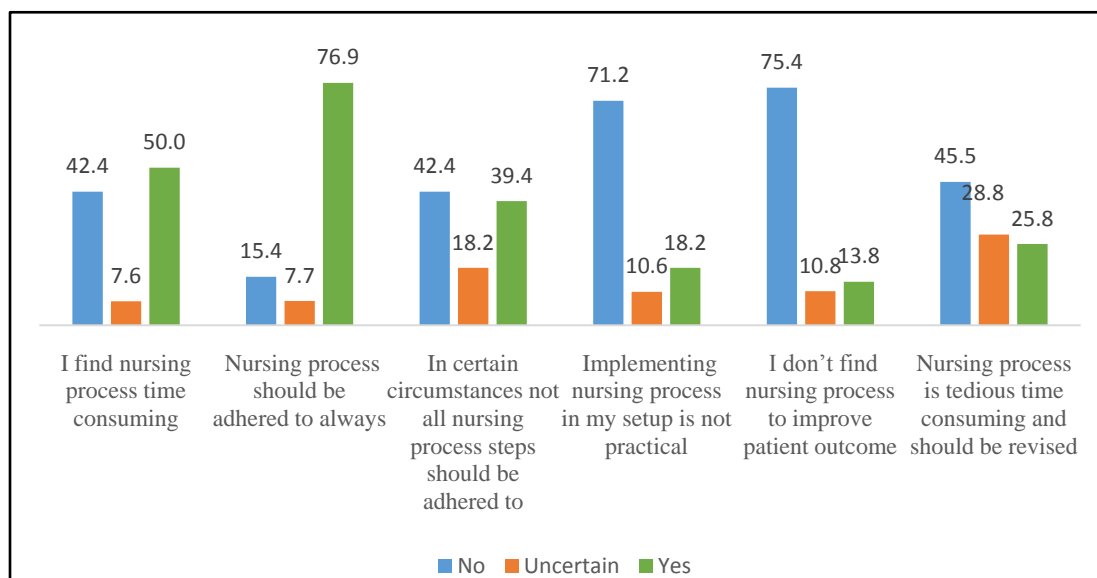


Figure 1 what the respondents feel about the nursing process

Association between various factors and the implementation of the nursing care plan

Personal characteristics and the implementation of the nursing process.

Chi-square statistics were used to examine association between the different socio-demographic categorical variables (Table 4.2) and the implementation of the NP. At 5% significance level, there was no significant relationship between nursing process implementation and age of the nurses (LR=3.197, df=3, p=0.362), highest professional qualification (LR=1.453, df=4, p=0.729) or working experience (LR=0.458, df=3, p=0.857). However, on qualitative data analysis there was a suggestion that most of the recent nursing graduates perform poorly on implementation of NCP plan when compared to their 'older counterparts'.

Table 2 Cross tabulation of personal characteristics and implemented nursing process

Variable		Implemented the nursing process in the past 1 week				N	Significant $p \leq 0.05$	at
		Yes		No				
		n	%	n	%			
Age bracket	21-30 Years	11	27.5	2	15.4	13	LR=3.197 df=3 p=0.362	
	31-40 Years	12	30	6	46.2	18		
	41-50 Years	8	20	4	30.8	12		
	>50 Years	9	22.5	1	7.7	10		
	n	40	100	13	100	53		
Highest qualification	EN	7	17.5	2	15.4	9	LR=1.453 df=4 p=0.729	
	Diploma	20	50	7	53.8	27		
	Higher Diploma	3	7.5	2	15.4	5		
	Bachelor's Degree	9	22.5	2	15.4	11		
	Master's Degree	1	2.5	0	0	1		
	n	40	100	13	100	53		
Working experience	1-5 Years	8	20	2	15.4	10	LR=0.458 df=3 p=0.857	
	6-10 Years	16	40	6	46.2	22		
	11-15 Years	5	12.5	1	7.7	6		
	>15 Years	11	27.5	4	30.8	15		
	Total	40	100	13	100	53		

Association between Attitudinal factors and implementation NCP.

Chi-square tests to evaluate the link between the various attitudinal variables and the implementation of the nursing process were computed at 5% confidence level. The findings are shown in Table 4.3. Statistical analysis revealed that nurses who developed the nursing care plan frequently ended up implementing it (100%, n=43) compared to those who did not (23.1%, n=3; fisher's Exact Test $P=0.000$). Similarly, among the nurses who did not implement the nursing process, 76.9% (N=10) of them felt that NCP is time consuming, and 15.4% (N=2) felt otherwise. This difference was significant at 5% confidence level (LR=8.717, df=2, $p=0.013$). Further, among the nurses who felt that implementing all the steps of the nursing process is not practical, 42.1% (n=16) ended up implementing it, while 30.8% (n=4) did not. This difference was insignificant ($\chi^2=0.929$, df=2, $p=0.628$). Likewise, 86.8% (33) the nurses who implemented the nursing process thought it was practical in their set-up, compared to the 10.5% (n=40) who implemented it despite feeling it is impractical. This relationship was also not significant (LR=5.665, df=2, $p=0.059$). Moreover, there was no association between the implementation of the nursing process and the perceived impact of nursing process on patients' outcome (LR=1.696, df=2, $p=0.395$). There was also no association between nursing process implementation and the feeling that the NCP should be revised to make it less tedious and time consuming (LR=2.098, df=2, $p=0.350$).

Table 3 Cross tabulation of attitudinal characteristics and implemented nursing process

Variable	Implemented the nursing process in the past 1 week						<i>Significant at</i> <i>p</i> ≤0.05
	Yes		No		N		
	n	%	n	%			
Developed a nursing care plan in the past week	Yes	41	100	3	23.1	44	Fisher's Exact Test P=0.000
	No	0	0	10	76.9	10	
	Total	41	100	13	100	54	
I find nursing process time consuming	No	21	55.3	2	15.4	23	LR=8.717
	Uncertain	0	0	1	7.7	1	df=2
	Yes	17	44.7	10	76.9	27	p=0.013
	Total	38	100	13	100	41	
Nursing process should be adhered to always	No	6	16.2	1	7.7	7	LR=3.261
	Uncertain	0	0	1	7.7	1	df=2
	Yes	31	83.8	11	84.6	42	p=0.196
	Total	37	100	13	100	50	
In certain circumstances not all nursing process steps should be adhered to	No	17	44.7	6	46.2	23	$\chi^2=0.929$
	Uncertain	5	13.2	3	23.2	8	df=2
	Yes	16	42.1	4	30.8	20	p=0.628
	Total	38	100	13	100	51	
Implementing nursing process in my setup is not practical	No	33	86.8	7	40	40	LR=5.665
	Uncertain	1	2.6	1	7.7	2	df=2
	Yes	4	10.5	5	38.5	9	p=0.059
	Total	38	100	13	100	51	
I don't find nursing process to improve patient outcome	No	32	84.2	8	66.7	40	LR=1.696
	Uncertain	2	5.3	1	8.3	3	df=2
	Yes	4	10.5	3	25	7	p=0.395
	Total	38	100	12	100	50	
Nursing process is tedious time consuming and should be revised	No	21	55.3	5	38.5	26	LR=2.098
	Uncertain	10	26.3	3	23.1	13	df=2
	Yes	7	18.4	5	38.5	12	p=0.350
	Total	38	100	13	100	51	

Discussion

This study examined the implementation of nursing process in two sub-county hospitals in Machakos County in Kenya. The research focused on the influence of socio-demographic, and attitudinal factors on the implementation of the nursing process.

On developing and implementing the nursing care plan, it was observed that most nurses develop the care plans but few of them execute the care as planned. However, this study shows that the nurses who develop the nursing care plans are disproportionately more likely to implement it compared to those who do not. In addition, it was observed that the ideal steps of the NCP are rarely followed; with most nurses failing to exhaustively capture assessment data and nursing diagnosis. Further, some nurses reportedly carried out procedures and planned for them retrospectively.

The influence of socio-demographic characteristic of nurses on the implementation of the nursing process was examined qualitatively and quantitatively. Although statistical analysis revealed no significant relationship between nursing process implementation and socio-demographic variables (say age of the nurses, highest professional qualification, or working experience) qualitative data analysis suggested that the newly qualified nurses are more familiar with the nursing process than their older colleagues. Despite being knowledgeable, most of the recent graduates allegedly perform poorly on implementation of NP when compared to their 'older counterparts'. This difference was attributed to experience and attitude. Younger nurses view the nursing process as an unnecessary wastage of time. Similarly, Mason and Wagner[11] contended that older nurses are less knowledgeable on NP compared to their younger counterparts because the NP was not part of the curriculum when they trained. Further, a research by Abebe et al.[1] observed that nurses who had some understanding on the nursing process were more than 8 times likely to use it, as compared to those who were unaccustomed to the process.

Though academic qualification was not a significant determinant in the implementation of the NP in this enquiry, studies [1] have revealed that the level of qualification has a major influence on implementation of nursing process among nurses. Lack of confidence and knowledge about nursing process were to blame among junior nurses were to blame[1]. Suttom [15] in a survey done in Ghana showed that nurses with certificate in their training were less likely to utilize nursing care plan compared to nurses with bachelor's degree certificates.

In this study, Key Informants suggested that the more experienced a nurse is the better they become in the implementation of the NCP. Previous studies have reported mixed findings on the association between work experience and use of the nursing care plans. Literature [3] has revealed a strong link between years of practice and utilization of nursing process. Nurses who had been in practice longer were using the nursing process in managing patients compared to nurses with relatively fewer years of experience. Elsewhere, Paramonczyk [13] observed that recently recruited nurses rarely used nursing care plans. This variation has been attributed to confidence. A survey by Paramonczyk disclosed more experienced nurses had high confidence levels regarding ability to write nursing care plan correctly and comfortably as compared to their newly employed counterparts. Grant and Bonte-Eley [9] have reached similar conclusions.

Although the above literature suggests that older nurses frequently implement nursing process, contrary findings do exist. Coverston [6] noted that nurses who are younger in the profession are amenable to utilize the nursing process compared to their older counterparts. Coverston[6] explains this observation in the context of change in attitude as the nurses age in the profession.

The influence of various attitudinal factors on nursing process implementation was also examined. Even though most nurses felt that the NP significantly impacts patient outcomes and should be adhered to, there are those who argued that implementing all the steps was not possible in some circumstances. Some nurses frequently cited staff shortage or claimed that the nursing process is a wastage of time that does not impact patient outcomes. In such cases, the nurses reportedly execute the procedures but retrospectively develop the care plans so as comply with the professional and institutional requirements. Some of these findings are consistent with past studies. From previous research findings, it was established that negative attitude significantly affects the implementation of the nursing process [2]. These include the feeling that developing nursing care plan is a wastage of time that could be used to provide patient care [2,6]. A survey at Kenyatta National Hospital, revealed that most nurses had negative attitude towards utilization of nursing process as majority of the respondents mentioned the large number of patients, they deal with makes it difficult to write care plans for all patients [16]. Likewise, according to Festa [8]. the nurses who do not implement the NCP feel it is time consuming developing care plans. Consequently, some nurses suggest that care plans be written in critically ill patients that require close monitoring [8]. Moreover, some nurses have formed the impression that nursing care plans are used as tools for blame game rather than finding gaps in patient care [13].

The assertion by majority of the nurses that nursing care plans impacts patient outcomes and should be adhered to at all times resonates with some studies. A previous survey in Machakos referral hospital showed that most of the nurses working in maternity department had optimistic outlook towards application of nursing care plan [16]. Wagoro noted that majority of the respondents acknowledged that the care plans facilitate quality care.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

On developing and implementing the nursing care plan, it was observed that most nurses develop the care plans but few of them execute the care as planned. The nurses who develop the nursing care plan are disproportionately more likely to implement it compared to those who do not. In addition, ideal steps of the NCP are rarely followed; with most nurses failing to exhaustively capture assessment data and nursing diagnosis. Further, some nurses seemingly plan for care has already been effected.

Although statistical analysis revealed no significant association between nursing process implementation and socio-demographic factors (of age of the nurses, highest professional qualification, or working experience) qualitative findings suggested that the newly qualified nurses are more familiar with the nursing process than their older colleagues. Despite being knowledgeable, younger nurses view the nursing process as an unnecessary wastage of time.

The influence of various attitudinal factors on nursing process implementation was examined. Even though most nurses felt that the NCP significantly impacts patient outcomes and should be

adhered to at all times, there are those who argued against this proposition. Some nurses frequently cited staff shortage or claimed that the nursing process is a wastage of time that does not impact patient outcomes.

Conclusions

In conclusion, NP is somewhat being implemented. However, there is inconsistency in following the steps. Additionally, more than a third of the respondents are not implementing NCP at all. Further, most of the time it is implemented for critically ill patients and often the care plans are drawn after the procedures have been executed. There was no major link between social-demographics and the implementation of the nursing process. However, despite being relatively more knowledgeable than their seniors on NP, the younger nurses are said to be poor implementers of the nursing process. This was attributed to poor attitude. Although most nurses felt the NCP is useful, a sizeable proportion of the nursing population who see it as a waste of time exists. When they do, it is often to avert reprisals by the administration.

Recommendations

Arising from the above conclusions, the study recommends that nursing administration cultivate positive mentality among nurses towards the nursing process; particularly focusing on making nurses understand that the tool should be consistently used among all patients and that it significantly improves patient care. This study was conducted in two sub-county hospitals of Machakos County. Thus the findings may not be generalized to county and private hospitals countrywide. The authors declare that there are no conflict of interest regarding the publication of this paper. This study was entirely financed by the primary investigator. The SPSS data that support the findings of this study are available from Kiarie, [H.M] upon request.

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