



KNOWLEDGE OF NURSES ON NATIONAL PRESSURE ULCER PREVENTION GUIDELINES IN EMBU KENYA

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Abstract: Knowledge of guidelines can have a bearing on implementation of pressure ulcer prevention strategies. This was a descriptive cross-sectional study conducted among 200 nurses working at Embu Level 5 Teaching and Referral Hospital. The aim of the study was to assess the knowledge levels and determine the factors influencing the knowledge levels. The sample size was 145 calculated using Yamane 1967 formula where 118 nurses participated in the study. This represented a response rate of 81%. Respondents were selected using two methods i.e. stratified random sampling coupled with systematic random sampling. The duty rotas in the wards acted as the sampling frame and every second nurse on the duty rota who consented, participated in the study. Permission to collect data was obtained from the County Director of Health and the Chief Executive Officer of the hospital. The participants also signed an informed consent form before filling questionnaires. Data was collected using a self administered questionnaire which was developed based on the Nursing Council of Kenya (NCK) guidelines which were found in the NCK procedure manual. Data was coded and entered into SPSS version 21 software for analysis. Chi squared test was used to test for any significance in association between the variables. Majority (85.6%) of the nurses were found to have adequate knowledge of the NCK pressure ulcer prevention guidelines, while 14.4% had inadequate knowledge. The mean score was 87.5%, range of 55-100% and SD=8.9. Qualification, attendance of Continuous Professional Development (CPD) sessions, and years of experience significantly affected knowledge levels at $p < 0.05$.

Keywords: Pressure ulcers; National prevention guidelines; Knowledge; Nurses; Nursing Council of Kenya;

I. INTRODUCTION

Higher levels of knowledge about decubitus ulcer prevention amongst nurse practitioners, greatly impacts the quality of clinical nursing care, and greatly reduces the duration of time spent in the hospital by the patients [1] In a study done to determine nurses' knowledge, nurses were found to have adequate knowledge on pressure ulcer prevention based on Pieper knowledge questionnaire.

The nurses were not sure whether use of the scale was any better compared to their clinical judgment [2] An Oman study showed that nurses' level of knowledge on prevention of decubitus ulcer was unsatisfactory. This was accounted by the fact that their curriculum during training never addressed the area of pressure ulcers and therefore they graduated without adequate preparation. Their clinical area objectives also did not reflect any emphasis on pressure sores and the encounter with them was purely by chance. The qualified nurses seemed to believe that age was the main predisposing factor to pressure area ulceration and that pressure ulcers are a preserve for the aged [3]

In a descriptive cross-sectional study done in Nigeria, nurses were found to have inadequate knowledge in pressure ulcer risk assessment and prevention. This was due to their educational backgrounds as most of them had a diploma in nursing. The author noted that the kind of training they received in school was not tailored towards current guidelines and information about pressure ulcer risk assessment and prevention. Moreover, majority of them (71.7%) did not have a post registration training and capacity building in pressure ulcer prevention [4] In another study done in Uganda, nurses had some knowledge about risk factors. However, majority did not identify nutritional status, hypoxemia, anaemia and neurological diseases as risk factors. The study concluded that nurses generally had inadequate knowledge on pressure ulcer risk assessment and prevention [5]. In yet another study conducted in India, nurses generally had good rather than excellent knowledge on pressure ulcer prevention. Nurses working in specialized units performed better than their counterparts in general wards. There were discrepancies between nurses knowledge and prevention of pressure ulcers with a theory practice gap that seemed to impact patient care negatively [6] In a study done to determine nurses' perceived barriers in pressure ulcer prevention, 8.4% cited lack of knowledge on risk assessment while 5% were unable to assess completely. The study concluded that the nurses knowledge was inadequate and it was not related to their years of experience, education level or their ages [7] Another study revealed that knowledge on risk assessment was found to have a significant correlation with compliance to pressure ulcer prevention guidelines [8] In a study done in Ethiopia, Nurses were found to have adequate knowledge on pressure ulcer prevention. The study found out that the nurses with inadequate knowledge were 0.29 times less likely to prevent pressure ulcers as required. Knowledge level on pressure ulcer prevention was therefore found to have a significant relationship with the practice of pressure ulcer prevention [9]

In a study which was done in Saudi Arabia among 38 nurses who were selected from the unit of critical care, renal and department of medical and surgical nursing, it was revealed that, the nurses' knowledge was generally good. Eighty one point six (81.6%) of the nurses had knowledge that the patients needed turning after every two hours and 57.9% knew that the head of the bed shouldn't be elevated above 20 degrees. Most of the nurses also had knowledge that the linen must always be kept dry, and that special diet must be given if patients with nutritional risk are identified. The study further revealed that, a positive correlation existed between the years of work experience and knowledge of keeping the linen dry, while a negative correlation was found between years of work experience, and knowledge on provision of special diet after identifying a patient with a nutritional risk factor [10]

In yet another study conducted in Ethiopia, nurses' knowledge regarding prevention of pressure ulcers was just slightly above average. Nurses performed well in questions concerning the risk factors for pressure ulcer development, the importance of capacity building through continuous professional development and the role of good nutrition in order to maintain the skin integrity. However, they performed poorly in the questions regarding risk assessment of patients, the care of skin and how to manage mechanical loads [11]

The knowledge which they possessed about prevention depended upon their educational levels, continuous education on the area of pressure ulcer, and the years of work experience. Nurses who had degree level of their academic qualification for instance, had 2.4 times more chances to possess a better knowledge in comparison to their counterparts who had diploma qualification. Conversely, nurses with work experience of more than ten years had 4.8 times more chance to have better knowledge than those who had worked for less than that. Finally, those with formal training on prevention of decubitus ulcers, had 4.1 times more chance of having better knowledge, in comparison to those without [11]

In a Kenyan national referral hospital, nurses possessed little knowledge as far as pressure ulcer risk assessment were concerned [12] The nurses performed particularly poorly with regard of the use of massage as a preventive measure and the use of doughnuts. The study further revealed relationship between the ages of participants, their history of participating in decubitus ulcers related research, their levels of academic qualification, and capacity building in the area of pressure ulcers with the level of knowledge in risk assessment. The knowledge was based on an international knowledge based test that ranks scores of 90% and above as adequate. From the study findings, no single nurse practitioner was able to attain this score and therefore the researcher concluded that their knowledge was inadequate [12].

Majority of the nurses i.e. 85.6% (101) had adequate knowledge of the NCK pressure ulcer prevention guidelines, while 14.6% (17) had inadequate knowledge. This agreed with a study done in Saudi Arabia where nurses were found to have adequate knowledge on international guidelines. The study contradicted the findings of [3] which found nurses knowledge to be unsatisfactory. In this study, 89.8% of the respondents knew that patients must be turned and similarly in this Saudi Arabian study, Nurses scored 81.6% on this item [10]. The mean score was 87.4%, range 55-100% and standard deviation was 8.9. The best known items in the guidelines were documentation of the procedure and indication of the turned position, both of which had 100% (118) correct response, while the least known item was rubbing of the pressure area with a towel, which had 58.5% (69) correct response. The most known risk factor for decubitus ulcer development was inability of the patient to turn self, which had 99.2% (117) correct response, while the least known risk factor was obesity, with 66.9% (79) correct response. In this study, nurses with degree had the highest mean score on knowledge followed by those with diploma, then certificate and finally those with masters. This agreed in part with the findings of [11] whereby degree holders had better knowledge compared to their diploma counterparts.

Further analysis demonstrated that qualification affected knowledge on use of water repellent creams ($X^2=3.909$, $df=1$, $P=0.048$, $RR=1.21$), use of pressure relieving devices ($X^2=3.989$, $df=1$, $P=0.047$, $RR=1.13$) and consultation for the high risk patients ($X^2=6.658$, $df=1$, $P=0.01$, $RR=1.25$) whereby, those with degree and above were likely to respond correctly to these knowledge items.

Table 3: Influence of qualification on knowledge

Knowledge item	Mean score		Significance level
	Degree & above	Diploma & below	
Use of water repellent creams	91.18%	76.19%	$X^2=3.098$, $P=0.048$, $df=1$, $RR=1.19$
Consultation for high risk patients	97.06%	77.38%	$X^2=6.658$, $P=0.01$, $df=1$, $RR=1.25$
Use of pressure relieve devices	97.06%	85.71%	$X^2=3.939$, $P=0.047$, $df=1$, $RR=1.13$

Years of experience also affected knowledge on use of soap for massage ($X^2=8.794$, $df=1$, $P=0.03$, $RR=1.44$) whereby those who had worked for more than two years were likely to respond correctly. Years of experience also affected knowledge on use of validated risk assessment tools ($X^2=4.847$, $df=1$, $P=0.028$, $RR=1.14$) and consultation for the high risk patients ($X^2=8.041$, $df=1$, $P=0.05$, $RR=1.28$) whereby those with less than two years experience were likely to respond correctly.

Table: Influence of experience on knowledge

Knowledge item	Mean score		Significance level
	≤2 years	>2 years	
Use of soap for massage	57.97%	83.67%	$X^2=8.794$, $P=0.03$, $df=1$, $RR=1.44$
Use of risk assessment tool	95.65%	83.67%	$X^2=4.847$, $P=0.028$, $df=1$, $RR=1.14$
Consultation for high risk patients	91.3%	71.43%	$X^2=8.041$, $P=0.05$, $df=1$, $RR=1.28$

Previous attendance of CPD also affected knowledge of unconsciousness as a risk factor for pressure ulcer development ($X^2=9.608$, $df=1$, $P=0.12$, $RR=1.20$) and inability of the patients to turn themselves ($X^2=4.052$, $df=1$, $P=0.44$, $RR=1.08$) whereby, those who had not attended CPD were likely to respond correctly to these knowledge items.

Table: Influence of CPD attendance on knowledge

Knowledge item	Mean score		Significance level
	Without CPD	With CPD	
Unconsciousness is a risk factor	98.04%	81.25%	$X^2=9.608$, $P=0.012$, $df=1$, $RR=1.20$
Inability of a patient to turn himself is a risk factor	100%	93.75%	$X^2=4.052$, $P=0.044$, $df=1$, $RR=1.08$

Qualification, length of time worked in department and previous attendance of CPD on pressure ulcer prevention affected knowledge ($P<0.05$). These findings agreed with those of [11] who found a significant association with education, formal training on the prevention of decubitus ulcers and length of work experience.

V. CONCLUSIONS

Qualification, experience and previous attendance of CPD were significant predictors of knowledge level. Attendance of CPD did not improve knowledge on the national guidelines. Nurses had adequate knowledge of the NCK guidelines.

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