Nurses' Knowledge and Practice of Pressure Ulcer Prevention Strategies

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Abstract

Pressure ulcers have been described as one of the most costly and physically debilitating complications since the 20th century. Nurses, in particular, play a major role in the prevention and treatment of pressure ulcers. Preventive strategies such as frequent repositioning of bedridden patients are carried out by nurses. Hence, this study seeks to assess the knowledge and practices of nurses in preventing pressure ulcers.A descriptive, cross-sectional study was conducted at the University of Ilorin Teaching Hospital (UITH), Ilorin, Kwara State.

With a response rate of 97.5%, 117 nurses participated in this study.The mean age of the respondents was 42.5 years. Majority of the respondents were Christians (55.6%), married (82.1%) and Yoruba (94%).Majority of the nurses (n=115, 98.3%) had good knowledge about pressure ulcers; and 83.8%indicated a high level of practice of pressure ulcer prevention strategies. However, majority of the nurses (n=106, 90.6%) got the question, 'Bony prominences should be massaged every two hours?' wrong.This study has shown that nurses have a good level of knowledge and practice of pressure ulcer prevention; there is evidence of adoption of traditional methods of preventing pressure ulcers, rather than evidenced-based strategies.It is important that nurses keep up-to-date with current international guideline. Also, there is a need to develop a national guideline that is evidenced-based and culturally appropriate for this country.

Keywords: Pressure ulcer prevention, nurses, knowledge, practice

Introduction

Pressure ulcers, also known as pressure sores, pressure injuries, decubitus ulcers and bed sores are localized damage to the skin and/or underlying tissue that usually occur over a bony prominence as a result of pressure, or pressure in combination with shear and/or friction.Pressure ulcersare common, painful, and a costly health care problem which leads to increased morbidity, mortality, and longer periods of hospitalization.Nowadays, pressure ulcers are recognized worldwide as one of the five most common causes of harm to patients and preventable patient safety problem. According to the Agency for Healthcare Research and Quality, 2.5 million cases of pressure ulcers are recorded annually in the United States. A hospital-based study in Spain revealed an incidence rate of 16%.A study in a Nigerian hospital over a period of 3 months reported an incidence rate of 13.84%.Nurhusein, Fisseha, Senafikish and Yohannes emphasized that they are the common conditions among patients hospitalized in acute and chronic care facilities.Pressure ulcers have been described as one of the most costly and physically debilitating complications since the 20th century.

There are numerous risk factors associated with the development of pressure ulcers. It commonly occurs in elderly; people who are severely ill and bedridden; those with neurological disorders particularly spinal cord injuries and those with impaired mobility. Poor nutrition, obesity and poor posture have also been identified as risk factors.Pressure ulcers impose a significant burden on patients and reduce their quality of life and their carers.A systematic review of 31 studies found that pressure ulcers significantly limits many aspects of an individual's wellbeing including general health and physical, social, financial and psychological quality of life.Pressure ulcer causes significant pain and discomfort; lengthen the period of hospitalization; and reduces the quality of life of the patient, carers and his/her family members.Also, it can lead to secondary infections such as osteomyletis and reduced mental and physical well-being.A systematic review assessing the costs of prevention and treatment of pressure ulcers showed that it cost between €2.65 and €87.57 per patient daily to prevent; and €1.71 and €470.49 per patient daily to treat pressure ulcers.

Pressure ulcer is increasingly described as an indicator of the quality of care provided by health care organizations. Healthcare professionals endeavor to reduce the occurrence of pressure ulcers by identifying high risk patients, and using various preventive methods such as the use of pressure-relieving equipments. However, McInnes indicated that healthcare professionals also face challenges in providing holistic, patient-centered care in the

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assessment and prevention of pressure ulcers.Nurses, in particular, play a major role in the prevention and treatment of pressure ulcers. Preventive strategies such as frequent repositioning of bedridden patients are carried out by nurses. Hence, it is important that nurses are knowledgeable about its prevention and treatment.

Studies have been conducted to assess the knowledge of pressure ulcer among nurses. A study reported a mean knowledge score of 79.45% among nurses on pressure ulcer prevention. Another study conducted in Ahmadu Bello University Teaching Hospital, Nigeria demonstrated that 96% of the participating nurses knew about pressure ulcer changes and 82% applied their knowledge in the stage-based treatment of pressure ulcer. In contrast, a study in Ogun State, reported that 70.3% of 111 nurses had a low knowledge on the prevention of pressure ulcers. They noted that pressure ulcer prevention strategies in Nigeria were based on tradition, rather than evidenced-based research. The inconsistence in research findings prompted the authors to assess the knowledge and practices of nurses in preventing pressure ulcers. This study will contribute to the existing studies; and provide concrete evidence on the nurses' knowledge and practices on pressure ulcer treatment and prevention. This can inform the nursing curriculum in various institutions; and prompt hospitals to conduct seminars on pressure ulcers prevention and treatment.

Materials and Methods

This is a cross-sectional descriptive survey which was conducted at the University of Ilorin Teaching Hospital (UITH), Ilorin, Kwara State. The study participants were registered nurses in all the wards in the hospitals; except the obstetric and paediatric wards. The data collection instrument was a structured questionnaire developed by the authors. Few changes were made to the questionnaire to suit the objectives of this study. The questionnaire was evaluated by a team of nursing researchers for face and content validity and the necessary corrections were made based on their recommendations. The reliability of the questionnaire has been established through a pilot study in another health institution. A few changes were made to the questionnaire. The findings of the pilot study were not included in this article. The 34-item questionnaire consists of 4 sections. Section A is on the respondents' socio-demographic data. Section B assessed the knowledge of nurses on pressure ulcers. Section C evaluated nurses' practices regarding pressure ulcer prevention. Section D sought to determine the factors that influence the nurses' practices of pressure ulcer prevention strategies. The questionnaire is written in English. The respondents were approached at their various wards. One of the authors waited for the nurses to complete and submit their questionnaire. Other nurses requested to submit at a later time; so the author went back at the appointed time and collected the filled questionnaire.

The respondents were purposively selected using the following criteria. The inclusion criteria are: all nurses working in medical and surgical wards, stroke unit and gynecology ward. The exclusion criteria were: nurses working in the paediatric and obstetric wards, and emergency units; nurses holding administrative positions (non-clinical). Data collection occurred from9th to 23rd August, 2017. Participation in the study was strictly voluntary. To ensure confidentiality, no personal information was requested from the participants, and they were informed to avoid writing any form of identification on the questionnaires.The data was analysed using Statistical Product Service Solution (SPSS) version. Data were presented in frequency tables and the hypotheses were tested with chi-square. P values less than/equal to 0.05 were considered significant. In assessing the nurses' knowledge, scores below 50% of the maximum score was deemed as low; and scores above 50% were deemed high.

Results

Of the 120 questionnaires distributed, 117 were returned and analyzed; that is a response rate of 97.5%. The mean age of the respondents was 42.5 with standard deviation of 8.21. Majority of the respondents were Christians, married and Yoruba. The mean years of practice were 15.2 years with a standard deviation of 8.06. See Table 1 for the socio-demographic data of the respondents.

All the nurses were aware of pressure ulcers. Only 1.7% had poor knowledge; 115 (98.3%) had good knowledge about pressure ulcers.Majority of the nurses (n=106, 90.6%) got the question, 'Bony prominences should be massaged every two hours?' wrong. Their source of information was mainly their school (n=85, 72.6%); 12% (n=14) acquired it from work; another 12% (n=14) got theirs from seminars; only 3.4% (n=4) acquired theirs through mass media. See Table 2 for the knowledge of nurses on pressure ulcer prevention.

Figure 1 shows the nurses' level of practice regarding pressure ulcer prevention strategies.Majority of the participants (n=98, 83.8%) demonstrated a high level of practice.Figure 2 shows the measures nurses suggested would improve their adherence to evidenced-based pressure ulcer prevention strategies. Majority of the nurses (25%, n= 30) suggested that the hospital should organize training sessions on pressure ulcer prevention and treatment.

Majority of the nurses indicated three barriers militating against their practice of good pressure ulcer prevention strategies; they are: inadequate staffing (n=108, 92.3%), unavailability of the necessary

Table 1: Socio-demographic data

Variable	Responses	Frequency (%)	Minimum/ Maximum	Mean/STD Deviation
Age (years)	20- 29	12 (10.3)	Minimum=22	X =42.3
	30-39	20 (17.0)	Maximum=57	SD=8.214
	40-49	54 (46.2)		
	50-59	31 (26.5)		
Religion	Christianity	65 (55.6)		
	Islam	52 (44.4)		
Marital Status	Single	17 (14.5)		
	Married	96 (82.1)		
	Widowed	4 (3.4)		
Ethnicity	Yoruba	110 (94.0)		
	Igbo	5 (4.3)		
	Hausa	2 (1.7)		
Qualification	RN	24 (20.5)		
	RM	4 (3.4)		
	BNSc	29 (24.8)		
	RN/RM	60 (51.3)		
Years of service	1-5 years	16 (13.7)		
	6-10 years	29 (24.8)	Minimum=1	X =15.2
	11-15 years	20 (17.1)	Maximum=29	SD=8.069
	16-20 years	17 (14.5)		
	21 years and above	35 (29.9)		

Table 2: Knowledge of nurses' on pressure ulcer prevention

Variable	Responses	Frequency (%)
Pressure ulcers are localized damage to the skin that usually occur over a bony prominence as a result of pressure, or pressure in combination with friction?	Yes	117 (100.0)
	No	0 (0.0)
Pressure ulcer can be transmitted from one patient to another?	Yes	2 (1.7)
	No	115 (98.3)
Pressure ulcer is also known as decubitus ulcer?	Yes	110 (94.0)
	No	3 (2.6)
	I don't know	4 (3.4)
Pressure ulcersare classified into stages?	Yes	109 (93.2)
	No	2 (1.7)
	I don't know	6 (5.1)
Pressure ulcers develop only in patients that are confined bed?	Yes	111 (94.9)
	No	6 (5.1)
Treatment of pressure areas should be applied to all patients irrespective of their disease condition?	Yes	96 (82.1)
	No	21 (17.9)
Bony prominences should be massaged every two hours?	Yes	106 (90.6)
	No	8 (6.8)
	I don't know	3 (2.6)
A blister on the heel is nothing to worry about?	Yes	4 (3.4)
	No	113 (96.6)
Soiled linen predisposes patients to developing pressure ulcers.	Yes	113 (96.6)
	No	4 (3.4)

equipments (n=78, 66.7%) and time constraints due to heavy workload (n=66, 56.4%)

Two null hypotheses were proposed and tested in this study. Hypothesis 1: There is no significant relationship between knowledge on pressure ulcer and their practice. This hypothesis was rejected because the relationship was deemed significant with a p-value of 0.001(X^2=10.495). Hypothesis 2: There is no significant relationship between years in service and their practices regarding pressure ulcer prevention.

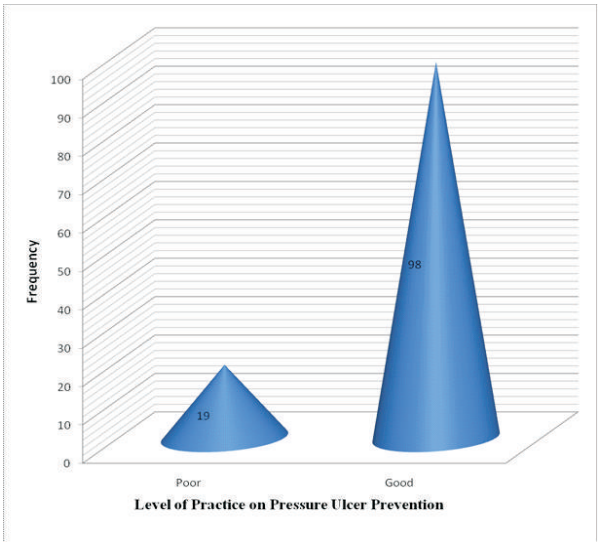

Figure 1: Nurses' level of practice of pressure ulcer prevention

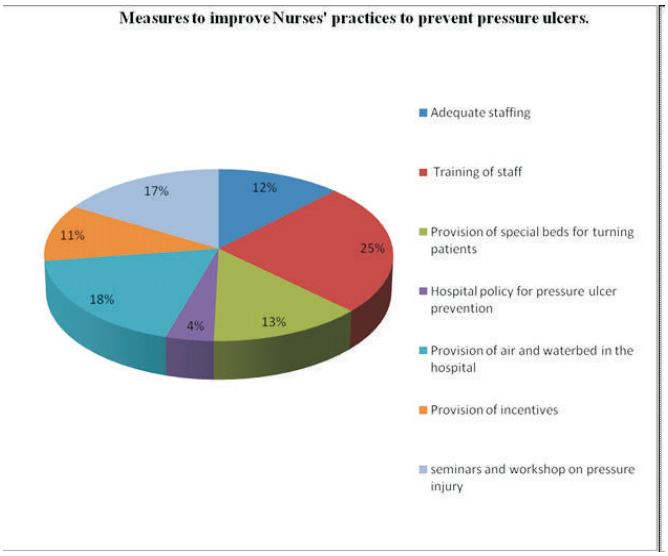

Figure 2: Measures to improve nurses' practice of pressure ulcer prevention strategies

This null hypothesis was rejected becausethe relationship was deemed significant with a p-value of 0.001 (X^2=55.196).

Discussion

The aim of this study is to determine the level of knowledge on pressure ulcer prevention; and the extent they implement their knowledge in practice. This study recorded a high level of knowledge about pressure ulcer. This is similar to other findings conducted in Ethopiaand Brazil. Our finding is lower than the percentages reported in a study conducted in Jordan. In contrast, studies conducted in Nigeria reported low levels of knowledge.This contrast may be because our study tested the nurses' knowledge on basic aspects of pressure ulcers; whilst the other Nigerian studies assess both the basic and advanced aspects of pressure ulcer prevention. The basic knowledge on pressure ulcers was assessed to determine whether the nurses had the basic understanding to prevent pressure ulcers. Regardless, the high knowledge reported in this study is apositive indication. This high percentage may be because the majority of the participants have spent more than 5 years in practice. The mean years in service are 15.2 years.

This study recorded a high percentage of nurses had a good level of practice of pressure ulcer prevention strategies. Similarly, a high percentage was recorded in study conducted in Ethopia. More so, there was a significant relationship between the years of service and practice of pressure ulcer strategies. Evidently, the experience has played a role in the implementation of prevention strategies. However, it appears nurses have poor knowledge on the current recommendations on the prevention of pressure ulcers. Nurses still believe that massaging pressure areas help prevent pressure ulcers. Current evidence has shown that massaging of pressure areas does not prevent pressure ulcers; rather it can cause shear stresses to the vulnerable skin and further increase the patient's risk of developing a pressure ulcer.Nurses need to keep up-to-date on current guidelines on the prevention and treatment of pressure ulcers. This can be achieved through seminars, and the provision of posters and leaflets.

The lack of implementation of current evidenced-based recommendations,as shown in this study,has serious implications for the prevalence of pressure ulcers in a Nigerian hospital. As Ilesanmi et al., rightly suggested, most interventions used in Nigeria for pressure ulcer prevention are discouraged in almost all international guidelines; this suggests the need for a review of the practice in Nigeria. The continuous use of traditional methods in the prevention of pressure ulcer can be attributed to the lack of a national guideline. There is a need to develop a national guideline that is evidenced-based and culturally appropriate for this country.

The major perceived barriers mitigating the nurses' practice of good pressure ulcer prevention strategies include: inadequate staff, unavailability of necessary equipments and time constraints due to heavy workload. Similar barriers were reported in studies conducted in Jordanand Ethopia. The presence of barriers limits the implementation of evidenced-based practices in the clinical settings. To achieve optimal care, it is important that these barriers are addressed. The challenge of staff levels affects every aspect of care. It is imperative that interventions and models are developed to efficiently manage the available human resources while providing optimal care. The challenge of inadequate funding arises when issues about unavailability of the necessary equipments are raised. Hospital administration must prioritize the

prevention of pressure ulcers, because it is often viewed as a sign of poor healthcare services.More so, it puts a burden on both the physical and mental well-being of the patients, caregivers and their families.

This study has been able to highlight the educational needs of nurses regarding pressure ulcer prevention; however, it has its limitations. This study was conducted in a single hospital; hence caution must be taken when generalizing its findings to other settings.

Conclusion and Recommendations

This study has shown that nurses have a good level of knowledge and practice of pressure ulcer prevention strategies. Also, there is evidence of adoption of traditional methods of preventing pressure ulcers, rather than evidenced-based strategies. There is a need to develop a national guideline that is evidenced-based and culturally appropriate for this country. Also, the nursing curriculum must be reviewed to accommodate current international guidelines on the prevention and treatment of pressure ulcers. Future studies should consider conducting a multi-centre using a standardized questionnaire such as Pressure Ulcer Knowledge Test, in assessing the knowledge of nurses on pressure ulcer prevention and treatment.

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