



ORIGINAL RESEARCH PAPER

Health Science

KNOWLEDGE AND PRACTICE OF INFECTION CONTROL DURING WOUND DRESSING AMONG NURSES WORKING AT A TERTIARY HEALTH CARE INSTITUTION IN NIGERIA

KEY WORDS: knowledge, practice, nurses, wound dressing

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ABSTRACT

Wound Infection is a health challenge occurring in many of our health care institutions. This study assessed nurses' knowledge and skills of infection control during wound dressing. The relationship between their knowledge and skills of infection control was also ascertained. A descriptive design and purposive sampling technique was employed to select one hundred and fifty-four (18 males, 136 females) participants for the study. An interviewer's administered questionnaire and an observational checklist were used as research instruments. Results showed that about 90% of respondents had good knowledge of infection control. However, 65% exhibited good skills of infection control during wound dressing. Inferential statistical analysis (Chi-square) indicated significant association between nurses' knowledge of infection control and their skills during wound dressing ($\chi^2 = 10.902, p = 0.010$). Further research is required to identify effective strategies to enhance nurses' knowledge and practice regarding wound dressing management.

INTRODUCTION

Nurses, as health care professionals are involved in giving bedside care round-the-clock and are in a unique position to promote wound healing and prevent wound infection through their every day practices for the health care consumers. One of such practices is wound dressing, a standardized procedure and a core function of nurses in any health care facility. In many settings, the standardized procedure may give all registered nurses within the health care facility the right to implement the specified functions or may name specific registered nurses who have specialized skills to implement that function (Nourah et al, 2021).

To be able to do these proficiently, they must have up-to-date knowledge, skills, attitudes and competence. The individual competencies of nurses to engage in proper wound care and management in order to prevent wound infection (e.g., inflammation and gangrene) vary between nurses and across categories of nursing professionals and are based on knowledge, skills, attitudes, critical analysis and decision making which are enhanced over time by experience and education. It is expected that individual nurses will perform only those aspects of wound dressing protocols and management for which they have received appropriate education and experience and that which they will seek appropriate consultation in instances where the client's care needs surpass their ability to act independently. This study is aimed at assessing nurses' knowledge and skills of infection control during wound dressing at a tertiary health care institution in Nigeria.

MATERIALS AND METHODS

Study Design, Sampling Method And Sample Size

A descriptive quantitative design was used. A purposive sampling technique was used to select twelve wards from Delta State University Teaching Hospital (DELSUTH). The wards are surgical, medical, orthopaedic, accident and emergency, paediatric, neonatal intensive care unit, intensive care unit, dialysis, labour ward, theatre, child emergency, maternity and gynaecology wards. The sample size was determined using Yamane's formula for quantitative study: $n_y = N / (1 + Ne^2)$. Delta State University Teaching Hospital has a total population of 251 nurses. From each of the 12 wards, all available registered staff nurses were recruited (a sample size of 154 nurses) to be the sources of quantitative data. This sample size for quantitative study was complemented by additional qualitative study of 20% (30) of the sample drawn

from the former. This category for qualitative study were randomly selected and observed to assess their skills in wound dressing.

Study Procedures

The instrument (questionnaire) was pilot tested by administering it to 10 respondents. Cronbach's reliability was computed to ensure internal consistency of the instrument. An alpha value of 0.77, $P < .05$ was obtained. Five (5) respondents were observed using the checklist and the Cronbach reliability was computed. The alpha of .98, $P < .05$ was obtained, which was an indication of good reliability. An interviewer's administered questionnaire was used for data collection. The questionnaire had two sections. The first section asked questions on respondents' socio-demographic data and other background information. The second section elicited information about nurses' knowledge of infection control during wound dressing. An observational checklist was used to assess their skills in wound dressing. The participants gave written informed consent before data collection. The questionnaire was distributed to selected nurses on their wards, and was collected on the same day – after completion.

Data Analysis

Data were processed and analysed using the statistical package for Social Sciences (SPSS) version 25.0 for Windows 8 and summary data was presented using descriptive statistical methods. For inferential statistical analysis, Chi-square (χ^2) test was conducted to establish the association between their knowledge and skills of infection control during wound dressing.

Ethical Considerations

The Delta State University Teaching Hospital Health Research Ethics Committee granted ethical approval for this study (ref. no. DELSUTH/HREC/2021/036/0545).

RESULTS

Table 1 presents the frequency distribution of respondents' knowledge of infection control. Analysis of scores of the respondents on the knowledge of infection control was determined using the 50th percentile. Scores equal or greater than the 50th percentile were considered good knowledge and scores less than the 50th percentile were considered poor knowledge. The result on the evaluation of nurses' knowledge of infection control showed that 90% (138) had good

knowledge while 10 % (16) had poor knowledge as shown in table 1 below.

Table 1 Frequency Distribution Of Respondents' Knowledge Of Infection Control

Knowledge	Frequency (N=154)	Percent (%)
Good knowledge	138	90
Poor knowledge	16	10
Total	154	100

Table 2 presents the frequency distribution of respondents' observed skills during wound dressing. Analysis of scores of the respondents on the skills during wound dressing was determined using the 50th percentile. Scores equal or greater than the 50th percentile were considered good skill and scores less than the 50th percentile were considered poor skill. The result on assessment of nurses' skills during wound dressing showed that 65% (19) had good skills while 35% (11) had poor skills as shown in table 2 below.

Table 2 Frequency Distribution Of Respondents' Skills During Wound Dressing

Skills	Frequency (N=30)	Percent (%)
Good skills	19	65
Poor skills	11	35
Total	30	100

Table 3 presents the result of the association between the respondents' knowledge of infection control and their skills during wound dressing which was found statistically significant $\chi^2 = 10.902$, $df = 1$, and p -value 0.010 which is less than 0.05.

Table 3 Results Of Chi Square (χ^2) Analysis Of Association Between Nurses' Knowledge Of Infection Control And Their Skills During Wound Dressing

Knowledge of infection control	Skills during wound dressing		χ^2	Df	P-value
	Good Skills	Poor Skills			
Good knowledge	79 (65.3%)	42 (34.7%)	10.902	1	0.010
Poor knowledge	11 (33.3%)	22 (66.7%)			

$p < 0.05$ is considered statistically significant

DISCUSSION

The level of knowledge of infection control as well as the nurses' skills during wound dressing is crucial in the type of wound dressing techniques used for wound management. In general, respondents' knowledge of infection control was good (90%). In previous studies, it was reported that nurses were knowledgeable about the principles of wound dressing techniques and also had good knowledge of the health effects and complications owing to poor wound management (Mwakanyamale et al, 2019). In yet another study, nurses had improved knowledge and practice of wound care and management after an educational program (Serag et al, 2021). On the contrary, Berhe and Nourah in their works revealed that nurses' knowledge regarding wound care was low and insufficient. However, other studies have also shown that nurses' Post Operative Wound Infection (POWI) prevention practices were poor due to poor knowledge, poor attitude, years of experience and lack of training on infection control and prevention during wound dressing (Kebede et al, 2021).

In our study, the nurses' exhibited good skills of infection control during wound dressing. Similarly, Berhe and Serag in their works also indicated that nurses practice of wound care management was good. On the contrary, nurses exhibited poor skills in terms of some principles of wound dressing techniques (Mwakanyamale et al, 2019) and showed poor skills when performing standard wound dressing protocols (Nourah et al; Serag et al).

CONCLUSION

In general, the nurses had good knowledge of infection control and also exhibited good skills during wound dressing. Further research is required to identify effective strategies to enhance nurses' knowledge and practice regarding wound dressing management.

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