

An Observational Study on Wound Dressing Performance among Nurses in Adult Units

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Abstract:

Introduction: Wound care is a nursing duty that requires excellent skills and knowledge to prevent massive complications, such as infection, gangrene and amputation or, in severe cases, even death.

Aim: The aim of this study is to explore existing wound care practices among nurses and to measure the effectiveness of a wound management course on their performance.

Methodology: A cross-sectional observational study was conducted on nurses in adult general care and critical care settings using a modified checklist for pre, intra and post wound dressing.

Result: The sample included 41 nurses. Of these, 20 (48.8%) had attended a wound management course. The mean score for nurses' adherence to correct wound management techniques was 77.6%. Compliance was lower in the pre-phase, confirming the dressing order: n= 27 (66.7%), conducting client verification n= 29 (71.8%), and explaining the procedures to the client N= 24 (59%). Compliance was higher during the performance phase (n = 36; 90%). However, the least compliance was shown in the post-phase in the area of educating patients and family by only 33.3% (n = 13).The chi-square test disclosed a significant difference in dressing done with completely aseptic techniques among participants who attended the wound management course (p = 0.02).

Conclusion: The educational course on wound management is beneficial to nurses; however, an advanced educational course that focuses on holistic care is recommended. In addition, wound care guidelines should be modified to include pre-, intra- and post-dressing practices. Further research is suggested to study in depth the correlation between attitude and performance.

Keywords: Wound Dressing, Educational Programmes, Critical Care, Wound Care

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I. Background

Wound care is a nursing duty that requires excellent skills and knowledge to prevent massive complications, such as infection, gangrene and amputation or, in severe cases, even death [1]. To prevent such complications, it is necessary to study existing practices and measure the difference between these and, ideally, to lean more towards evidence-based practices for wound care [2]. As an academic centre that caters for patients with wounds that require complex care, King Abdulaziz University Hospital (KAUH) assigned a wound care nurse recently to follow the progress in wound healing practice and to apply best wound care. The Nursing Education Unit at the studied hospital, also designed a wound management programme for nurses who work in adult units—such as surgical, medical and critical care units—and who are directly exposed to wounds. This programme includes five general topics, including workshops to bridge the gap between knowledge and skills (Figure 1).At present, there is a guideline regarding aseptic technique in wound care and there is a taskforce focusing on pressure ulcers. Generally, the mandated staff/patient ratio at KAUH is 1: 6, whereas in critical care it is 1:1 or 1:2. All these factors may or may not affect performance.

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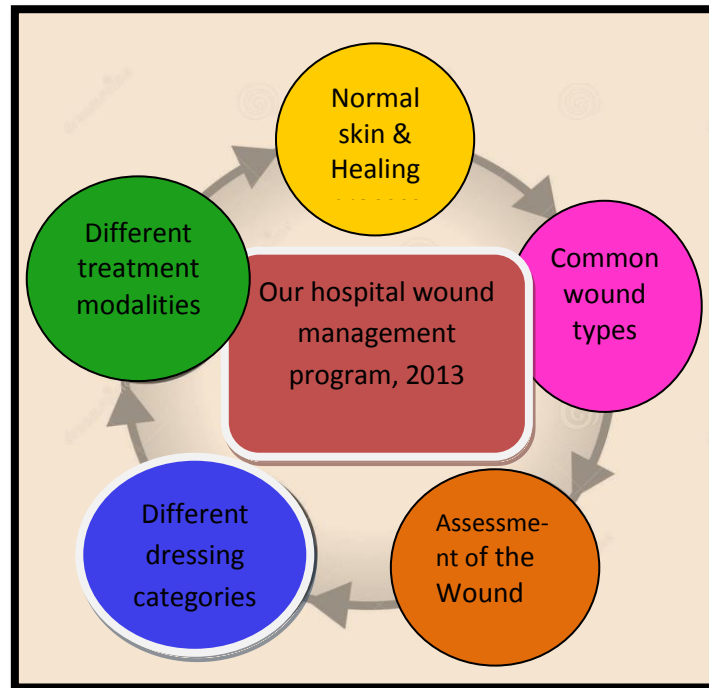


Figure 1: wound Management Program applied for Nurses

II. Research Objectives

This research intends to explore nurses' wound dressing performance. It also aims to evaluate the effectiveness of the wound management course and its impact on nurses' performance.

III. Literature Review

In the United States, almost six million patients suffer from chronic open sores that could become either infected or gangrenous and, in some cases, require amputation [3]. In addition, patients can suffer from wounds that may affect their appearance, confidence, or financial status if the wound requires long-term treatment[4]. An advanced nursing role in providing holistic wound care and dressing implementation is necessary to confront these challenges [5]. In addition, it is important to implement evidence-based standards of practice[4]. Studies have proven that constantly changing equipment alters work demands and multitasking and work stress affect nursing performance has been continuous problem in patient care. [6]. Limited nursing experience and knowledge in making good decisions also affect the performance of wound care [7]. These entire obstacles could have a harmful influence on patient safety and the quality of care. To manage this, frequent assessment should be made of all nurses [8] However, measuring levels of competency in nursing practice through theoretical knowledge cannot be sufficient unless there is a good assessment tool available that ensures a high quality of care is provided [9]

IV. Research Methodology

Study Design

A comparative cross-sectional observational study was conducted among nurses performing wound dressing. This method allowed the investigators to observe other behaviours in a systematic way without interfering with normal behaviour. This study was conducted at teaching hospital among nurses working in adult general and critical care units and who perform wound dressings. Sampling was purposely categorized into nurses who attended the wound management course (n = 20) and those who did not attend this course (n = 19).

Data collection method

Upon hospital administration approval, researchers visited the selected units and the nurses were informed of the study. Consent was obtained from all patients before establishing the procedure to allow researchers to attend. The instrument was adapted from the teaching curriculum in nursing by Wilkinson and Van Leuven [10]. A few modifications were made to meet both the organizational policy and the objectives of this study. An additional tool on demographic data was added in the questionnaire. The instrument comprised two parts: (1) questions that elicit respondents' biographic data and (2) a checklist on wound dressing performance for before, during and after the procedure.

Data analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS IBM, New York, US), version 21. Pearson correlation, analysis of variance (ANOVA) and t-tests were used to compare group means; alpha was set at 0.05 to compare both observation groups in this study.

Findings:

A total of 41 nurses were recruited. Two samples that had more than 20% of unanswered questions were excluded from analysis.

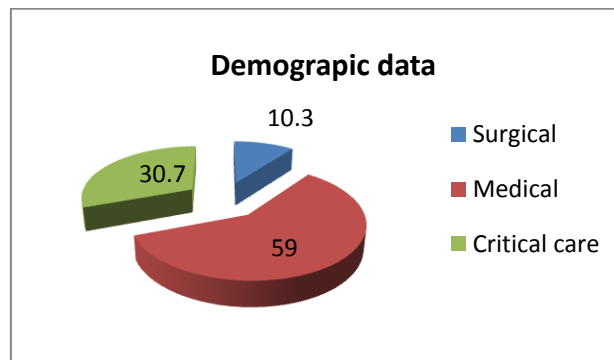


Chart 1: Participants’ ward allocations by percent.

The surveyed participants worked at the following wards: surgical ward, 4 (10.3%); medical ward 23 (59%); and intensive care unit (ICU), 12 (30.7%) as shown in Chart 1. The nurses’ experience ranged from 2-24 years.

	Frequency	Percent
N	19	48.7
Y	20	51.3
TOTAL	39	100

Table 1: Proportion of Nurses Who Attended the Wound Management Course

(Abbreviations: N, nurses who did not attend the course; Y, nurses who attended the course).

Approximately 52% of the participants attended the wound management course (Table 1). Participants dealt with various types of wounds, including pressure ulcers (n = 35; 89.7%) and surgical wounds (n = 3; 7.7%). The patients’ wound conditions were categorized as clean (n=15; 38.5%), infected (n = 17; 43.6%), with exudates (n = 3; 7.7 %), dry (n = 2; 5.1%) or wounds with cavities (n = 2; 5.1%). These results are displayed in Chart 2.

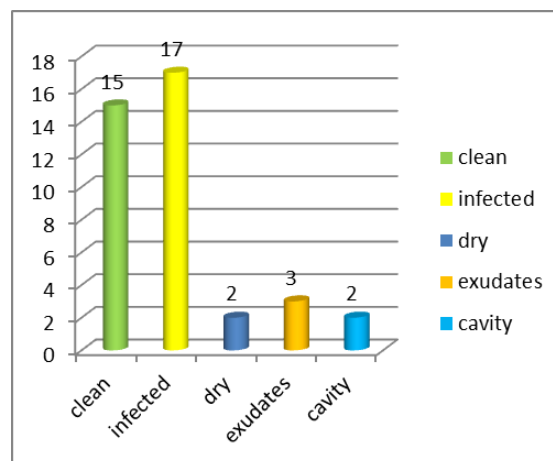


Chart 2: Participants’ description of patients’ wound conditions.

Nurses' wound dressing performance was observed in three different phases: pre, during and post dressing.

- **Pre-phase:**

This phase highlighted participants' lower compliance in confirming the dressing order (66.7%), conducting client verification (71.8%) and explaining the procedures to the client (59%).

- **Intra-phase:**

It was shown that compliance in this phase was above 90% in each of the steps.

	N	Minimum	Maximum	Mean	Standard Deviation
Total percent	39	28.0	92.0	77.6	13.9

Table 2: Mean score for participants' adherence to correct wound management technique.

- **Post-phase:**

Only 13 (33.3%) of participants educated the patients and their family on how to deal with wounds correctly. A chi-square test showed that a significantly higher proportion of participants who attended the wound management course used an aseptic technique in wound dressing compared with those who did not attend the course ($p = 0.02$).

In table 2 the results display that the nurses' mean score for adherence to correct wound management technique was 77.6% demonstrates the moderate level of knowledge and skills among the nurses.

V. Discussion

This research mainly focused on the clinical efficacy of registered nurses' (RNs) performance regarding ideal dressing implementation that hastens wound healing. It involved three domains—knowledge, skills and attitude—based on a dressing performance checklist observing the pre-, intra-, and post-dressing application.

Overall, it can be inferred that this sample's knowledge and skills on wound assessment and management are within an acceptable range; however, there are areas where participants exhibited low compliance and that need special attention and more analysis.

1. Conducting client verification (71.8 %)

Wound care is similar to any procedure that demonstrates risk for possible error and client verification is the best method to avoid such mistakes and thereby cause harm to patients[10]. According to the International Patient Safety Goals of the Joint Commission International, conducting proper client verification is of paramount importance, along with hospital standards of care, to ensure the correct procedure is performed on the right patient [11]. In this study, nurses showed low compliance to client identification, which could be primarily due to familiarity with the patient, frequent provision of care to same patient, workload, and lack of the time. There could be also a possibility that identifying the same patient each time seems to help the critical care staff become familiar with patients. Critical care nurses showed the highest non-compliance in client verification. This may due to the 1:1 ratio or the familiarity of care provided to the same patient. Constant emphasis to the correct system and frequent training for the staff can be the best solution to overcome low compliance in client verification.

2. Confirming dressing order (66.7%)

In the nursing scope of practice, nurses are required to confirm the physician's order before carrying out any action or procedure to patients and thereby ensure patient safety [12]. Nonetheless, in this study, it was revealed that unless it is an acute wound, doctors do not prescribe any wound dressing order. In addition, some nurses were not keen to obtain an updated written order. Many studies claimed that nurses tended to follow hospital protocols [13]. These authors further reported that in the case of pressure sores, nurses gave low priority to wound care and in executing doctors' orders. As patients' advocates, nurses are responsible of providing and maintaining optimal care to their patients, including executing orders issue by the treating physician[14], which can be done through confirming the latest order and, thus, minimizing risk to their patients.

3. Explaining the procedure to the client (59%)

Describing the procedure prior to action is one of the patient's rights. It gives patients the sense of autonomy and encourages them to participate and understand their health issues as well as ways to manage their condition [14]. Nurses in general units' demonstrated better compliance compared with those in critical care units. Regardless of the patient's condition (e.g., conscious or intubated and sedated), nurses should reiterate the importance of respecting the patient as a person by involving them at any actions by not forgetting the very fundamentals of nursing practice [15]

4. Patient education (33.3%)

Patient and family education play a vital role in professional nursing practice [16]. However, some factors impede this role, such as workload [17] or language barriers [18]. To overcome this issue, resources such as brochures should be provided [19] as well as encouragement to speak up and actively participate in their care [20]. Therefore, the wound management nurse plays an important role in the hospital [21]

5- Other Findings; Ensuring competency by education

Studies have affirmed that good nursing programmes and frequent education play a significant role in the provision of high-quality care and patient safety [22]. A significant difference in the dressing technique and adherence to aseptic technique was found between nurses who attended the wound management course and those who did not participate in the course ($p=0.02$). Another observation was that the course participants were more organized during the preparatory phase compared with other phases. Nurses gathered all the necessary equipment prior to the procedure. Actually, preparation of the equipment prior to commencing a dressing streamlines the process and increases the ability to maintain asepsis. In addition, attendees of the wound management course avoided unnecessary or prolonged exposure of the wounds to maintain ambient wound temperature, which minimised the risk of contamination; in addition, they exhibited strict adherence to aseptic technique. Furthermore, when dealing with multiple wounds on the same patient, course participants showed better understanding of wound care principles by dressing clean wounds before contaminated wounds, and they took all necessary steps to avoid contamination and cross-contamination. All these observations support the essentials of continuous wound management education. In general, the holistic approach was compromised by most of the nurse participants in conducting wound assessment and management.

VI. Recommendations:

Based on the results of this study, the discussion and the literature, the following recommendations are suggested:

Management:

- a) The current policy and guidelines on wound care in the hospital need to be expanded and reviewed based on evidence. Further, these guidelines should focus on the patient as a whole and not only on the wound.
- b) The administration should motivate nurses and allow them to update their knowledge by giving them extra time for self-learning.
- c) Mandate a staff nurse & patient ratio to minimize the workload and allow nurses to concentrate more on wound dressing procedures.
- d) Activate a multi-disciplinary wound care committee to facilitate collaboration between dieticians, physiotherapists and physicians.

Education:

- a) Although nurses have a fundamental knowledge regarding wound care practices, an educational course should be maintained in the matter of reviewing and highlighting main points, such as assessing the skin, monitoring the wound healing process and managing the wound. This requires minimizing the duration of the course. For example, instead of a full day course, organizers could schedule a revision course of three-hour duration.
- b) An advanced course is necessary to upgrade nurses' knowledge and skills regarding ethics in wound care practice, psychosocial perspectives and infection control principles.
- c) Encourage ward-based education through demonstrations and workshops rather than lectures only. This will help close the gap between theory and practice in wound care performance.
- d) The checklist of competencies should be updated based on the standard of care practice and not only dressing implementation. This should be reported to the education unit and a developmental plan should be established for nurses who demonstrate low adherence.
- e) Simulation based training can be utilized as one method of teaching in this program.

Auditing and Mentoring:

Monitoring the aseptic technique practice of wound dressing

- a) Regular and frequent audits should be maintained regarding nurses' wound care practices to ensure a high quality of care and patient safety.
- b) Infection control should be practiced and intensive monitoring of dressings should be implemented by both nurses and physicians to ensure nurses adhere to an aseptic dressing technique.

Research:

Further large-scale research, including other disciplines, should be conducted to validate these findings.

VII. Conclusion

Overall, nurses' low adherence to good wound care practice can lead to severe problems that affect patients' morbidity and mortality and affect their length of hospitalization. A higher quality of care can be achieved if RNs apply ideal wound dressing practices. This will, in turn, augment patient safety. To achieve the best implementation, current guidelines should be modified and an advanced educational course developed that focuses on holistic care. Further research is recommended also to study in depth the correlation between attitude and performance. By implementing best-practice wound care, improved patient safety and a higher quality of care will be achieved. This will involve a formal educational programme.

Ethical Consideration

Permission to conduct this study was obtained from the Research Ethics Committee at King Abdulaziz University, Jeddah, Saudi Arabia. All the ward managers were informed for their cooperation and support. The participants (patients and nurses) were given a brief explanation regarding the purpose of the study. The study was conducted anonymously and on a voluntary basis and confidentiality was assured.

Research Limitation:

In surgical units, the post-operative dressing is predominantly done by surgeons, assisted by nurses. In this study, we observed nurses as the primary persons performing wound dressing. Thus, we were able to get only limited data from the surgical team within the stipulated period of time

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