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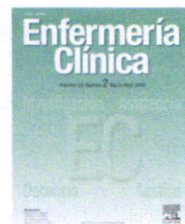
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Nurses' perspectives on diabetic foot ulcer's odor: A qualitative study[☆]



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KEYWORDS

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Abstract

Objective: The objective of this study was to explore nurses' perspectives on diabetic foot ulcer's odor.

Method: A qualitative descriptive was the method of choice as a description of nurses' perspective on diabetic foot ulcer's odor. Data were collected using in-depth interviews with 19 nurses in the hospital and clinic setting in South Sulawesi, Indonesia, and analyzed using a thematic analysis.

Results: Four major themes reported: (1) indicator of DFU status, (2) discomfort with odor, (3) odors management and (4) therapeutic nurses' care in diabetic foot ulcer.

Conclusions: Descriptions of the nurses' perspective on diabetic foot ulcer's odor provide knowledge and insight into an important in nurses' role in caring diabetic foot ulcer.

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Introduction

Diabetic foot ulcers (DFU) is the main complication of diabetes mellitus (DM) globally. It is a significant contribution of morbidity among diabetic patient.¹ The study in

Indonesia found a prevalence rate in a hospital setting 12%,² and a major chronic wound in-home care setting,³ which burden nursing time and patient budget.⁴ Therefore, nurses should assess DFU condition promptly.

Assessment becomes the first corner in DFU treatment. Our Delphi study confirmed that assessment should be part of wound care clinic standard,⁵ and a comprehensive assessment leading to optimal treatment, including in DFU infections.⁶ One of the challenges in DFU assessment is an odor, and it can be a barrier to wound care. Odor in DFU is a significant problem which needs to explore.⁷ However, there is a lack of research up to now, which evaluated odor in DFU, particularly among nurses perspective. Therefore,

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this study explored nurses' perspectives on the odor of DFU patients.

Method

Study design

This was a qualitative descriptive study. By using this design, our focus on descriptive validity from nurses perspective.⁸

Participants

Our participants were nurses who have experience in caring DFU patient, from the hospital and wound care clinic in Makassar, eastern Indonesia. The first author was provided information about the study, informed oral, and written consent given before the interview.

Data collection

In-depth interview was used with a semi-structured questionnaire developed by the research team. The focus of questions included exploring nurses' perspective on odor in DFU patients. Interviews were conducted by the first author in Bahasa during 30–45 min, digitally recorded, and transcripts verbatim. Initial data analysis was undertaken in Bahasa and translated into English and back-translated into Bahasa to ensure the meanings correctly.

Data analysis

Thematic analysis was used to analyze data. Each interview was transcribed then read and reread. Code was identified inductively, refined, and combined as data collection continued and identified themes. To enhance the validity of the analysis, one researcher commenced a thematic analysis of all the transcripts, and the other researcher analyzed a subset. Coded and themes were discussed and agreed.

Ethical consideration

Ethical approval approved from the ethical committee, Faculty Medicine, Hasanuddin University, Makassar-Indonesia.

Result

A total of 19 wound care nurses took part in this study. Eight nurses were worked in a hospital, and four were wound care nurses in private wound clinic. The mean aged of nurses 36.15 (SD ± 10.0 year) and the majority hold bachelor nursing (75%). The overall theme identified was 'indicator of DFU status,' 'comfort disorder to odor,' 'odor management,' and 'therapeutic nurses' care' (Table 1).

Indicator of DFU status

Indicator of DFU was found to be a concern for participant related odor during giving wound care. The theme, indicator of DFU status, was described by nurses in relation to the

Table 1 Themes and subthemes.

Themes	Sub-themes
Indicator of DFU status	The smell of the typical wound The odor is a disease process
Discomfort with odor	Feeling nausea with foot gangrene Foul-smelling
Odors management	Use personal protective equipment Wound care based on the standard procedure Maximize wound washing
Therapeutic nurses' care in DFU	Accept the patient's condition Communication with patient Health education

smell of typical wound and odor as a disease process. Four participants who worked at the hospital reported that DFU had a specific smell.

"...because maybe we are used to it anyway. So I giving wound care, Diabetic foot ulcer has typical odor" (P1).

Most of the nurses from the wound care clinic also expressed that odor is a disease process.

"Based on the smell of the wound, we can predict patients with severe wound infections, the infection has reached the bone. Other than that what foods have been consumed by the patient; for example, he eats a lot of protein, egg white, the wound smells fishy" (P10).

Another nurse in the wound care clinic revealed that odor is an indicator to wound care.

"We as clinical practitioners, we can make odor of wounds is an indication for treatment, so it is considered to smell the wound is the need for wound care" (P11).

Discomfort with odor

Majority of participant expressed feeling discomfort with especially for the first time to caring for DFU. Feeling nausea with foot gangrene, and participants dominantly expressed foul-smelling.

"... as a novice nurse, when first time giving wound care, I feel nauseous, vomiting, and can not stand with the smell" (P3).

Seven participants who worked at hospital and clinic reported feeling uncomfortable with DFU odor. They said that DFU has foul-smelling.

"When we are caring the wound, and the smell is very piercing, automatically we are uncomfortable, disturbed, or we were taking care for other patients, and smell the wounds from other patients, we are automatically also somewhat disturbed by the foul-smelling" (P2).

One participant expressed the smell of the wound feels sticky in her clothes.

"When a caring patient's wound, the wound is very smelly, and I feel the smell is sticky on the shirt, this is very uncomfortable (P6).

Odor management

For the nurses charged with caring for the wound, the task can be an unpleasant one. Those who have cared for such wounds know how difficult this can be. This study revealed that odor management included use personal protective equipment, wound care according to the standard procedure, and maximize wound washing.

Five participants reported what they did to address the odor issue were use personal protective equipment like masks and aprons when doing care about the DFU.

"...it's normal, but we usually use aprons to treat the wound, so it's not too sticky" (P2).

Nurses should be work according to standard procedures, including in performing wound care. Five nurses who worked at hospital and clinics expressed that as a nurse, they should be working based on standard procedure including in caring for diabetic patients.

"My opinion is how it mixes, but we commit. Indeed, the patients come with us to be treated for wounds, so we take care according to the standard procedure; there is no need to be afraid of the smell. Then we take care, and the important thing is we wear masks and other protective equipment" (P7).

Nurses' role in diabetic foot care includes foot examination, wound dressing. Several nurses reported that maximize wound washing could be decreased wounds' odor.

"Well, usually in diabetic foot ulcers that are infected with its characteristic, it's a smell, a smell because of the many bacteria in the wound. When it comes to the smell, I'm not too bothered by the smell, so if we can smell the smell of the wound, the patient means that the patient's wound condition is good. This smell can be removed from washing the wound so that if the maximum wound washing, the smell will be reduced" (P9).

Therapeutic nurses' care in DFU

Improvement of patient care and health services are one of the most important challenges for nurses. When participants ask about interaction with a patient of DFU, participants revealed that they were accepted the patient's condition, communication with the patient, patient privacy, and health education.

Even though the nurses' should be faced with odor wounds, but almost participants said that they accept the patient's condition.

"Try to not discriminate in caring diabetic patients even though the wound smells, we accept the patient's condition even though the wound smells" (P6).

Majority of participants reported that they were tried to implement their nursing goals in caring for DFU.

"We keep on talking, we take care of the patient's feelings, we can't say the wound smells bad, don't take care the patient, but we should care our patient even though they wound foul-smelling" (P8).

It has been observed that one of the effective nurse roles' in caring for DFU by health education. Several participants consent to give health education during wound dressing.

"Make interaction with patients during wound care and provide health education on matters relating to wound care" (P13).

Discussion

This study described information about nurses' perspectives on caring for DFU patients. Our results demonstrate that the smell of typical wound and odor is a disease process and an indicator of DFU status. Wound odors are mostly due to tissue degradation, necrosis, or invasion of aerobic and anaerobic bacteria resulting in a very strong odor. The results of previous studies reported 82% of DFU patients has odor.⁹ Presence of odor considers as a clinical sign of infection.¹⁰ Therefore, as a member of the diabetes care team, the nurse should improve their knowledge and skill with special training to provide the therapeutic care for diabetic patients¹¹ and integrate standard wound assessment such as the new diabetic foot ulcers assessment¹² into daily practice.

In this study, we also found the majority of participant's felt discomfort with the presence of odor. This is in line with the previous study that DFU susceptible to developing an unpleasant odor.⁷ The odor in the wound serves as a strong reminder of the disease being suffered so that it has a profound effect on the patient's quality of life. Thus, improvement of patient care and health services are one of the most important challenges for nurses,¹¹ including prompt treatment of DFU. We also found that the participants felt discomfort prior to wound dressing. Even though this feeling did not give an impact to the performance of nurses in taking care of the diabetic patient and had a strategy to cope with odors, this study revealed that odor management included use personal protective equipment, wound care according to the standard procedure, and maximize wound washing. The choice of prompt dressing also reduces the number of bacteria¹¹ as the determinant of odor status.

Another important theme is therapeutic nurses' care in DFU with emphasizes to accept the patient's condition, communication with the patient, patient privacy, and health education. Nurses could involve patients and family members in diabetes care education.¹³ Health education is designed to help people by increasing their knowledge and influencing their attitudes to improve well-being.¹⁴ Nurses play vital roles in achieving these goals by providing health care, educating, consulting, transformational leadership, researching, and advocating for patients.¹⁵ Regarding odor problems, it further needs investigation, especially the patient's perspective and helping patients achieve a better quality of life.⁷ Of all, this result giving an insight into nurse's perspective about caring DFU related to odor.

Conclusion

This research revealed six important themes to nurses' perspective on caring DFU, including an indicator of DFU status, discomfort with odor, odors management, and therapeutic nurses' care in diabetic foot ulcer.

Conflict of interest

The authors declare no conflict of interest.

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