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DEVELOPMENT OF MOIST WOUND HEALING METHOD GOVERNANCE MODEL BASED ON PATRICIA BANNER AND KATHERINE KOLCABA THEORY

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ABSTRACT

Background: Nursing management is the specific responsibility of the nursing manager to plan, organize, direct, and supervise resources, including personnel, equipment, and funds, to provide effective nursing care to patients, families, and the community. The head of the ward is responsible for managing the health care activities in a particular ward. Patricia Benner identified seven key areas in surgical practice, namely the assisting role, teaching and training functions, monitoring diagnosis and patients, managing change, therapeutic interventions, monitoring the quality of practice, and organizational work competencies. Benner developed this concept to describe the practical knowledge and skills in wetting, including the application of moist wound healing methods. **Objective:** This study aims to develop a governance model for the moist wound healing method based on Patricia Benner and Katherine Kolcaba's theories to improve the quality of wound care at RSUD Anugerah Tomohon. **Method:** The research design employed an action research method with a qualitative approach. The study sample consisted of 10 nurses working in the wound care unit. Data were collected through in-depth interviews and direct observation and were analyzed using thematic analysis to identify key themes related to the application of the moist wound healing method. **Result:** the moist wound healing method enhances the quality of wound care and accelerates the healing process. The implementation of the governance model based on Kolcaba and Benner's theories has a positive impact on wound care outcomes. **Conclusion:** This study recommends that hospitals adopt this model more widely and provide intensive training to nurses to enhance their wound care skills.

Keywords: Benner; governance; Kolcaba; moist wound healing method; nursing management; wound care

INTRODUCTION

Conventional wound care at Anugerah Tomohon Hospital has been identified as suboptimal, with notable differences in methods across units and a lack of understanding of moisture-based wound care concepts among nurses. Preliminary interviews revealed that most nurses rely on traditional techniques using 0.9% NaCl solution and gauze due to insufficient training and limited logistics for modern dressing methods. Even in specialized units like the ICU, modern wound care techniques are often implemented only when patients are discharged.

Despite the hospital's type C accreditation, challenges in wound care persist, compounded by a lack of certified wound care professionals. Only four out of 120 nurses possess specialized certifications. This underscores the need for enhanced training to align practices with modern standards, as advocated by Moghaddam (2019), who emphasized the role of head nurses in effective wound management through supervision and evaluation.

The increasing prevalence of diabetes in Indonesia, now affecting 8.5% of the population (RISKESDAS, 2018), highlights the urgency of addressing wound care challenges. Diabetic wounds are particularly prone to complications such as infection and amputation due to high glucose levels that inhibit immunity (Ekaputra, 2013). Modern wound dressings that maintain moisture have proven effective in accelerating healing, reducing pain, and preventing complications (Hayati et al., 2020; Sukma Wijaya, 2018). Studies have demonstrated the superiority of moist wound healing (MWH) techniques in enhancing epithelialization, reducing trauma, and

improving patient outcomes (Anggriani, 2019; Colin, 2022).

Recognizing the critical role of nursing management in implementing MWH, this study aims to develop a governance model for the MWH method. Using qualitative methods and focus group discussions, the study explores the experiences and perspectives of head nurses and team leaders at Anugerah Tomohon Hospital to identify barriers and optimize the application of this method.

METHOD

This study used a qualitative design, with an exploratory phenomenological approach and action research. The phenomenological approach aims to explore the subjective experiences of ward heads in nursing management, while action research is used to evaluate the effectiveness of interventions conducted through consultations and workshops. This study was conducted at a regional hospital in Central Java.

Consisting of eight room heads was selected using the purposive sampling method based on the following criteria: minimum education of S1/Nursing, more than two years of work experience, willingness to be a participant by providing written consent, and ability to communicate well during discussions. The instruments used included a structured discussion guide for Focus Group Discussion (FGD), including questions related to Moist Wound Healing (MWH) governance experiences and needs, and an evaluation sheet for the workshop. This instrument measures variables such as understanding, needs, and effectiveness of the model design.

The validity of the instrument is determined through content testing by experts, whereas reliability is maintained by consistency testing during the FGD process. Data were collected through FGDs aimed at exploring participant needs and workshops to develop a governance model based on the Patricia Benner Theory. The data analysis process included transcription, re-reading, categorization, and theme identification. Data validity was maintained through member-checking, triangulation, and expert consultation.

Ethics approval Nomor: 007/KEP/UNKAHA/SLE/I/ 2025was obtained from the hospital ethics committee with respect to the privacy and confidentiality of the participants. Participants' rights were protected through written informed consent and the use of anonymous codes (P1-P8) to protect identities. The research process followed the applicable research ethics standards.

RESULTS

Theme 1: Principles of Wound Hygiene

In the early stages, wound cleanliness is considered important before implementing the Moist Wound Healing method. The participants stated the importance of ensuring that the wound is free from contamination, such as pus, dirt, or dead tissue, to support effective healing.

Participant Quotes:

Participants described several essential steps for wound care before applying a moisture-retaining dressing. P8 emphasized the importance of first checking whether the wound has pus or is dirty. P4 highlighted that if the wound is dirty, dusty, or contains sand, it is cleaned using a 0.9% NaCl solution to ensure the wound is free from contaminants. P7 added that the initial step involves opening the dressing to confirm cleanliness and, if dead tissue is present, removing it to prepare the wound for further care.

Findings:

The findings revealed that cleaning the wound with an antiseptic solution, such as 0.9% NaCl, is a crucial step before applying a moisture-retaining dressing. Additionally, removing dead tissue from the wound is prioritized to support optimal tissue regeneration and promote healing. The wound care process involves cleaning the wound with an antiseptic solution, such as 0.9% NaCl, before applying a moisture-retaining dressing. Additionally, removing dead tissue from the wound is considered a top priority to support tissue regeneration and ensure optimal healing conditions.

Theme 2: Recognizing Signs of Infection

The ability to recognize signs of infection is an important competency for wound care. The participants showed attention to signs such as redness, swelling, pus, and changes in temperature in the wound area.

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Participant Quotes:
Participants highlighted the importance of identifying signs of infection during wound care. P3 noted that redness, warmth, and the presence of odor are initial indicators to observe. P1 added that the presence of pus, fever in the patient, redness, and pain are definitive signs to monitor. P2 emphasized the need to not only observe the patient's overall condition but also prioritize treatment steps. For instance, if there is a significant amount of pus, cleaning the wound takes precedence before proceeding with further interventions.

Findings:
Signs such as redness, bad odor, and pain indicate an infection that requires immediate attention and appropriate action. The presence of excessive pus or exudate is another critical concern that necessitates thorough and intensive wound cleaning to prevent further complications and support the healing process.

Theme 3: Frequency of Wound Monitoring

Routine monitoring of wound conditions is the key to moisture-based care. Observations were made to assess the success of the MWH method and detect potential complications.

Participant Quotes:
P4 explained that after performing the procedure, observations are typically conducted one day later to check for any signs of infection. The type of dressing applied depends on the condition of the wound. For instance, surgical wounds are treated with dry dressings, whereas necrotic wounds are managed using wet dressings soaked in a 0.9% NaCl solution to support the healing process.

Findings:
Initial monitoring was conducted within the first 24 hours following the procedure to assess the wound's condition and detect any signs of infection. The type of dressing applied was tailored to the specific condition of the wound, with wet dressings being used for necrotic wounds to support the healing process.

Theme 4: Barriers and Solutions in Implementing MWH

Various barriers to implementation of the MWH method have been identified, such as limited knowledge, resources, and patient readiness.

Participant Quotes:
P8 highlighted that one of the inhibiting factors in wound care is the limitation of human resources, which can be addressed by providing training to nurses to enhance their skills and knowledge. P5 emphasized the importance of ensuring the availability of adequate equipment and materials to support the proper implementation of wound care procedures.

Findings:
Education and training for medical personnel are prioritized to address the limited understanding of this wound care method, ensuring that nurses and other staff are equipped with the necessary skills and knowledge. Additionally, procuring adequate equipment is essential to maintain consistency and effectiveness in the implementation of care.

Deming's Quality Management Theory (1986) support the implementation of quality indicators in ensuring compliance with clear Standard Operating Procedures (SOPs). Cutting et al. (2021) state that quality-based documentation and evaluation ensure consistency in care practices and minimize the risk of procedural errors.

DISCUSSION

Basic Principles of Moist Wound Healing

Moist Wound Healing (MWH) aims to create an optimal moist environment that accelerates tissue regeneration and reduces complications. Winter (1962) demonstrated that wounds heal faster in a moist environment compared to traditional dry methods. Supporting studies, such as Junker et al. (2013), showed that optimal humidity enhances granulation, proliferation, and epithelialization. It also promotes the delivery of growth factors and cells to the wound site, creating a regenerative microenvironment that minimizes scar tissue formation. These findings highlight the foundational importance of maintaining moisture for effective wound healing.

Effectiveness of Modern Dressings in MWH

The effectiveness of MWH largely depends on the choice of dressings. Sun et al. (2022) found that silver-ion-based dressings accelerate healing and prevent infections in surgical wounds. Hydrocolloid dressings, known for requiring fewer changes, increase treatment efficiency. Nuutila and Eriksson (2020) further support the use of hydrogels and alginates, which maintain optimal moisture, facilitate autolytic debridement, reduce pain, and

activate collagen synthesis. These findings reinforce the critical role of modern dressings in enhancing the outcomes of MWH.

Technological Developments in MWH

Technological advancements have greatly improved MWH applications. Innovations such as "smart dressings" equipped with microsensors allow real-time monitoring of wound conditions without disturbing the dressing. Nuutila and Eriksson (2020) highlighted that this minimizes trauma to the patient, reduces the risk of infection, and improves the efficiency of wound management. These developments emphasize the integration of technology in modern wound care.

Application of MWH in Chronic Wounds

MWH is particularly effective for chronic wounds like decubitus ulcers. Ling (2021) demonstrated that patients treated with MWH showed significantly faster healing rates and fewer complications, such as pain and infections, compared to those treated with conventional methods. This underscores the potential of MWH in managing complex and long-term wounds effectively.

Obstacles and Solutions in Implementing MWH

Challenges in implementing MWH include insufficient training for medical personnel and limited access to modern dressings. Furtado et al. (2020) emphasized the importance of a multidisciplinary approach to address these issues. Comprehensive training and the provision of adequate resources are essential for improving the adoption and efficacy of MWH. These solutions ensure that medical personnel are equipped with the knowledge and tools to optimize patient outcomes.

Analysis

The findings from multiple studies align with the fundamental principles of MWH proposed by Winter (1962). Modern dressings, such as hydrogels and silver-ion-based options, clearly demonstrate the importance of maintaining an optimal moisture environment for tissue regeneration, pain reduction, and infection control. Additionally, technological advancements like smart dressings represent a leap forward in wound care, allowing real-time monitoring without disrupting the healing process. While challenges such as limited resources and training persist, addressing these through education and resource allocation can significantly enhance the successful implementation of MWH. These insights solidify MWH as a scientifically supported and clinically effective approach to wound management.

This study has several limitations that do not significantly affect the findings, such as external factors and the patient's medical conditions that cannot be fully controlled in this study. Although comorbidities such as diabetes can affect the healing process, this study shows that Moist Wound Healing has great potential for managing wound care in patients with various medical conditions. However, the researchers suggest that further research should consider other medical factors in greater depth to assess their influence on the success of treatment.

CONCLUSION

The study concludes that the application of the Moist Wound Healing method positively impacts the healing process, particularly for acute wounds, by reducing pain and accelerating tissue regeneration. Factors such as nurse knowledge, patient health status especially in those with diabetes mellitus and appropriate dressing selection significantly influence its success. To optimize outcomes, hospitals should prioritize regular nurse training on this method, ensure the availability of necessary resources and materials, conduct routine monitoring and evaluation, and educate patients and families on proper wound care techniques to support effective healing.

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