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REVIEW ARTICLE

Abstract

Background: Diabetes mellitus is a group of heterogeneous disorders that have indications in the form of increased content of high blood sugar levels. WHO also confirmed DM to be the 7th trigger of death. IDF (International Diabet Federation) data estimates from survey results after North America in 2017 the 3rd place was occupied by Southeast Asia and people with diabetes mellitus with a percentage of 8.5% at the age of 20-29 years in North Africa. One of the treatments for patients with diabetes mellitus can be wound care using Modern Dressing with the Moist Wound Healing method. Methods: The method used in this wound treatment is the Modern Dressing technique with the Moist Wound Healing method. This procedure can clinically grow tissue 30-50%, increase collagen synthesis by 50%, and the rate of re-epithelialization with moist conditions is 2-5 times faster and can reduce the amount of fluid from above the wound surface. Results: evaluation shows that Modern Dressing wound care with the Moist Wound Healing method is in fact able to maintain moist conditions in the wound, reduce inflammation in the wound so that it can improve and accelerate the healing process of diabetic ulcers. Conclusion: The results showed that the Modern Dressing technique with the Moist Wound Healing method was able to improve the healing process of diabetic ulcers. The results also showed that there were significant changes between modern and conventional dressings. The modern dressing group had a much better development than the conventional dressing. The application of the Moist Wound Healing method in patients with diabetic ulcers can provide a much faster wound recovery reaction.

Keywords: Diabetic Ulcer, Wound Care, Modern Dressing, Moist Wound Healing.

Introduction: Diabetes mellitus is a group of heterogeneous disorders that have indications in the form of increased blood sugar levels. In diabetics, the body's ability to produce insulin may diminish and insulin production may stop. This condition can lead to an increase in blood sugar levels which causes chronic metabolic problems such as diabetic ketoacidosis which can cause hyperosmolar nonketotic hypoglycemia syndrome (HHNK), and in the long term can cause renal disease, affect the optic nerve and macrovascular problems including heart muscle death, stroke and characterized by narrowing of arterial blood vessels [1]
Based on information obtained by the World Health Organization (WHO, 2016) the number of people with diabetes has faced an increase starting with 108 million people in 1980, and in 2014 the number of people with diabetes rose to 422 million people. WHO (World Health Organization) also confirmed DM to be the 7th trigger of death. IDF (International Diabetes Federation) data estimates from survey results after North America in 2017 the 3rd place was occupied by Southeast Asia and people with diabetes mellitus with a percentage of 8.5% at the age of 20-29 years in North Africa [2].

According to the Ministry of Health, 2013 In Indonesia, data on the prevalence of DM sufferers in 2018 the prevalence of DM sufferers was 10.3 million and increased in 2045 to 16.7 million DM sufferers in Indonesia. Yogyakarta has the highest percentage of (2.6%) patients with DM, and the most symptomatic diagnosis is in Central Sulawesi with a total percentage of (3.7%) [3]. According to a survey by the Ministry of Health, 2016 DM sufferers in 2014 in Makassar city experienced an increase of 1,894 people, an increase of 5,700 people in 2015 and in 2016 diabetes mellitus sufferers increased by 4,555 [3].

Moist Wound Healing is a procedure that aims to keep the wound area moist by using moist, occlusive and semi-occlusive dressings so that injury treatment and tissue development can occur naturally, can speed up treatment by 45% and can reduce inflammation and scarring development. Wound management at this time is mainly for chronic wounds, such as leg vein ulcers, pressure ulcers, and diabetic foot ulcers. This method also has the benefits of quick wound healing, good treatment quality and efficient wound care and financing. Proper wound care needs to be applied as an effort for the wound treatment process, [4]

**Methods**

Literature study is a technical search for relevant information related to the problem to be studied. This information can be obtained from books, journals, articles, research reports, and internet sites. Literature study aims to strengthen the problem and as a theoretical basis in conducting further research [5].

Data sources for literature study research are taken from 2 journals, books, and literature that have information related to the effectiveness of Modern Dressing wound care with the Moist Wound Healing method on diabetic ulcers.

**Data collection**

Data collection for this literature review comes from google scholar by taking scientific journal articles, books and literature that contain the concept under study. In detail, researchers have analyzed 12 journals and as many as 5 journals contain information that is in accordance with the focus of the study and have objectives that are in accordance with the concepts to be discussed. Of the 5 journals, researchers took 2 journals that were used as a theoretical basis because they were more in accordance with predetermined criteria, such as the title, journal content, as well as the subject matter to be discussed and the year of publication of the journal. Other supporting sources used by researchers are books, literature that has information related to the effectiveness of Modern Dressing wound care with the Moist Wound Healing method on diabetic ulcers.

**Analysis**

Data analysis is one of the important things in a study. Data analysis is the process of searching and compiling,
describing, systematizing the data that has been obtained by reviewing journal notes and making conclusions with the aim that researchers and others can better understand the case under study [5]. Data analysis is carried out by searching for relevant data from various books, journals or other sources that are in accordance with the topic of discussion. Other ways that can be done such as looking at the year of research, starting from the most recent gradually back to the old year. Form a containing writing that is arranged systematically with the aim of being simpler to understand [6].

Results

Table 3.1. Average comparison of wound healing effectiveness

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Position</th>
<th>Injury Level</th>
<th>Score Pre</th>
<th>Score Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>50</td>
<td>2</td>
<td>Left foot</td>
<td>52</td>
<td>42</td>
</tr>
<tr>
<td>P</td>
<td>60</td>
<td>2</td>
<td>Right foot</td>
<td>37</td>
<td>30</td>
</tr>
</tbody>
</table>

Research conducted by Maria Imaculata Ose entitled "Effectiveness of Wound Care Wet-Dry and Moist Wound Healing Techniques on Healing Diabetic Ulcers)". On the grounds that the journal explains the results of research that patients with diabetic ulcers when treated with the moist wound healing method the reaction to wound recovery is much faster.

Table 3.2. Mean comparison of wound healing effectiveness

<table>
<thead>
<tr>
<th></th>
<th>Wet-Dry</th>
<th>Moist Wound Healing</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Mean</td>
<td>2.33</td>
<td>1.40</td>
</tr>
<tr>
<td>SD</td>
<td>.485</td>
<td>.057</td>
</tr>
<tr>
<td>t</td>
<td>5.392</td>
<td>5.369</td>
</tr>
<tr>
<td>P Value</td>
<td>0.004*</td>
<td></td>
</tr>
</tbody>
</table>

The results also showed that the wound care group using the Wet Dry technique obtained a result of 2.33, while the Moist Wound Healing method obtained an average result of 1.40. The paired t-test obtained significant results, namely p - 0.004, which p value <0.05 so this shows that the comparison of the two is obtained.

Table 4.1. Results The similarities and differences of the journals used as references in this study are as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Similarities</th>
<th>Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Anggraini, et al. 2019</td>
<td>Effectiveness of modern wound dressing with moist wound healing method on diabetic ulcer. effectiveness of modern wound dressing with moist wound healing method on diabetic ulcer. Moist wound healing method is more effective on wound healing in diabetic ulcer.</td>
<td>The research design used a quasy experiment with a cross sectional approach. Quantitative method with quasy experiment research design with comparison group (control time series design). Involving as many as 2 respondents, namely 1 male respondent and 1 female respondent. Involving 33 respondents who were divided into 2 groups consisting of 18 people using wound care with the Wet-dry technique and 15 respondents using moist wound healing wound care.</td>
</tr>
<tr>
<td>2.</td>
<td>Ose et al. 2018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussions

It is known that the results of research in the first journal with the title of the...
Effect of Modern Dressing on DFU

Susanti et al.

Java Nursing Journal, Vol. 1, No. 1, 2023, ISSN: 2988-4152

Effectiveness of modern dressing wound care with the moist wound healing method on diabetic ulcers, there were 2 respondents, one male aged 50 years and one female aged 60 years [8]. This type of research is quantitative with a quasi experimental research design. The sampling technique used was accidental sampling. In male respondents, the ulcer wound was on the left leg and in female respondents it was on the right. The degree of wound in male respondents before treatment was 5 and in female respondents 4. After wound treatment for 3 weeks, the results of the degree of wound in male respondents were 4 and in female respondents 4. The results also showed that the Moist Wound Healing method in wound care with modern dressing was able to improve the healing process of diabetic ulcers. The modern dressing group had a much better development with a percentage (16%) and the wound condition in the conventional dressing had a percentage result (8.75%).

It is known that the results of the second research journal in the journal with the title effectiveness of wound care wet-dry dressing techniques and moist wound healing on diabetic ulcer healing conducted at Tarakan Hospital showed 33 respondents who were divided into 2 groups, namely 18 respondents using Wet-dry wound care techniques and 15 people using moist wound healing techniques. In this study, researchers used purposive sampling technique. The second journal explains the results of the study that patients with diabetic ulcers when treated with the moist wound healing method, the wound recovery reaction is much faster than wounds treated with Wet Dry. Because diabetic ulcer treatment with the Wet Dry technique or often called wet dry can only be done to help the debridement process and the healing process is strongly influenced by environmental temperature so that this technique is less than optimal [9].

Whereas diabetic ulcer treatment with the Moist Wound Healing technique itself, the treatment process itself has a moist concept by considering the right environment so that the wound healing process is much faster and this technique is very appropriate for wound care in ulcer patients. The results also showed that the wound care group using the Wet Dry technique obtained a result of 2.33, while the Moist Wound Healing method obtained an average result of 1.40. The paired t-test obtained significant results, namely p = 0.004, where the p value <0.05, this shows that there is a comparison between the two. From the results of the two journals, it is known that the moist wound healing method is effective for diabetic ulcer wound healing using modern dressings.

This is in line with research from [10] which states that the moist wound healing method in wound care with modern dressings can improve the healing process of diabetic ulcers. In modern dressings, the wound condition has changed from conventional dressings. The modern dressing group has a much better development with a percentage (16%) and the state of the wound in the conventional dressing has a percentage result (8.75%). This is also in line with research conducted by [4] which states that patients with diabetic ulcers treated using the moist wound healing method have a much faster recovery reaction compared to using the Wet Dry method.

The Wet Dry method is considered a mechanical debridement method which will only press the surface of the tissue, which will cause the healing process to be inhibited. Whereas in the moist wound healing method, in addition to the principle of moisture itself, this technique can also
increase rapid epithelialization so that the wound healing process is much faster too, where the p value > 0.5 shows the difference in the two that diabetic ulcer patients treated using the moist wound healing method have a much faster recovery reaction than using the Wet Dry method.

Conclusion
The results showed that the Modern Dressing technique with the Moist Wound Healing method was able to improve the healing process of diabetic ulcers. The results also showed that there were significant changes between modern and conventional dressings. The modern dressing group had a much better development than the conventional dressing. The application of the Moist Wound Healing method in patients with diabetic ulcers can provide a much faster wound recovery reaction.

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Conflict of Interest Statement
The authors declared no conflict of interest

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References


