

## Characteristics of Wound Assessment According to Meggit-Wagner and Pedis and Spiritual Response in Diabetic Ulcer Patients at RSUD Dr. Soekardjo Tasikmalaya City

Bayu Brahmantia<sup>1</sup>, Yuyun Solihatin<sup>1</sup>, Heri Budiawan<sup>1</sup>  
*Universitas Muhammadiyah Tasikmalaya, Kota Tasikmalaya, Indonesia*

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#### *Corresponding Author :*

Bayu Brahmantia

E-mail :

[brahmantiabayu481@gmail.com](mailto:brahmantiabayu481@gmail.com)

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### ABSTRACT

**Background & Objective:** Diabetic ulcer is one of the complications of diabetes mellitus. Assessment of diabetic ulcers is done as a basis for determining wound care and therapy. Meggit-Wagner and Pedis have the advantages of a simple, easy-to-remember system, based on the location and depth of ulceration. A good quality of life for ulcer patients is an optimal functional condition in terms of physical, psychological, environmental, social and spiritual aspects. Good spirituality and social can improve the health of diabetic ulcer patients. **Method:** The purpose of the study was to determine the wound with Meggit-Wagner and PEDIS assessment and the spirituality of diabetic ulcer patients. Descriptive case study research method, sample of 3 respondents. **Result:** The results showed that the respondents' education level was high school / vocational school, the gender of the respondents was female, the results of the Maggit-Wagner wound assessment of the wound condition of respondents 1, 2 and 3 grade 3, namely deep wounds with cellulitis or abscess formation. **Conclusion:** The results of the PEDIS assessment of respondents 1, 2 and 3 grade 3 wounds, namely severe infection based on PEDIS characteristics, are characterized by more than two signs in the characteristics: cellulitis >2 cm, abscesses in deep tissue and gangrene but no systemic inflammation. It is suggested that nurses can apply Maggit-Wagner and PEDIS wound assessment so that they are more precise in providing dressings and better understand the condition and characteristics of the wound.

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## **Introduction**

Diabetic ulcers are chronic wounds that commonly occur in the area below the ankle caused by the process of peripheral neuropathy, peripheral arterial disease or both that increase morbidity, mortality and reduce the quality of life of patients. The hallmarks of diabetic ulcers are neuropathy, ischemia and infection (Sukmana et al., 2019). Metabolic disorders in patients with diabetes mellitus increase the risk of infection and poor healing, in addition to lifestyles such as smoking, unhealthy diet and obesity also affect the occurrence of diabetic ulcers. Peripheral neuropathy is a risk factor that often results in diabetic ulcers, it is reported that the prevalence rate of diabetic neuropathy has increased from 16% to 66%, more than 60% of diabetic ulcers are caused by peripheral diabetic neuropathy (Soelistijo, 2021). In addition, foot deformity factors result in load imbalance and increase pressure on the plantar foot. The risk of diabetic ulcers may increase by 30-50% in patients with a history of wounds and amputations. Reducing the risk of diabetic ulcers so that further complications such as amputation and sepsis do not occur requires an assessment of patients who have a history of wounds and experience wounds (Budiawan et al., 2021). Spirituality is an important factor that helps individuals achieve the balance needed to maintain health and well-being and to adapt to the patient's illness with a lack of spiritual social support will affect the patient's motivation or drive to recover. Motivation to recover is very important for patients because this will be one of the factors that will accelerate the patient's recovery (Nurmaidah et al., 2021). In sick conditions, individuals are faced with the problem of physical disorders which have an impact on other disorders such as psychological, social, spiritual and other disorders. Patients with diabetes are twice as likely to have anxiety status, depression and serious psychological problems. Patients' emotional distress can directly affect treatment outcomes including glycemic control and complications. Adherence to treatment, the high cost of treatment are also factors that make patients' psychological distress. The psychological distress of patients with diabetes is often associated with spiritual well-being and religious adherence. Research conducted by Najmeh, entitled *Spiritual Well-Being and Quality of Life of Iranian Adults with Type 2 Diabetes*, states that the poor quality of spiritual well-being most causes patients to fall into a state of depression (Jafari et al., 2014). This impaired condition will ultimately affect the patient's quality of life. It is very important that we pay attention to the handling of spirituality and religiosity in diabetes management. Several studies have shown that there is a positive relationship between spiritual well-being and diabetes management such as glycemic control and self-management. Limited information related to the spirituality of patients and families and the existence of different views in interpreting spirituality and religiosity make it less optimal in improving the spiritual well-being of patients which in turn can help patients improve their quality of life (Lutfi et al., 2021).

## **Objective**

The purpose of this study was to determine the characteristics of Meggit-Wagner and Pedis wound assessment and spiritual response in diabetic ulcer patients in Tasikmalaya City.

## **Method**

The research method used descriptive research with a case study approach (interviews and direct observation) on respondents whose results were in the form of

characteristics of diabetic ulcers according to Meggit-Wagner and PEDIS and spiritual responses in diabetic ulcer patients. The sampling technique used purposive sampling with the criteria of patients over 18 years of age.

## Results

### 1. Respondent Characteristics and History

**TABLE 1.** Respondent Characteristics and History

| No. | Sample            | Description  |
|-----|-------------------|--|
| 1.  | Respondent 1 (R1) | Female gender, 56 years old, Muslim religion, Sundanese ethnicity, high school education, housewife occupation, received therapy/treatment cefixime iv, ranitide iv, insulin 4 units/8 hours sc, the type of wound care performed was the moist method with sterile gauze dressing, 0.9% NaCl was applied to the wound and fixed with plaster. The wound occurred 2 weeks ago, the wound occurred on the right leg, the wound had a typical ulcer smell, there was moderate pus fluid, the wound was reddish in color, the length of the wound was 2 cm, the width of the wound was 2 cm. GDS 270 mg/dl.             |
| 2.  | Respondent 2 (R2) | Female gender, 58 years old, Muslim religion, Sundanese ethnicity, high school education, housewife occupation, received therapy/treatment cefixime iv, ranitidine iv, omeprazole iv. The wound care given was moist method with sterile gauze dressing, NaCl 0.9% was applied to the wound and fixed with plaster. Diagnosed with DM 2 years ago. Wound care duration was 2 weeks. The wound occurred 3 weeks ago, frequent activities in the fields, wound length 3 cm, wound width 1 cm, typical ulcer odor, moderate yellowish wound fluid, wound in the area between the toes of the right foot. GDS 250 mg/dl. |
| 3.  | Respondent 3 (R3) | Female gender, 60 years old, Muslim religion, Sundanese ethnicity, last education SMK, diagnosed with DM since 4 years ago, while being treated with cefixime iv, omeprazole iv, insulin. Wound care with moist method, dressing used sterile gauze, NaCl 0.9% wrapped with bandage and fixed with plaster. The length of the wound was 3 cm, the width of the wound was 3 cm, the odor was typical of an ulcer, the exudate was moderate, the wound was on the lower front area of the sole of the foot. GDS 300 mg/dl.   |

Source: Primary data (2024)

### 2. Meggit-Wagner wound assessment

**TABLE 2.** Wound Characteristics of Diabetic Ulcer Patients

| Grade | Characteristics  | R1 | R2 | R3 |
|-------|--|----|----|----|
| 0     | No high-risk foot wounds yet                                 |    |    |    |
| 1     | Superficial wound  |    |    |    |
| 2     | Wound to tendon or deeper subcutaneous layer but not to bone |    |    | v  |

|   |   |   |   |  |
|---|---|---|---|--|
| 3 | Deep wounds with cellulitis or abscess formation                                  | v | v |  |
| 4 | Localized gangrene (gangrene of the fingers or front of the foot)                 |   |   |  |
| 5 | Gangrene covering a larger area (up to the arch of the foot and back of the foot) |   |   |  |

Source: Primary data (2024)

### 3. PEDIS wound assessment

**TABLE 3.** PEDIS wound assessment

| Grade | Severity     | Characteristics and clinical signs  | R1 | R2 | R3 |
|-------|--------------|---|----|----|----|
| 1     | No infection | Wound without pus or inflammation   |    |    |    |
| 2     | Mild         | Presence of 2 or more of the following signs:<br>- Purulent<br>- Redness<br>- Pain<br>- Pain when touched<br>- Induration (becoming hard)<br>- Cellulitis around the wound $\leq$ 2cm<br>Damage is limited to the epidermis, dermis or upper subcutaneous layer with no signs of complications.   | v  | v  | v  |
| 3     | Severe       | Local infection, occurs in patients who are systemically and metabolically stable, but have $\geq$ 1 of the following signs:<br>- Cellulitis $>$ 2cm<br>- Lymphangitic streaking (reddish lines under the skin)<br>- Deep tissue abscess<br>- Gangrene<br>- Damage has reached muscle, tendon, joint or bone<br>No signs of systemic inflammation |    |    |    |
| 4     | Severe       | Infection in patients with systemic toxicity and unstable metabolic conditions:<br>- Temperature $>$ 39°C or $>$ 36°C<br>- Pulse rate $>$ 90x/minute<br>- PaCO <sub>2</sub> $<$ 32 mmHg.  |    |    |    |

Source: Primary data (2024)

### 4. Spiritual Needs Assessment

**TABLE 4.** Spiritual Needs Assessment

| No.                 | Question   | Very great | Somewhat large | Not very | Not at all |
|---------------------|--|------------|----------------|----------|------------|
| <b>Psychosocial</b> |  |            |                |          |            |
| 1.                  | How much would you like to talk to patients who are experiencing the | R1, R2, R3 |                |          |            |

|                  |   |            |  |  |  |
|------------------|---|------------|--|--|--|
|                  | same illness as you?  |            |  |  |  |
| 2.               | How much would you like to be given relaxation or stress management?              | R1, R2, R3 |  |  |  |
| 3.               | How much would you like to learn to cope with sadness?                            | R1, R2, R3 |  |  |  |
| 4.               | How much would you like to share your thoughts with others?                       | R1, R2, R3 |  |  |  |
| 5.               | How much do you worry about your family?  | R1, R2, R3 |  |  |  |
| <b>Spiritual</b> |   |            |  |  |  |
| 6.               | How much do you want to find meaning in your illness?                             | R1, R2, R3 |  |  |  |
| 7.               | How much do you want to find hope?  | R1, R2, R3 |  |  |  |
| 8.               | How much do you want to overcome your fears?                                      | R1, R2, R3 |  |  |  |
| 9.               | How much do you want to pray?   | R1, R2, R3 |  |  |  |
| 10.              | How much do you want to worship?  | R1, R2, R3 |  |  |  |
| 11.              | How much do you want to get closer to the group and share your spiritual beliefs? | R1, R2, R3 |  |  |  |
| 12.              | How much do you want to overcome the suffering you are experiencing?              | R1, R2, R3 |  |  |  |
| 13.              | How much do you want to find meaning and purpose in human life?                   | R1, R2, R3 |  |  |  |

|                 |  |            |  |            |  |
|-----------------|--|------------|--|------------|--|
| 14.             | How much do you want to face death?  |            |  | R1, R2, R3 |  |
| 15.             | How much do you want to find peace of mind?  | R1, R2, R3 |  |            |  |
| 16.             | How much do you want to resolve problems, pain, grudges between your family or friends?                              | R1, R2, R3 |  |            |  |
| 17.             | How much do you want forgiveness?  | R1, R2, R3 |  |            |  |
| 18.             | How much do you want decisions about your medical care to be in accordance with your spiritual or religious beliefs? | R1, R2, R3 |  |            |  |
| <b>Religion</b> |  |            |  |            |  |
| 19.             | How much do you want help from your faith community?   | R1, R2, R3 |  |            |  |
| 20.             | How much would you like to be visited by the hospital chaplain/religious leader?                                     | R1, R2, R3 |  |            |  |
| 21.             | How much would you like a visit from a fellow member of your faith community?  | R1, R2, R3 |  |            |  |
| 22.             | How much would you like to perform religious rituals such as chanting, prayers, lighting candles or incense?         | R1, R2, R3 |  |            |  |
| 23.             | How much would you like to be given spiritual texts such as the  | R1, R2, R3 |  |            |  |

|  |                                      |  |  |  |  |
|--|--------------------------------------|--|--|--|--|
|  | Quran, bible, or other prayer books? |  |  |  |  |
|--|--------------------------------------|--|--|--|--|

Source: Primary data (2024)

### Discussion

Diabetes mellitus with diabetic ulcer complications is more common in women than in men. This is because women tend to have high fat levels that affect the work of insulin. (Perkeni, 2015 in Sukmana, 2019). The ages of the respondents were 56, 58 and 60 years, respectively, which means that the respondents were  $\geq 50$  years old. Age is one of the risk factors for diabetes mellitus and diabetic ulcers. In old age the organs of the body begin to experience decreased function, such as insulin resistance which causes instability and even uncontrolled increases in blood sugar levels which can lead to various complications of diabetes mellitus such as reduced vision, decreased sensation due to diabetic neuropathy increasing the incidence of unrecognized ulcers which eventually develop into diabetic ulcers. The education of respondents 1, 2 and 3 is secondary school. The level of education also affects a person's level of understanding in receiving information. People with higher education are usually more informed about disease or health information. (Hardianti, 2018 in Sukmana, 2019). The length of treatment carried out by respondents calculated at the time of the assessment on June 12, 2024 was R1 2 days of treatment, R2 4 days of treatment, and R3 one week of treatment. From this data, it can be obtained that the interval length of treatment is 2 days - 1 week. This is in line with research conducted by Sukmana (2019) which states that the average length of treatment for gangrene ulcers is more than 1 week and even reaches 30 days. Long suffering from DM will further increase the occurrence of complications in the form of damage and impaired function of organs. The type of wound care given to respondents 1, 2 and 3 is sterile gauze dressing moistened with 0.9% NaCl. Wound care with the concept of moist wound healing is to maintain wound conditions in a moist state so as to increase cell movement at the wound bed and allow neutrophils and macrophages to migrate better. The size of the wound in respondents was insulin and was influenced by the presence of abscess formation or edema, which required surgery or incision of the wound so that the fluid in the wound could be released and to improve the condition and healing of the wound. Wound odor is found in wounds with a black wound bed or those that have become gangrenous, starting with necrotic tissue. This occurs as a result of reduced or inadequate blood supply to the tissue either due to injury, radiation or chemicals exacerbated by bacterial infection. Wound odor is influenced by the infection process and the resultant protein products, so wound management that minimizes wound odor is necessary for the comfort of the patient and the surrounding environment.

Spirituality is a strong connection and passion for a person's purpose in life, comfort and support, hope and faith. Spirituality has a positive influence on health, well-being, and motivates people with chronic illnesses to take responsibility for their health. A person who is able to achieve spiritual well-being will feel the meaning and purpose of life and be adaptive to their condition so that high spirituality is closely related to the level of quality of life, meaning that the higher a person's spirituality, the higher their quality of life will be.

Spiritual needs are important needs that must be met in diabetic ulcer patients because they can affect all aspects of physical activity-productivity, psychological, and spiritual. From the results of the assessment, respondents have a very big desire for psychological, spiritual and religious aspects. This shows that there is a very high desire and hope in the patient so that the disease will recover soon and can return to normal activities. Spiritual assessment can help patients. The researcher assumed that the patient's high expectation of spiritual needs was due to a very high desire for the ulcer to improve. Excessive stress and anxiety in diabetic ulcer patients can occur if their spiritual needs are not met properly, so feelings of helplessness, long wound infections, even years are the main causes of this. If the patient's spiritual needs are good, then the patient can at least accept sincerely with the condition of the illness, high confidence to recover becomes a source of strength during illness.

### Conclusion

The conclusion of this study is that the education level of respondents 1, 2 and 3 is SMA / SMK, the gender of all respondents is female, the results of the Maggit-Wagner wound assessment of the wound condition of respondents 1, 2 and 3 grade 3, namely deep wounds with cellulitis or abscess formation. The results of the PEDIS assessment of respondents 1, 2 and 3 grade 3 wounds are severe infections based on PEDIS characteristics characterized by more than two signs on the characteristics: the presence of cellulitis >2 cm, the presence of abscesses in deep tissue and gangrene but no systemic inflammation.

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