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Anxiety Levels in Diabetes Mellitus Patients with Diabetic Foot Ulcers

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ABSTRACT

Uncontrolled diabetes mellitus can result in various severe complications, including diabetic foot ulcers, which often lead to significant psychological distress such as anxiety. This study aimed to assess the level of anxiety among diabetic patients with foot ulcers. A descriptive quantitative design was employed involving 30 inpatients treated in the Wijaya Kusuma Ward of Dr. Soedono Hospital, Madiun. The study utilized a total sampling technique, and anxiety levels were measured using the *Hamilton Anxiety Rating Scale* (HARS) between April 29 and May 4, 2024. The findings revealed that more than half of the respondents were female, and most participants experienced severe anxiety, particularly those aged 51–70 years. Overall, anxiety levels among patients ranged from mild to severe, influenced by factors such as age and ulcer severity. These results highlight the importance of comprehensive support and motivation from healthcare providers and family members to help patients manage anxiety effectively and improve their psychological well-being during ulcer treatment.

Keyword : Anxiety,Foot ulcers,Ulcer Grade

INTRODUCTION

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Diabetes Mellitus continues to be a significant issue in developing countries (1). Its increasing prevalence and inadequate management contribute to complications, one of which is diabetic foot ulcers (2). The prevalence of diabetes mellitus with diabetic foot ulcers has been rising annually, globally ranging between 4-10%, leading to 40-70% of diabetic foot ulcer cases resulting in non-traumatic amputations (3). A recent global meta-analysis estimates the prevalence of diabetic foot ulcers (DFU) among people with diabetes at about 6.3 % (4). In Indonesia, the prevalence of diabetic foot ulcers is 15%, with a mortality rate of 32.5%, an amputation rate of 23.5%, and 80% of diabetes mellitus patients requiring hospital care (5). According to Riskesdas 2018, the prevalence of diabetes in East Java

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Province ranks in the top ten in Indonesia, with a prevalence rate of 6.8% (6). Psychologically, patients suffering from diabetic foot ulcers tend to struggle with accepting the decline in their abilities, which can lead to psychological disorders such as anxiety, ultimately adversely affecting their health (7). The outlook of diabetic foot ulcer patients towards their future tends to shift, resulting in pessimism and reduced self-confidence, causing increased worry (8). Diabetic foot ulcers can also lead to psychological impacts, including anxiety and stress (9). Indirectly, individuals with poor self-acceptance tend to have a negative view of their ability to manage their disease, which can affect their healing process and diabetes self-management (10).

It can be concluded that patients with diabetic foot ulcers experience anxiety that can affect the healing process of the ulcers. Several studies conducted so far still have some limitations. Therefore, due to this phenomenon, further research is needed to measure the levels of anxiety experienced by patients suffering from diabetic foot ulcers. The purpose of this study is to determine the levels of anxiety in diabetic mellitus patients with diabetic foot ulcers.

METHODS

This study is a quantitative research with a descriptive design. The population in this study consists of diabetes mellitus patients at RSUD Dr. Soedono Madiun in Wijayakusuma wards C, D, and E, from April 29 to May 4, 2024, totaling 30 respondents using a total sampling technique. The research period was from April 2024 to May 2024. Data collection took place at RSUD Dr. Soedono Madiun in Wijayakusuma wards E, C, and D. Data analysis in this study employed univariate analysis. The method used to measure anxiety in this study was the Hamilton Anxiety Rating Scale (HARS). The scoring for HARS is as follows: 0 = no symptoms, 1 = one of the symptoms, 2 = half of the symptoms, 3 = more than half of the symptoms, 4 = all symptoms present. The determination of anxiety levels is done by summing the scores, with the results: <14 = no anxiety, 14-20 = mild anxiety, 21-27 = moderate anxiety, 28-41 = severe anxiety, 42-52 = very severe anxiety.

RESULT

General Data

Table 1. General Data of Respondents in the Study on Anxiety Levels of Diabetes Mellitus Patients with Diabetic Foot Ulcers at RSUD Dr. Soedono April – May 2024 (n=30)

Demographic Characteristics	Frequency	Percentage
Age (Years)		
30-50	9	30
51-70	16	53,3
71-90	5	16,7
Gender		
Male	12	40
Female	18	60
Ulcer Grade		
1	9	30
2	10	33,3
3	4	13,3

Demographic Characteristics	Frequency	Percentage
4	5	16,7
5	2	6,7

Based on Table 1, it is noted that more than half, 53.3% (16 respondents), are aged 51-70 years, and over half, 60% (18 respondents), are female. Less than half, 33.3% (10 respondents), have a wound severity grade of 2.

Table 2. Anxiety Levels of Respondents in the Study on Anxiety Levels of Diabetes Mellitus Patients with Diabetic Foot Ulcers at RSUD Dr. Soedono April – May 2024 (n=30)

Anxiety Levels	Frequency	Percentage
No Anxiety	14	46,7
Mild Anxiety	7	23,3
Moderate Anxiety	8	26,7
Severe Anxiety	1	3,3

Based on Table 2, it is observed that less than half, 46.7% (14 respondents), experienced no anxiety, while 1 respondent (3.3%) experienced severe anxiety.

Table 3. Crosstabulation of Anxiety and Gender in Diabetes Mellitus Patients with Diabetic Foot Ulcers at RSUD Dr. Soedono April – May 2024 (n=30)

Anxiety Levels	Gender			
	Male		Female	
	F	%	F	%
No Anxiety	6	20	8	26.7
Mild Anxiety	2	6.7	5	16.7
Moderate Anxiety	4	13.3	4	13.3
Severe Anxiety	0	0	1	3.3

Based on Table 3, it is noted that a small proportion of female patients experienced severe anxiety, with a percentage of 3.3%.

Table 4. Crosstabulation of Anxiety and Wound Severity in Diabetes Mellitus Patients with Diabetic Foot Ulcers at RSUD Dr. Soedono April – May 2024 (n=30)

Anxiety Levels	Ulcer Grade									
	1		2		3		4		5	
	F	%	F	%	F	%	F	%	F	%
No Anxiety	6	20	4	13.3	3	10	1	3.3	0	0
Mild Anxiety	3	10	3	10	1	3.3	0	0	0	0
Moderate Anxiety	0	0	3	10	0	0	3	10	2	6.7
Severe Anxiety	0	0	0	0	0	0	1	3.3	0	0

Based on Table 4, it is noted that 1 patient with a wound severity grade of 4, representing 3.3%, experienced severe anxiety.

Table 5. Crosstabulation of Anxiety and Age in Diabetes Mellitus Patients with Diabetic Foot Ulcers at RSUD Dr. Soedono April – May 2024 (n=30)

Age	Anxiety Levels							
	No Anxiety		Mild Anxiety		Moderate Anxiety		Severe Anxiety	
	f	%	f	%	f	%	f	%
30-50	4	13.3	3	10	2	6.7	0	0
51-70	6	20	4	13.3	5	16.7	1	3,3
71-90	4	13.3	0	0	1	3.3	0	0

Based on Table 5, it is noted that a small proportion of patients aged 51-70 years experienced severe anxiety, with a percentage of 3.3%.

DISCUSSION

Based on the research, found that female had severe anxiety. This finding is consistent with previous study that patients with diabetic foot ulcers experiencing anxiety were female (11). Additionally, significant differences between male and female diabetes mellitus patients, with females showing higher levels of anxiety compared to males (12). Females are known to be more sensitive, and hormonal changes affecting their emotions often lead to increased fear, worry, and higher anxiety levels. Females are also more concerned with their physical appearance (12). Females are at greater risk for Type II Diabetes due to a higher likelihood of increased body mass index, monthly cycle syndrome, and post-menopausal changes, which contribute to greater fat accumulation due to hormonal processes (13). The researcher believes that differences in brain function and hormones in females related to reproduction, such as menstruation, pregnancy, and menopause, increase the risk of developing Type II Diabetes. Additionally, females are concerned with their physical appearance, and when experiencing diabetes, they may encounter physical changes, such as difficult-to-heal wounds, which can lead to decreased self-confidence and excessive anxiety.

Based on the research findings, it was observed that patients with a wound severity grade of 4 experienced severe anxiety. This result is consistent with a study that showed less than half of the patients had wound grades 3 and 4, with more than half experiencing mild anxiety and less than half experiencing severe anxiety (14). Additionally, a study indicated that a correlation between wound severity and the distress experienced by ulcer patients (15). Distress or anxiety in diabetes mellitus patients can weaken the immune system and worsen wound conditions. Thus, as the severity of the wound increases, the level of stress also tends to increase.

The researcher assumes that the severity of diabetic foot ulcers impacts physical conditions, such as foot abnormalities, pain, infections, and potential amputations, which can prolong the wound healing process. This prolonged healing can affect psychological well-being, leading to anxiety. The extended period of wound care and healing can cause patients to feel frustrated, dissatisfied, insecure, fearful, and helpless. The higher the severity or extent of the wound, the greater the stress experienced.

Additionally, the data revealed that a small proportion of patients aged 51-70 years experienced severe anxiety. According to prior study, patients over the age of 45 have decreased skin elastin and reduced collagen regeneration due to decreased cellular productivity, which slows wound healing and increases susceptibility to bacterial infections (16). Moreover, individuals over 45 years old are 11.183 times more likely to develop diabetes mellitus (17). Individuals under 50 years of age are considered to be in their productive years (18). When individuals under 50 years old develop a disease that poses risks, they may experience anxiety due to fears that the disease might affect their daily activities (19). A study showed that a relationship between age and anxiety (20).

The researcher argues that age is a significant risk factor for developing diabetes mellitus or diabetic foot ulcers. One factor associated with anxiety levels in diabetes mellitus patients is age. As patients grow older, they may face limitations or difficulties in performing daily activities. This not only relates to decrease physical function leading to complications but also to fear and anxiety regarding insulin therapy or the pain associated with it.

CONCLUSION

Based on the research conducted, the researcher concludes that there is a range of anxiety, from mild to severe, among diabetes mellitus patients with diabetic foot ulcers. This is related to factors such as age, wound severity, and the patient's age, all of which impact the patient's psychological condition and trigger anxiety.

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