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THE RELATIONSHIP BETWEEN STRESS LEVELS AND BLOOD SUGAR LEVELS IN ADULTS WITH DIABETES MELITUS IN THE WORKING AREA OF PERIUK JAYA COMMUNITY HEALTH CENTER, TANGERANG CITY.

Maharani Pertiwi[1], Dona Sartika[2]

[1]Applied Bachelor Study Program in Nursing, Poltekkes Kemenkes Banten, maharanipertw14@gmail.com
[2]Nursing Departement, Poltekkes Kemenkes Banten, dona.sartika@poltekkesbanten.ac.id

ABSTRACT

Background: Diabetes mellitus (DM) is a chronic metabolic disorder characterized by increased blood glucose levels. DM often experiences significant emotional impacts. As a result, compliance with a healthy lifestyle becomes low. Stress can trigger increased levels of the hormone cortisol which functions to regulate glucose levels. DM sufferers can trigger stress which can be characterized by disorders in controlling blood glucose levels, symptoms such as polydipsia, polyphagia, fatigue, and excessive drowsiness. Intellectual stress can be characterized by difficulty concentrating, decreased memory, chaotic thoughts, and a tendency to daydream excessively. Research Objective: To determine the Relationship between Stress Levels and Aggregate Blood Sugar Levels in Adults with Diabetes Mellitus in the Periuk Jaya Health Center Work Area, Tangerang City. Research Method: This study uses a quantitative approach with a purposive sampling technique with 143 respondents. Data collection was carried out using a 14-question DASS questionnaire instrument. Research Results: The results of the statistical test showed a significant value of 0.000 < 0.05, which means that there is a relationship between stress levels and aggregate blood sugar levels in adults with diabetes mellitus. Conclusion: The results of this study indicate that stress levels affect blood sugar levels and can therefore influence the risk of complications of diabetes mellitus.

Keywords: Adults, Blood Sugar Levels, Stress Levels

INTRODUCTION

Many people remain unaware of the potential problems arising from diabetes mellitus. The kidneys, nerves, and cardiovascular system are among the organs at risk of damage due to poorly controlled diabetes. High blood sugar levels are a hallmark of diabetes mellitus, a metabolic disorder that can persist for years (Safira, 2022). Diabetes mellitus is frequently found in adults and requires routine medical monitoring as well as patient education to facilitate independent self-care (Maria, 2021).

The International Diabetes Federation (IDF) notes that the disease affects one in ten people worldwide and causes 6.7 million deaths annually (IDF, 2021). According to the Indonesian Health Survey (SKI), based on physician diagnoses, 877,530 individuals in Indonesia suffer from diabetes mellitus (SKI, 2023). In 2023, the number of diabetes mellitus cases in Banten Province was recorded at 249,564, while Tangerang City had approximately 93,500 cases (Banten, 2023). At the Periuk Jaya Community Health Center (Puskesmas) in Tangerang City, 193 people were affected by diabetes mellitus as of January 2025 (Periuk, 2025).

Individuals with diabetes mellitus (DM) often experience significant emotional impacts. Many deny their condition, making it difficult to accept reality; consequently, adherence to a healthy lifestyle often suffers. Furthermore, patients are prone to frustration and disappointment due to the numerous rules they must follow. This dissatisfaction intensifies when they feel they have undergone various therapies without achieving meaningful results in lowering blood glucose levels. This situation creates a difficult psychological journey for DM patients, potentially leading to further complications.

Stress has a profound impact on blood sugar levels. In individuals experiencing stress, the endocrine system can be disrupted, causing blood sugar levels to rise continuously.

MATERIALS AND METHODS

This study is cross-sectional in nature and employs a quantitative methodology with a descriptive-correlational approach. The primary objective of the study is to determine the correlation between stress levels (independent variable) and blood sugar levels (dependent variable) using data collected at a single point in time. In the context of quantitative research, the results obtained are characterized by a systematic process of measurement and quantification.

RESULTS AND DISCUSSION

Table 1 Frequency Distribution of Stress Levels

No.	Stress Level	Frekuensi	Presentase
1.	Normal	4	2,8%
2.	Light	2	1,4%
3.	Moderate	119	83,2%
4.	Severe	18	12,6%
	Total	143	100%

Table 1 shows that the majority of respondents in the working area of the Periuk Jaya Community Health Center, Tangerang City, experienced a moderate level of stress, with a percentage of 83.2%.

Tabel 2 Frequency Distribution of Blood Sugar Levels

Total blood sugar	Frekuensi	Presentase
Normal	7	4,9%
Hiperglikemi	136	95,1%
Level	143	100%

Table 2 shows that the majority of respondents in the working area of the Periuk Jaya Community Health Center, Tangerang City, are unable to control their blood glucose levels, with the percentage reaching 95%.

This study employed the Spearman Rank test. Statistical analysis revealed a p-value of 0.000 ($p < 0.05$), indicating a relationship between stress levels and blood glucose levels. This suggests that stress levels can trigger an increase in blood sugar.

Research by Izzati (2024) identified a link between stress levels and blood sugar levels, while a study by Putra et al. (2023) demonstrated an association between moderate stress and blood sugar levels. Ludiana (2022) found that patients with diabetes mellitus exhibited high blood sugar levels corresponding to their stress levels; complications can arise if blood sugar remains uncontrolled.

Studies have found that poorly managed stress can worsen blood sugar control. Therefore, diabetes prevention and management programs should incorporate stress management strategies. To mitigate the risk of dangerous blood sugar spikes, a holistic approach-encompassing stress management, dietary changes, and increased physical activity-is recommended.

CONCLUSION

The frequency distribution of stress levels shows that 4 respondents (2.8%) experienced normal stress, 2 respondents (1.4%) experienced mild stress, 119 respondents (83.2%) experienced moderate stress, and 18 respondents (12.6%) experienced severe stress. The frequency distribution of blood sugar levels shows that most respondents were unable to control their blood sugar levels, namely 136 respondents (95.1%). A significant relationship between stress levels and adult blood sugar levels in the working area of the Periuk

Jaya Community Health Center, Tangerang City, with a significance value of 0.000 (p-value <0.05 and a coefficient value of r = 0.431).

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