



RELATIONSHIP BETWEEN COPING MECHANISMS AND STRESS LEVELS IN PATIENTS WITH DIABETES MELLITUS

Mira Aulia*, Rosliana Dewi, Rani Fitriani Arifin

Bachelor of Nursing Program, Sekolah Tinggi Ilmu Kesehatan Sukabumi, Jln Karamat, Karamat, Gunungpuyuh, Sukabumi, Jawa Barat 43122, Indonesia

*miraaulia324@gmail.com

ABSTRACT

The term "silent killer" is frequently used to describe diabetes mellitus (DM). Many sufferers of this illness are oblivious to the issue, which leads them to a point when major issues arise in the body's systems or different organs start to be impacted. This study sought to ascertain the connection between stress levels and coping strategies in individuals with diabetes mellitus. This was a cross-sectional, correlational, quantitative research. All diabetes mellitus patients in Cikondang Village, which is part of the Tipar Public Health Center's (UPTD Puskesmas) service area in Sukabumi City, made up the population. A total sample of sixty respondents was chosen. The instruments used were the Brief Coping Inventory for the coping mechanisms variable and the Perceived Stress Scale (PSS-10) for the stress level variable. The chi-square test was used in statistical analysis. The findings showed that most people had minor stress and used adaptive coping strategies. In patients with diabetes mellitus, coping strategies and stress levels are related, according to chi-square analysis, which produced a p-value of 0.016 ($p < 0.05$). Conclusion: Patients with diabetes mellitus in Cikondang Village, within the service area of the Tipar Public Health Center (UPTD Puskesmas) in Sukabumi City, exhibit a correlation between coping strategies and stress levels.

Keywords: adaptive; coping mechanisms; diabetes mellitus; maladaptive; stress levels

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INTRODUCTION

Noncommunicable diseases (NCDs) are the leading cause of death in Indonesia, accounting for 60.6% of all deaths. Among these diseases, diabetes mellitus (DM) accounts for 8.5% of all deaths (Arsad et al., 2023). Nowadays, diabetes mellitus poses a threat to global health. Diabetes affects 537 million individuals between the ages of 20 and 79. According to Dewi (2024), this number is expected to rise to 643 million by 2030 and 783 million by 2024. Indonesia is one of the developing countries where diabetes mellitus is quite common. Based on blood glucose level testing, 1.7% of individuals aged 15 and older had diabetes mellitus, according to a research on the results of the 2023 Indonesian Health Survey (SKI). The aforementioned data indicate that a sizable portion of Indonesians suffer from diabetes mellitus, which poses a serious problem that cannot be resolved by specialists, subspecialists, or even the medical community as a whole (Safariyah et al., 2025).

Diabetes mellitus (DM) is a group of metabolic illnesses characterized by elevated blood glucose levels caused by either insufficient insulin synthesis, insufficient insulin action, or both (Soelistijo et al., 2024). According to Dewi (2022), there are several categories of diabetes mellitus, including gestational diabetes, Type I diabetes, Type II diabetes, and others. Type II diabetes is the most common of them, particularly in people over 30. Approximately 90% of all instances of diabetes worldwide are type II, which is primarily caused by obesity and inactivity. The increasing prevalence of diabetes mellitus can have a wide-ranging effect on public health, including social, emotional, physical, and economic dimensions (International Diabetes Federation, 2024). Common psychological impacts include tension, anxiety, and depression (Yarnita et al., 2023).

People employ coping methods as a way to cope with stressful circumstances (Lia, 2024). Coping methods are the efforts a person makes to manage stress, solve problems, and adapt to various changes and potentially hazardous situations. According to Dewi et al (2023), these programs focus on managing internal and external constraints that may impact an individual's ability. Effective coping mechanisms can lead to long-term adaptation, which manifests as improved conditions and new habits. However, ineffective coping mechanisms can lead to maladaptive behaviors that might put the individual, others, and the environment in danger (Tunik et al., 2022). This study aims to determine the relationship between stress levels and coping mechanisms in people with diabetes mellitus.

METHOD

This study is quantitative, cross-sectional, and uses a correlational approach. From March 12 to 18, 2026, the study was conducted in Cikondang Village, which is a part of the Tipar Community Health Center's (UPTD Puskesmas) Sukabumi City service area. The population of the research consisted of 60 patients with type 2 diabetes mellitus in Cikondang Village, which is part of the Sukabumi City service area of the Tipar Community Health Center (UPTD Puskesmas). Since total sampling was the sampling approach used in this study, the whole population that satisfied the requirements was included in the research sample. The study's inclusion criteria were patients with diabetes mellitus who were willing to participate as responders, who were at least eighteen years old, who could speak, and who had had the condition for at least a year. The research population consisted of sixty individuals. In this study, the chi-square test with a significance threshold of $\alpha=0.016$ was employed for analysis. The assessment tool used in this study was a Likert scale-based questionnaire. The questionnaire used for the coping strategy variable was the Brief Coping Inventory, which was developed by Carver (1997) and modified by Yusuf et al. (2010) in (Lia S, 2024). Because this is a standardized instrument, the validity test employs previous research with an internal consistency or Cronbach's alpha value of 0.868 and a reliability value of 0.799. Stress was measured using the 10-item Perceived Stress Scale (PSS-10); the results of the reliability test showed a Cronbach's alpha of 0.81, indicating strong instrument consistency. The data were analysed using SPSS version 22.0. The analysis included a description of the respondents' characteristics and univariate analysis, presented in frequency distribution tables. Bivariate analysis was performed using the chi-square test. The level of statistical significance used in this study was 0.05. STIKes Sukabumi (ethics number: 001607/KEP STIKES SUKABUMI/2026) granted ethical approval for this study, and the Tipar Community Health Center (UPTD Puskesmas) in Sukabumi City's Cikondang Subdistrict granted permission to conduct research.

RESULT

The research results are shown in Table 1, which also includes information on the respondents' age, gender, employment, level of education, and duration of diabetes. These characteristics were derived from the questionnaire responses. the relationship between diabetics' coping mechanisms and stress levels.

Table 1 shows that the majority of respondents were female (36, or 59%), between the ages of 41 and 60 (33, or 54.1%), had completed high school (25, or 41%), were unemployed (43, or 70.5%), and had been suffering for more than a year (51, or 83.6%).

Table 1.
Profile of Respondent Characteristics

Respondent characteristics	f	%
Age		
18-40 years	7	11,5
41-60 years	33	54,1
>60 years	21	34,4
Gender		
Male	25	41
Female	36	59
Education		
Elementary School	17	27,9
Middle School	13	21,3
High School	25	41
Higher Education	6	9,8
Employment		
Employed	18	29,5
Not Working	43	70,5
Duration of Illnes		
1 year	10	16,4
≥ year	51	83,6

Table 2.
Univariat Analysis

Respondent characteristics	f	%
Coping Mechanisms		
Adaptive	33	54,1
Maladaptive	28	45,9
Stress Level		
Mild	32	52,5
Severe	29	47,5

According to table 2, the majority of respondents—33 individuals, or 54.1%—showed adaptive coping techniques when it came to the coping mechanism variable. In terms of the stress level variable, 32 respondents (52.5%) reported feeling mildly stressed.

Table 3.
Bivariate Analysis

Coping Mechanisms	Stress Level		%	Total	%	<i>P-Value</i>
	Mild	Severe				
Adaptive	22	10	31,3	33	100	0.016
Maladaptive	11	18	62,1	28	100	

Table 3 shows that most patients with diabetes mellitus who used adaptive coping strategies had mild stress levels (22 individuals, or 68.8%), while most patients with diabetes mellitus who used maladaptive coping strategies had severe stress levels (18 individuals, or 62.1%).

DISCUSSION

Diabetes mellitus is a long-term metabolic disease that has an impact on patients' emotional and physical well-being. Stress is one of the psychological problems that diabetics frequently face because of the demands of long-term medical care and the necessary lifestyle changes (Mirmira et al., 2023). Diabetes and stress are intimately linked because they may worsen a patient's condition by affecting one another. Additionally, uncertainty about diabetes mellitus may cause stress in those who have it (Alva et al., 2022). Therefore, effective coping mechanisms are crucial for assisting patients in managing their stress. The results of the study indicate a significant relationship between coping mechanisms and stress levels in diabetes mellitus patients. The majority of respondents reported mild stress (52.5%) and employed adaptive coping mechanisms (54.1%). However, the bivariate analysis showed that respondents under mild stress were more likely to employ adaptive coping methods (68.8%), whereas those under severe stress tended to utilize maladaptive coping

strategies (62.1%), with a p-value of 0.016. These findings imply that when stress levels increase, people are more likely to employ insufficient coping mechanisms (Soelistijo et al., 2024).

The findings of this study are consistent with a study by Eshete et al (2023) that discovered coping strategies are strongly associated with emotional distress in diabetic patients, and that the use of inappropriate coping strategies is associated with higher levels of stress and depression (Embaye et al., 2024). This study suggests that prolonged stress can affect the metabolic system and worsen the progression of diabetes. Stress can also have an impact on how patients feel about their treatment, such as by making them less likely to take their medications, exercise, and eat healthily. Coping mechanisms are essential for managing stress in diabetes patients. Research indicates that prolonged stress might affect the metabolic system and worsen the progression of diabetes. Stress can also have an impact on how patients feel about their treatment, such as decreasing their likelihood of adhering to their diet, exercise, and medication schedules. Coping mechanisms are essential for managing stress in people with diabetes. Research indicates that effective coping promotes more effective disease management (Mirzazadeh-Qashqaei et al., 2023). Additionally, another study shows a positive correlation between improved coping skills and improved self-care practices among diabetes patients (Hapunda, 2022).

Consequently, the study's findings demonstrate that coping strategies have a major impact on the stress levels that individuals with diabetes mellitus encounter. High levels of stress are more common in patients who use maladaptive coping strategies than in those who use adaptive coping strategies. It is essential to use therapies that concentrate on creating coping mechanisms, such as providing education, counseling, and social support, in order to help patients manage stress and improve their quality of life.

CONCLUSION

Stress levels and coping mechanisms are correlated among people with diabetes mellitus in the Cikondang community within the service area of the Tipar Community Health Center (UPTD Puskesmas) in Sukabumi City.

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