THE EFFECT OF BUTTERFLY HUG TECHNIQUE ON ANXIETY IN PATIENTS WITH DIABETES MELLITUS AT THE HEALTH CENTER GARUDA PEKANBARU

Lia Mustika Pratama[1*], Emulyani[1], Dini Maulinda[1], Veni Dayu Putri[1]
[1]Payung Negeri Health Institute Pekanbaru, Faculty of Nursing, Professional Nurse Program, Pekanbaru, Indonesia
***Corresponding author: Liaacanss99@gmail.com**

Abstract

Diabetes mellitus can cause anxiety that impacts treatment adherence and glycemic control. The Butterfly Hug technique, a relaxation method in EMDR therapy, is believed to reduce anxiety in patients with diabetes mellitus. This study aims to analyze the effect of the Butterfly Hug technique on anxiety of patients with diabetes mellitus at the Garuda Pekanbaru Health Center. This research was conducted on January 27, 2025 at Garuda Health Center Pekanbaru, used a pre-experimental design with a One-Group Pretest-Posttest Design approach. A sample of 16 patients was selected using purposive sampling. The research instrument used the Butterfly Hug relaxation technique SOP and the Zung Self-Rating Anxiety Scale (ZSAS) questionnaire. ZSAS scores were categorized as normal (20-44), mild to moderate anxiety (45-59), severe anxiety (60-74), and very severe anxiety (75-80). The Butterfly Hug technique was given for 10 minutes according to the SOP. Univariate analysis included respondent characteristics: gender, age, education level, occupation, duration of diabetes mellitus, previous history of disease, and comorbidities. Bivariate analysis used Shapiro-Wilk normality test and Paired T-Test hypothesis test. The results showed the average anxiety score before the intervention was 57.88 (SD = 6.076) and after the intervention decreased to 36.06 (SD = 8.306). Paired T-Test test showed p = 0.024 (p < 0.05), which means there is a significant effect of Butterfly Hug technique on anxiety of diabetes mellitus patients. Conclusion: The Butterfly Hug technique is effective in reducing anxiety in patients with diabetes mellitus. Recommendation: compare this technique with other relaxation methods and consider lifestyle factors and social support in managing patient anxiety.

Keywords: Diabetes Mellitusn; Axiety; Butterfly Hug

INTRODUCTION

Diabetes mellitus is a global health problem that continues to increase in prevalence every year. This disease not only has a physiological impact in the form of impaired glucose metabolism but also creates a significant psychological burden for sufferers, particularly anxiety. Based on data from the World Health Organization (WHO), in 2019 there were more than 463 million adults living with diabetes, a number projected to increase to 700 million by 2045 [2]. In Indonesia, the prevalence of diabetes in the population aged over 15 years reached 10.9% in 2018, placing the country 7th globally in terms of the number of people with diabetes [13]. Patients with diabetes mellitus (DM) often experience emotional distress due to concerns about disease complications (e.g., neuropathy, cardiovascular disease), uncertainty about treatment, and the pressure of strict lifestyle changes [25]. Research indicates that about 40% of DM patients experience anxiety symptoms, which can negatively affect their medication adherence and glycemic control [27]. Prolonged anxiety can trigger elevated levels of stress hormones, such as cortisol, potentially exacerbating insulin resistance, thus creating a negative cycle between psychological stress and blood sugar control [12]. Given the high prevalence and impact of anxiety, interventions that provide psychological support are urgently needed

[12]. One innovative, simple, and non-pharmacological approach for anxiety management is the Butterfly Hug Technique. This relaxation method, introduced as part of EMDR therapy, involves bilateral stimulation through self-tapping on the chest/arms to create a sense of relaxation, stimulate the parasympathetic nervous system, and facilitate the processing of negative emotions [4]. This technique is believed to respond to the production of calming hormones like oxytocin and endorphins [15, 23]. Preliminary studies at the Garuda Pekanbaru Health Center found that 5 out of 8 interviewed DM patients felt anxious, restless, and experienced difficulties in controlling emotions and sleeping. Therefore, this study aims to measure the Effect of Butterfly Hug Technique on Anxiety of Diabetes Mellitus Patients at Garuda Pekanbaru Health Center.

RESEARCH METHODS

This study employed an experimental quantitative design to measure the effect of the Butterfly Hug technique on anxiety in patients with diabetes mellitus. The research design used a pre-experimental approach with a One-Group Pretest-Posttest Design, comparing anxiety levels in the same group before and after the intervention. The study was conducted at the Garuda Health Center in Pekanbaru, Riau province, and was carried out from September 2024 to February 2025.

The study population consisted of all newly diagnosed patients with diabetes mellitus (last 6 months) who underwent outpatient care at the center. The total number of newly diagnosed patients in the last six months was 40. The calculated sample size for this study was 16 people. Sampling Method: Non-probability sampling using the consecutive sampling technique was employed. This involved selecting all individuals encountered who met the inclusion criteria until the required sample size of 16 was achieved. Inclusion Criteria: Patients diagnosed with DM by medical personnel, having measurable anxiety levels using standard instruments, and willing to follow the Butterfly Hug technique in the research session. Exclusion Criteria: Patients unable to understand or perform the Butterfly Hug technique (e.g., due to physical impairment of the hands or upper body) or those unwilling to give informed consent [18].

Data Collection Instrument: The Zung Self-rating Anxiety Scale (ZSAS) was used, a standardized questionnaire consisting of 20 statements with a Linkert scale response [11, 20]. Scoring was categorized as: Normal/not anxious (score 20–44), Mild anxiety (score 45–59), Moderate anxiety (score 60–74), and Severe anxiety (score 75–80). Intervention Procedure: An initial measurement was conducted using the pre-test (ZSAS). The Butterfly Hug technique was then applied for 5–10 minutes. Finally, anxiety was re-measured using the post-test (ZSAS) to assess changes. Statistical Analysis: To determine the difference in anxiety levels between the pre-test and post-test scores, a statistical test using the Paired T-test (dependent t-test) was performed

RESEARCH RESULTS

A total of 16 DM patients participated as respondents in this study. The frequency distribution of demographic characteristics and the statistical comparison of anxiety scores are presented below.

Table 1. Frequency Distribution of Demographic Characteristics of Respondents (n=16)

characteristics	frequency (f)	presentation (%)
Age		
19-44 years (Mature)	3	18,8
45-59 years old (Pre-elderly)	11	68,8
>60 years (Elderly)	2	12,5
Total	**16**	**100**
Gender		
Male Female	- 16	- 100,0
Total	16	100
Education level		
Not graduated from elementary school	1	6,3
SD	4	25,0
SMP	2	12,5
SMA	9	56,3
Total	**16**	**100**
Jobs		
Labor	3	18,8
HOUSEWIFE	11	68,8
Self-employed	2	12,5
Total	**16**	**100**
Duration of DM		
1 month	3	18,8
2 months	2	12,5
3 months	1	6,3
4 months	3	18,8
5 months	1	6,3
6 months	6	37,5
Total	**16**	**100**
Disease History		
Hypertension	5	31,3
ASMA	-	-
DM	1	6,3
Heart disease	-	-
UTI	-	-
None	10	62,5
Total	**16**	**100**
Other Comorbidities		
Hypertension	4	25,0
Heart disease	-	-
Stroke	-	-
Cataract	1	6,3
Neuropathy	7	43,8
None	4	25,0
Total	**16**	**100**

(Source: Primary Data 2025)

Table 2. Mean Anxiety of DM Patients Before and After Intervention (n=16)

	Mean	SD	Min-Max	Δ mean
Pre-test	57,88	6,076	51-70	21,82
Pots-test	36,06	8,306	24-54	

(Source: Primary Data 2025)

The mean anxiety score before the intervention (pre-test) was 57.88, which falls into the Mild Anxiety category (45–59). After the intervention (post-test), the mean score decreased significantly to 36.06, which falls into the Normal/Not Anxious category (20–44). The total decrease in the mean score was 21.82.

Table 3. Butterfly Hug Technique on Anxiety in Diabetes Mellitus

Anxiety	Mean ± SD	(Min-Max)	p-*value*
Pre-Test	57,88 ± 6,076	51-70	0.024
Post-Test	36,06 ± 8,306	24-54	

(Source: Primary Data 2025)

The hypothesis testing using the dependent t-test yielded a p-value of 0.024.

DISCUSSION

The statistical analysis result, where the p-value (0.024) is smaller than the significance level (0.05), indicates a significant difference between anxiety levels before and after the application of the Butterfly Hug technique. This finding leads to the rejection of the null hypothesis (H0), confirming that the Butterfly Hug technique is effective in reducing anxiety in patients with diabetes mellitus at Garuda Pekanbaru Health Center.

This decrease is supported by the theory that the Butterfly Hug, as a bilateral stimulation technique, stimulates the parasympathetic nervous system, thereby inducing a relaxation response and reducing stress [22].[6] The technique also aids in emotional stabilization, promoting an internal sense of control and focus [10]. The significant mean decrease of 21.82 (shifting the average patient from Mild Anxiety to Normal/Not Anxious) demonstrates the practical effectiveness of this simple, non-pharmacological method.

This outcome aligns with previous research, such as that by Naspufah (2022) cited in the paper, which also found a significant decrease in anxiety following the Butterfly Hug intervention (p=0.000). The mechanism is attributed to self-touch, which psychologically fosters a sense of safety and improves emotion regulation [23]. Furthermore, the Butterfly Hug is known to stimulate the release of calming hormones like oxytocin and endorphins [15, 23], directly counteracting the anxiety-induced stress hormones like cortisol, which are known to worsen insulin resistance [12]. Given that the majority of respondents were pre-elderly, female, and housewives, groups often facing significant caregiving and emotional burdens [26], a simple, easily accessible self-calming technique like the Butterfly Hug is highly valuable. The presence of complications like neuropathy in a large portion of the sample further highlights the clinical need for effective anxiety management, as fear of complications is a primary anxiety driver [27]. In essence, the intervention successfully breaks the negative cycle between psychological distress and the physiological challenges of DM management.

CONCLUSION

Based on the results of the research conducted on 16 DM patients at the Garuda Pekanbaru Health Center, the following conclusions are drawn:

1. The majority of the respondents were pre-elderly (45–59 years old), female (100%), and working as housewives (68.8%).
2. The mean anxiety level before the Butterfly Hug intervention (pre-test) was 57.88 (Mild Anxiety).
3. After the intervention, a significant decrease was observed, with the mean anxiety level dropping to 36.06 (Normal/Not Anxious).
4. The statistical test yielded a p-value of 0.024 ($p < 0.05$), confirming that the Butterfly Hug Technique is effective in significantly reducing anxiety in patients with diabetes mellitus.

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