

## Application of Combined Self-Surrender Exercises and Deep Breath Relaxation to Lower Blood Sugar Levels Elderly Diabetes Mellitus Type

Eva Susanti <sup>1</sup>, Rizki Sri Haryanti <sup>2</sup>, Jawiyah <sup>3</sup>

<sup>1</sup> Department of Medical Surgical, Poltekkes Kemenkes Palembang, Indonesia

<sup>2</sup> Department of Nursing Laboratory, Poltekkes Kemenkes Palembang, Indonesia

<sup>3</sup> Departemen anak, Poltekkes Kemenkes Palembang, Indonesia

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### ABSTRACT

Diabetes is already considered an epidemic and by 2025, it is estimated that around 380 million people, or 7.3% of the adult population in the world will be affected by this disease. Diabetes Atlas 2012 (International Diabetes Federation) lists that the estimated population of Indonesia over 20-79 years is 7.6 million people and the assumption of DM prevalence is 5.14%. Indonesia ranks 8th largest in the number of people with diabetes mellitus. The order above is China (92.3 million), India (63.0 million), the United States (24.1 million), Brazil (13.6 million), the Russian Federation (12.7 million), and Mexico (10.6 million). Problems faced by elderly Posyandu participants in the working area of the Kerinjing Health Center, Kerinjing Village, Ogan Ilir Regency, Palembang.: Never received information about Diabetes Mellitus and non-pharmacological management, especially the combination of self-surrender exercises with deep breath relaxation to lower blood sugar in the elderly with Diabetes Mellitus, Never been taught self-surrender exercises and deep breath relaxation in lowering blood sugar levels in the elderly Diabetes Mellitus At the Elderly Posyandu, the working area of the Kerinjing Health Center is Kerinjing Village, Ogan Ilir Regency, Palembang. The approach methods used to achieve the Output Target are determined, namely: Education (Counseling), Demonstration of Self-Resignation Training, and Deep Breath Relaxation in Lowering Blood Sugar Levels of Diabetes Mellitus Elderly. The application of the Combination of Self-Resignation Exercises and Deep Breath Relaxation is carried out routinely in the elderly with Diabetes Mellitus there is a decrease in Blood Sugar levels by involving cadres and elderly families who control the implementation of the exercise.

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### Corresponding Author:

Eva Susanti  
Poltekkes Kemenkes Palembang  
Email: [evasusanti@poltekkeskemenkespalembang.ac.id](mailto:evasusanti@poltekkeskemenkespalembang.ac.id)

### INTRODUCTION

Diabetes mellitus is a group of heterogeneous disorders characterized by elevated levels of glucose in the blood or hyperglycemia. The body's ability to react to insulin may decrease, or the pancreas can stop insulin production altogether (Brunner and Suddarth, 2002).

Relaxation therapy which is part of non-pharmacological therapy includes various of which are progressive muscle relaxation (PMR), Benson's relaxation, autogenic relaxation, deep breath relaxation,

cognitive imagery, mental imagery, diaphragmatic breathing, and systemic relaxation where all types of relaxation have been tested through various studies to lower blood pressure, anxiety, lower blood sugar and reduce pain either due to disease or post-surgery, ( Greenberg, 2002). The relaxation response will return the body to a balanced state. The pupils, hearing, blood pressure, heart rate, breathing, and circulation return to normal, and the muscles relax again.

From the results of Susanti Research, E 2014, the provision of self-surrender exercises can effectively reduce blood sugar levels and stress levels in Diabetes Mellitus patients. The results of the study found that the effect of warm compresses on the pain of rheumatoid arthritis patients was very visible, as evidenced by all respondent's reduced pain after being given warm compresses. Pain decreases from moderate pain to mild pain. This happens because all respondents get the effect of giving warm compresses, which is to facilitate blood circulation and provide a sense of comfort, it causes the distribution of acids and foodstuffs to enlarged cells so that the cells in the blood vessels increase their activity, which will reduce pain, therefore warm compresses are effective for reducing the pain of rheumatoid arthritis patients so that it is useful as one of the therapies to reduce patient pain rheumatoid arthritis. ( Doliarn'do, et al., 2018)

Relaxation with dhikr is a method used in the hope of reducing stress in patients with diabetes mellitus. Relaxation of breathing helps reduce anxiety by regulating the pace and depth of breathing (Schaffer, 2000).

The incidence of type II diabetes mellitus in 2018 increased to 8.5% compared to 2013, which was 6.9%. Diabetes mellitus (DM) type II which is not controlled by blood sugar levels can cause physical and psychological complications. Diabetes mellitus can be accompanied by various metabolic disorders due to hormonal disorders, which cause various chronic complications in the eyes, kidneys, and blood vessels, accompanied by lesions on the basement membrane in examination with an electron microscope. (Brunner and suddarth, 2002).

Seeing complications in Diabetes mellitus can affect various organs, it is very important to do various prevention so that complications do not occur such as diet regulation, exercise or exercise, medication, blood sugar monitoring, and patient education including stress control. Relaxation therapy which is part of non-pharmacological therapy includes various of which are progressive muscle relaxation (PMR), Benson's relaxation, autogenic relaxation, deep breath relaxation, cognitive imagery, mental imagery, diaphragmatic breathing, and systemic relaxation where all types of relaxation have been tested through various studies to lower blood pressure, anxiety, lower blood sugar and reduce pain either due to disease or post-surgery, ( Greenberg, 2002). The relaxation response will return the body to a balanced state. The pupils, hearing, blood pressure, heart rate, breathing, and circulation return to normal and the muscles relax again.

Self-surrender training is a method that combines relaxation and remembrance with the focus of the exercise on breathing and the words contained in remembrance to evoke a relaxation response, where the onset of the relaxation response is expected to improve symptoms of stress or depressive symptoms so that it directly or indirectly affects blood sugar control (Asdie, 2005).

Self-surrender exercises as a complementary therapy can increase the motivation of recovering clients with long hospitalizations because patients can control their sense of comfort from themselves. Although pharmacological therapy is an important contribution to lowering vital signs and blood sugar levels, non-pharmacological therapies such as self-surrender exercises can provide physical and mental comfort for patients without going through invasive procedures. Complementary therapies are not stated to cure the disease but are stated to provide additional support for patients (Wright et al, 2002), Susanti. E, (2014)

## METHOD

The approach method used to achieve the Output Target was determined, with counseling (Education), and demonstration to elderly participants by providing self-surrender exercises and Deep breath relaxation in lowering blood sugar levels of Diabetes Mellitus elderly.

**Table 1. Data on elderly participants were collected through the application of a combination of LPD and deep breath relaxation**

NO	NAME	AGE	L/P	GDS before	GDS After
1	Ny.K	59 years old	P	323	200
2	New.A	47 years old	P	187	110
3	Ny.S	77 years old	P	117	100
4	Ny.St	78 years old	P	203	200

5	Ny.Sr	56 years old	P	114	112
6	Ny.M	62 years old	P	160	110
7	Ny.Z	67 years old	P	345	230
8	Ny.N	64 years old	P	340	200
9	Ny.Z	45 years old	P	254	180
10	Ny.N	44 years old	P	450	300
11	Tn. M	71 years old	L	115	105
12	Ny.W	52 years old	P	234	220
13	Ny.J	64 years old	P	243	211
14	Ny.L	45 years old	P	400	229
15	Ny.SS	54 years old	P	151	120
16	Ny.M	57 years old	P	234	200
17	Ny.M	67 years old	P	140	110
18	New.D	47 years old	P	344	270
19	New.E	43 years old	P	103	100
21	Ny.N	77 years old	P	450	231
22	Ny.U	62 years old	P	322	290
23	New.A	77 years old	p	340	235
24	Ny.R	60 years old	p	330	300
25	Ny.R	60 years old	p	400	360
26	Ny.RR	71 years old	p	350	350
27	Ny.Nt	58 years old	p	268	200
28	Ny.Ns	53 years old	p	300	145
29	Ny.Fr	77 years old	p	289	188
30	NY	69 years old	p	346	243

Source : Primary Data in 2023

## RESULTS

After explaining knowledge about Diabetes mellitus, and non-pharmacological management with self-surrender exercises, and Deep breath relaxation, participants were able to know and understand about Diabetes Mellitus and its management. Participants were also able to perform by demonstrating the action of combining self-surrender exercises with deep breath relaxation, to lower blood sugar in elderly diabetes mellitus independently. The Community Service Team taught how to perform a combination of surrender training with deep breath relaxation directly to elderly participants and posyandu cadres. By using SOPs that have been compiled. Application of a combination of self-surrender exercises and deep breath relaxation carried out once a week for three weeks to elderly participants with Diabetes Mellitus.

In the implementation of activity evaluation, the service team assists the elderly in carrying out actions combining self-surrender exercises with deep breath relaxation to lower blood sugar for the elderly with

diabetes mellitus by using a standard operational list of procedures for combining self-surrender exercises with deep breath relaxation. The participants were able to demonstrate the action. From the results of the evaluation of these activities, the elderly participants were able to carry out demonstrations independently while still being accompanied by cadres and other officers. To find out the next development, a WhatsApp group was created so that this activity could be monitored by the service team and posyandu cadres.

After the service team learned about the problems that existed in the working area of the Puskesmas Kerinjing Ogan Ilir regency, especially in the elderly posyandu. So the service team to the Kerinjing Health Center as a socialization partner and contracted for community service activities. Then the puskesmas and posyandu for the elderly facilitate community service activities which are carried out once a week for three weeks. Then an evaluation of the activities that have been carried out is carried out. Evaluation measurement after counseling and demonstration of self-surrender exercise with deep breath relaxation carried out by the service team. The results showed that the majority of participants had a good understanding of Diabetes Mellitus. By filling out the posttest questionnaire given. And the enthusiasm of elderly participants in carrying out demonstrations accompanied by the service team as well as students and posyandu cadre officers. Actions are carried out based on standard operating procedures (SOPs). The assistance team fills out a checklist on the SOP at every step in the SOP carried out by the elderly participants. The participants consisted of 30 elderly people who attended. However, the participants of this activity were also attended by elderly posyandu cadres and Kerinjing health center officers. In general, all participants showed activeness in asking questions and discussing and redemonstrating the act of combining self-surrender training with deep breath relaxation during the implementation process.

## CONCLUSION

After carrying out community service activities on the application of a combination of self-surrender exercises with deep breath relaxation to lower blood sugar in the elderly with Diabetes Mellitus at the elderly posyandu Kerinjing Health Center work area, Kerinjing Village, Ogan Ilir Regency, Palembang, there was an increase in knowledge and understanding of the combination of self-surrender exercises with deep breath relaxation to lower blood sugar in the elderly with Diabetes Mellitus and its management, Increased ability to perform (demonstrate) the act of resignation training with deep breath relaxation to lower blood sugar in the elderly with Diabetes Mellitus by the SOP that has been given, while still being accompanied by cadres and other officers. There was a decrease in blood sugar levels in elderly participants with diabetes mellitus type of feuding after doing a combination of self-paced exercises and regular deep breath relaxation. For continuous action so that the progress can be known, a WhatsApp group is created so that this activity can be controlled by the service team and elderly posyandu cadres.

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