
The Effectiveness of Relaxation Techniques to Decrease The Anxiety of Diabetes Mellitus Elderly Patients

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Abstract

This research aims to know the effectiveness of relaxation therapy in decreasing anxiety level of diabetes mellitus elderly patients. The research participants were seven elderly patients who obtained anxiety scale score in medium category and high category. The research design used small N sample experiment, ABA design. The instrument used was Depression Anxiety Stress (DASS) scale. The result The result of quantitative analysis used non-parametric statistics Wilcoxon and inspection visual graphic showing the existence of significant difference score between before and after with $Z = -2,371$ and $p = 0,018(p < 0,05)$, the existence of significant difference score before and after relaxation treatment with $Z = -2,371$ dan $p = 0,018(p < 0,05)$, and the existence of significant difference score between before and after following the training with $Z = -2,371$ and $p = 0,018(p < 0,05)$. Qualitative analysis was conducted by analyzing observation and interview data. The results obtained show that relaxation technique can decrease the anxiety level of each participant.

Keywords: Relaxation; anxiety; elderly; diabetes mellitus.

1. Introduction

Diabetes mellitus is the disease marked by blood glucose level exceeding normal limit (hyperglycemia) until causing the body lacks of insulin either absolute or relative [1,2].

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Diabetes Mellitus (DM) is certain metabolic disease group with hyperglycemia characteristics which occurs because of insulin secretion abnormality, insulin work or both of them [3]. The patients of diabetes disease significantly continues to increase every year. Diabetes mellitus is a group of symptoms emerging post patients caused by the existence of blood glucose increase as the effect of progressive insulin secretion decrease which occurs by insulin resistance [3]. The occurrence of insulin resistance followed by the decrease of intracellular reaction on diabetes mellitus patients causes insulin ineffective to stimulate the absorption of glucose in the tissue. To overcome insulin resistance and to prevent glucose formation in blood, there must be increase of total secreted insulin. The increase of higher and higher glucose level can cause complication [3]. The individual who cannot accept the fact that he/she suffers diabetes mellitus disease frequently shows various changes in their behavior and feeling such as the excessive feeling of not being strong anymore, anxiety, requested to be treated by other people and showing hostility attitude. Therefore, diabetes mellitus patients are frequently associated with psychosocial disorders such as depression, anxiety, and stressful stress [4]. The complications which frequently obtained in diabetes mellitus are diabetic, hyperglycemia, hypoglycemia, cardiovascular system, vision disorder stroke (retinopathy), kidney disorder caused by diabetic nephropathy, peripheral nerves (neuropathy), the tissue damage caused by neuropathy, and occurs wounds that do not heal on extremity until causing the feeling of anxiety [5]. Anxiety is certain condition which makes someone feel uncomfortable related to the feeling of uncertainty and helpless. This disorder can last long, felt heavier, and frequently repetitive. This condition will cause diabetes control to be more difficult [6]. The anxiety that emerges as the result of diabetes mellitus complication makes the patients assumed that their diseased cannot be healed. Lack of knowledge is one of factors which make patients experiencing anxiety. Until this will make the patients confused marked with the feeling of unsure, desperate, stressed, and doubt [7]. One of behavioral therapy done in this research is by using relaxation technique which is a technique of self control for regulating emotion and physics of the individual from anxiety, worry, stress, and others [8]. Physiologically, relaxation training gives relaxed response that can be identified through the decrease of blood pressure, heart beat, and increases skin resistance [9]. Basically, relaxation technique is included into behavioral therapy approach, with techniques being developed focusing on the repetitive components such as the words, voice, prayer phrase, body sensation or muscle activity [8]. The previous research about relaxation has showed the benefits in overcoming various health problem especially decreasing anxiety. The research result by Iriyanti, et. al. in 2018 shows the effect of breath relaxation therapy towards the decrease of anxiety on diabetes mellitus patients at Community Health Center (Puskesmas) Mayong I Jepara. This relaxation technique research had duration 2-3 hours and conducted in group. The techniques that would be trained in this research were in the form of: (1) deep breathing relaxation, henceforth called as Deep Breath Relaxation (RPD), (2) progressive muscle relaxation, henceforth called as progressive muscle relaxation (ROP), and (3) guided imagery relaxation, henceforth called as guided imagery relaxation (RIT). The first technique trained in relaxation technique training was RPD. This breathing relaxation has function for body relaxation by regulating the respiration regularly, slow, and deep because when someone feels stress or worry then the body will be tensed and the breathing will be short [10]. The second technique trained is ROP. ROP is the relaxation technique started from the movement relaxation of one muscle to another, when one muscle feels relaxed shifts to another one, until all body feels relaxed. The third technique trained in relaxation technique training is RIT. RIT or mental imagery or visualization is the relaxation technique which uses the power of mind to present back the relaxing situation or the situation in which someone

reaches certain peaceful place, fun, and peaceful, then the situation is visualized by listening to voices, feeling the touch, the air flow or seeing multiple colors [11]. This training was conducted in group. The training conducted in group has positive effect namely when someone is in group situation has characteristics or same problems enable presence of supporting each other, sharing experiences among participants, exchange information, and the presence of togetherness feeling among participants as the group support for the family that takes care of cancer disease [12]. The purpose of this research is to test the effectiveness of relaxation technique training to decrease the anxiety on diabetes mellitus patients. The hypothesis of this research is that the relaxation training can decrease anxiety on diabetes mellitus patients.

2. Material and Method

2.1 Participants

The participants in this research were selected by using purposive sampling technique, gaining participants with certain criteria. The subject criteria used in this research was elderly suffering for diabetes mellitus disease, has medium until high anxiety level, and resides in Yogyakarta.

2.2 Measurement

The participants' anxiety was measured by using Depression Anxiety Stress Scale (DASS) by Lovibond & Lovibond (1955). The scale trial resulted rehabilitation with $\alpha = .9483$. The score for each answer choice was started from 1 to 3. The higher the participants' score then the higher their anxiety and vice versa the lower their score then the lower their anxiety level. The interview and observation were conducted to obtain qualitative data concerning the development and change of participants' behavior after following the training.

2.3 Procedure

This research used the design of small N experiment, ABA design. ABA design is the experimental design consisting of participants behavior measurement repetition in three phases namely phase A is the phase of the measurement before the phase B therapy which is the phase of measurement repetition when given the therapy and back to phase A which is the phase of after therapy measurement [8]. The hypothesis testing was conducted quantitatively using visual inspection technique [13]. The step is by displaying the score graph of initial phase of anxiety score, during the training and the phase after obtaining the training on each participant. Beside that quantitative analysis was conducted to see the difference of anxiety score change by using Non-parametric Wilcoxon analysis. Qualitative analysis was obtained from the interview result, various experiences (sharing). Qualitative analysis was conducted to find out the psychological dynamics of the relaxation technique training effect towards anxiety decrease and as the evaluation on the participants' condition after the training, how is the participants' progress in doing the relaxation technique, and which techniques is more effective on each participant.

3. Result

In this research, the relaxation technique training decreases the anxiety level in elderly who suffers diabetes mellitus. This is proven through quantitative and qualitative analysis. The quantitative analysis with visual inspection method and wilcoxon difference analysis shows that the anxiety score seems to decrease in each measurement. This can be seen from the quantitative result with inspection visual obtained the result of each participant. Table 1 and the graph in figure 1 show anxiety score of each participant experiencing decrease in DASS score from the pre-test and post-test measurement which then conducted the statistics test with non-parametric wilcoxon analysis to see the effect of relaxation technique on the decrease of anxiety on elderly suffering for diabetes mellitus can be seen in table 3 below.

Table 1: The change of score result of pre-test and post-test

No	Name	Total of Blood Sugar Level	Pre-test Score	Category	Post-test Score	Total of Blood Sugar Level	Description
1.	A	275	18	Severe	6	250	The score decreases 12 points and in Normal category
2.	B	295	18	Severe	5	280	The score decreases 13 points and in Normal category
3.	C	282	20	Severe	9	270	The score decreases 11 points and in Light category
4.	D	270	20	Severe	8	235	The score decreases 12 points and in Light category
5.	E	243	20	Severe	5	220	The score decreases 15 points and in Normal category
6.	F	305	12	Medium	4	288	The score decreases 8 points and in Light category
7.	G	230	15	Medium	5	220	The score decreases 10 points and in Normal category

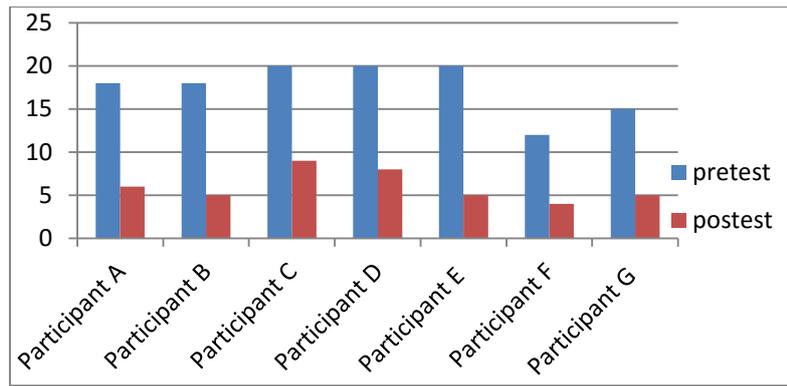


Figure 1: The graph of anxiety score of each participant

Table 3: The result of Wilcoxon calculation

	posttest – pretest
Z	-2.366 ^a
Asymp. Sig. (2-tailed)	.018

Based on table 3, it can be seen that there is significant decrease in anxiety experienced by the elderly who suffers for diabetes mellitus showed by Z value = - 2.371 and p value = 0,018 ($p < 0,05$). Based on the result of quantitative analysis by using visual inspection and statistics calculation above, then it can be concluded that the hypothesis proposed in this research can be accepted, namely relaxation training can decrease the anxiety on elderly suffering for diabetes mellitus. The result of quantitative analysis above is strengthened by the qualitative result obtained by the researcher. Qualitative data were obtained from the result of observation, interview, work sheets, and special condition experienced by each participant. Based on the result of interview on all participants, their blood sugar level increases beside because of their diet habit also because they feel anxiety caused by limited information they have concerning diabetes mellitus. Beside that economic problem also becomes the worry on each participant because they come from middle-low economic group in which they make a living by working as a laborer, housewife, and pensionary. Beside that they also face unstable patients' condition, either physical or emotional until they become worry if they had done it right or not in taking care of themselves. The anxiety condition experienced by the participant has effect on their health condition in which they experience decrease on physical condition and get difficulty to sleep, their heart beat becomes easility fast, nausea, shoulders felt heavy, the body felt stiff and sore, headache and pain, the body felt weak and not excited. The participants also experience anxiety on their future and their family as in participant A who has anxiety on his family and child because his child does not want to study at college until it frequently makes him worry and it causes his blood sugar level increases. Then on participant C, she has anxiety because she thinks about her husband's condition who also suffers for diabetes mellitus and has glaucoma disease. This becomes the trigger for participant C to frequently experiences anxiety and makes her blood sugar level increases. When following the training, each meeting conducted shows that each participant has motivation to follow all the meetins. All participants always come on time and keep coming even though there is sudden change in the schedule. The

participants also feel happy and excited to grab their life back and be healthy. In the first meeting, all participants feel strange with the relaxation techniques being learned and feel less sure with the training given can assist them in overcoming their anxiety. As experienced by participant D who did not believe in the technique being trained and can affect his physical and emotional condition. The first meeting, the material given was the definition of how the physics can affect the emotion of the diabetes mellitus patients and vice versa the emotion affects the physics as experienced the participant, then asking the participant to feel first the deep breathing relaxation and train themselves independently at home. In the second meeting, then they were given the material about diabetes mellitus and relaxation until the participants can understand after feeling the positive effect of the independent training of deep breathing relaxation at home, then given relaxation training with progressive muscle relaxation and the participants were asked to train independently at home. In the third meeting, they were trained integrated imagery relaxation and asked to train independently at home. In the last meeting, the participants are getting better in doing the relaxation even though with various techniques. Some participants feel focus when doing the relaxation training independently at home because the situation is more supportive. Then after given the intervention, the participants state that now their feeling and mind become quieter, the body and breathing condition become fresher and more comfortable than before, their muscles feel more relaxed and can sleep early and their sleep quality is good. This is because the participants state that after given psychoeducation about anxiety, especially the emerging symptoms they can learn then detect themselves when experiencing anxiety such as anxiety appears as the response of the existed stimulus. Related to the implementation of group counseling, the participants feel that they get new family who can listen to them and support each other. This causes the participants willing to get involved in the group counseling namely telling about their problem and willing to accept feedback or suggestion from other participants. When gaining suggestion from other participants, the participant feels easy to listen and motivated to do behavior modification because they encounter the same problem or in the same fate. Beside that, the participants are also motivated to give suggestion to another participant because of the feeling of willingness to help each other. Beside that when obtaining stimulus, the participants also practice the new behavior in the form of relaxation technique which has been trained during the implementation of group counseling. The relaxation implementation dividually is supported by the presence of assignment given, namely doing the relaxation when feeling uncomfortable or when the anxiety symptoms appear. This condition is one of the way to make the participants accustomed in responding to stimulus more effectively to avoid negative response. All participants experience anxiety score decrease. Four participants show the score in normal category because all participants are very active in expressing their experience and actively ask the questions about the material or the relaxation technique given, beside that the participants also have high motivation until they always try to repeat and get used to doing the relaxation even though in the condition which does not cause the emergence of anxiety.

4. Conclusion

Based on the research discussion result that has been explained beforehand, then it can be concluded that the training of relaxation technique is proven effective to decrease the anxiety level of diabetes mellitus elderly patients who become the participants of this research seen from the decrease of DASS score. In the training process can be felt by all participants that there is decrease of anxiety. The technique training is conducted step by step in each meeting and can assist the participants in understanding the training process until they truly

understand and practice it in their daily life.

5. Suggestion

To the professionals, the research results show that the training of relaxation technique can decrease the anxiety of the elderly who suffers from diabetes mellitus. The results of this research can be made as the scientific basic for the study on elderly psychosocial countermeasure on the patients who suffer from diabetes mellitus. By using the relaxation technique method as one of psychological intervention, as the complementary or as one form of therapy becomes the main alternative to overcome physiological disorder or psychological disorder which appears from diabetes disease.

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