Effectiveness Deep Breathing and Progressive Muscle Relaxation Training (PMRT) Techniques to Reduce Anxiety in Pregnant Woman Pre-Birth

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Abstract

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This study aims to examine the effectiveness of deep breathing and progressive muscle relaxation training (PMRT) techniques for pre-natal pregnant women's anxiety at Puskesmas 9 November Banjarmasin. The research method used repetead measure experiment design and the research design used was pretest and multiple posttest design. The research population is 99 and 36 samples are determined by using purposive sampling technique. Instruments used scale The Perinatal Anxiety Screening Scale (PASS). Data analysis technique used data analysis method: descriptive analysis, normality test, sphericity test, and parametric statistic with One Repeated Measure One-Way Analysis of Variance (ANOVA) test. The results showed deep breathing technique and progressive muscle relaxation training technique (PMRT) effective to reduce the anxiety of pregnant mother pre-delivery at Puskesmas 9 November Banjarmasin. Judging from the difference of effectiveness level, progressive muscle relaxation training (PMRT) technique is more effective than deep breathing technique. This study provides clarification of treatment of anxiety problems of pregnant women pre-delivery with deep breathing techniques and techniques progressive muscle relaxation training (PMRT).

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INTRODUCTION

The high Maternal Mortality Rate (MMR) in Indonesia one of them caused by the emotional condition of the mother who is not good enough during the pregnancy period. Research data shows that pregnancy is a source of happiness, it also a source of anxiety for a mother. Whereas excessive anxiety affects the physical and psychological health conditions of mothers and babies conceived (Maimunah, 2011). According to Teixeira research et al. (2009) and Akiki, et al. (2016) anxiety levels of pregnant will increase in the first and third trimesters of the second trimester. Anxiety during pregnancy is also associated with some adverse effects of mother and child, such as postpartum depression (Skouteris, et al. 2009), premature birth, low birth weight (O'Donnell, et al. 2011; Bayrampour, et al. 2016).

Yusuf & Nurihsan (2011) Anxiety is basically a self-reaction to overcome an uncertain threat. These anxiety appear on physical changes, such as respiratory disorders, increased heart bran, sweating etc. One cause of anxiety is the awareness of death. Uncertainty about life is also sometimes a source of anxiety for some people. Prolonged anxiety can cause fear, fear, and other stressful behaviors.

Based on the results of preliminary study of researchers at the 9th November Banjarmasin Public Health Center, shows that high levels of anxiety are often experienced by woman pregnancy pre-delivery at 9th November Banjarmasin Public Health Center. It can be proven with the data of woman pregnancy at 9th November Banjarmasin at Public Health Center which shows data of four woman pregnancy with difficulty sleeping because of anxiety when will give birth and many pregnant mother who worried during labor process.

According to Cicek & Basar (2017) the anxiety of woman pregnancy can be reduced by using deep breathing techniques. Deep breathing technique is an effective method of reducing anxiety and affecting the duration of labor at delivery. But there are other studies conducted by Dengsangluri & Salunkhe (2015) that the use of deep breathing during the first period of labor is ineffective in controlling the anxiety, pain, fatigue, and satisfaction of woman pregnancy. Differences of research results that are used as researchers to re-examine the effectiveness of deep bearthing techniques in reducing the anxiety of woman pregnancy.

In addition to deep breathing techniques there are also techniques that can reduce anxiety in woman pregnancy, such techniques are PMRT techniques. According to Bastani's research et al (2005) the effects of PMRT are useful for reducing anxiety and the perceived pressure in woman pregnancy. Teaching PMRT techniques can be a source to improve the mental health of woman pregnancy. In line with Chambers (2007) who stated that relaxation exercises during pregnancy results are promising to reduce anxiety and emotional. Kottler & Chen (2011) states that the underlying belief in progressive muscle relaxation training (PMRT) technique is that one can learn to relax, thus reducing stress. From the results of the above research, the researchers made the results as a reference to re-examine the effectiveness of PMRT techniques in reducing anxiety in woman pregnancy.

Both of the techniques above are used based on the mindfulness approach and are especially effective in reducing stress. Deep breathing and PMRT are both physiologically based mindfulness interventions that are very effective at reducing stress and anxiety after a stressor occurs. Respiratory techniques are used for a variety of reasons. Usually this technique is taught to be applied to someone who is trying to control anxiety or manage stress. (Erford, 2016).

From several studies can be seen that reducing anxiety in woman pregnancy will produce a positive impact, both for woman pregnancy themselves and children are conceived. The positive impact for woman pregnancy is to reduce the risk of abnormal labor and for the children themselves is the child will have good emotional intelligence and development.

METHODS

This research used experimental repetead measure experiment design with pretest and multiple posttest design involving two groups, the first experimental group given deep breathing technique (5meeting) and second experiment group which was given Progressive Muscle Relaxation Training (5meeting). Participants involved in pretest 36 third trimester woman pregnancy at 9th November Banjarmasin at Public Health Center. The use of purposive sampling technique was conducted to select woman pregnancy who has high anxiety level, so that 24 woman pregnancy were divided into two groups with each group consist of 14 woman pregnancy. The flow of this research can be seen in Figure 1.
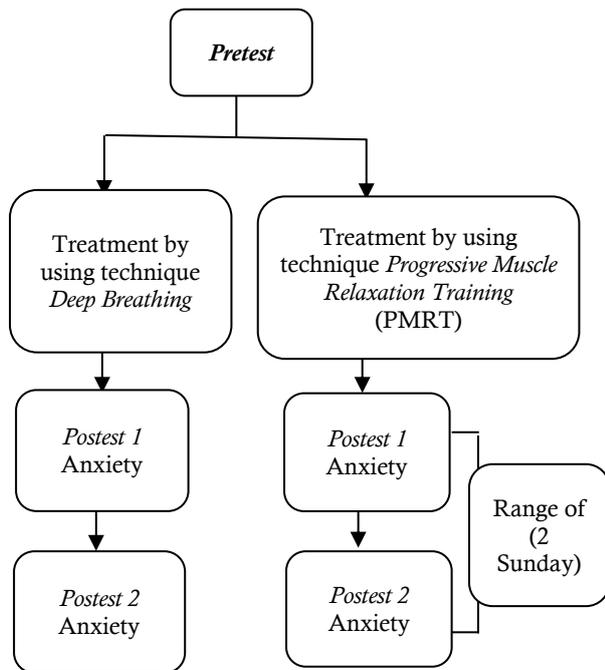

Figure 1. Flow Research

Data collection techniques used in this research are the scale of The Perinatal Anxiety Screening Scale (PASS) adoption of Somerville, Dedman, Hagan, Oxnam, Wettinger, Byrne, and Doherty (2014) consisting of 31 items. The scale consists of 4 indicators, namely Acute Anxiety and Adjustment, General Worry and Specific Fears (fear and fear), Perfectionism, Control and Trauma (perfectionism, control and trauma) and Social Anxiety (social anxiety).

In measuring the instrument, researcher do equivalence by doing back translate, expert validation, and test the instrument. The instrument test result states all valid (r_{xy} result = 0.40-0.72) with alpha keophisien equal to 0.92. The data obtained were then analyzed using the ANOVA Repeated Measures test.

RESULTS AND DISCUSSION

The data in this study is data about the anxiety level of woman pregnancy pre-delivery obtained from the dissemination of instruments that are adopted from the scale of The Perinatal Anxiety Screening Scale (PASS). Total woman pregnancy at Public Health Center at 9 November Banjarmasin are 99 woman pregnancy divided into 32 trimester woman pregnancy I, 31 trimester woman pregnancy II, and 36 woman pregnancy third trimester. The subjects of this study were taken from the population of 3rd trimester woman pregnancy at Public Health Center 9 November Banjarmasin, then divided into 2 groups, which each group consist of 12 people. The first group is a group of deep breathing groups that have pre-natal anxiety. The second group is a progressive mucleation relaxation training (PMRT) group that has pre-birthing anxiety levels.

The data in this study was obtained with the help of instruments in the scale of The Perinatal Anxiety Screening Scale (PASS). Data is obtained from the implementation of pretest which is then used as the initial data and the implementation of posttest 2 which is used as the final data. The results of the study were presented based on objective conditions in the field, obtained through preliminary studies aimed at obtaining preliminary data and empirical data on anxiety images of pre-natal woman pregnancy.

It is can be seen in table 1 that is the result of the spread of the scale of The Perinatal Anxiety Screening Scale (PASS) of third trimester woman pregnancy at Public Health Center at 9 November Banjarmasin. Based on the calculation of pregnancy categorization of woman pregnancy pre-delivery obtained pretest counted 24 woman pregnancy or 100% woman pregnancy have high

anxiety, posttest 18 woman pregnancy or 33% woman pregnancy have high category anxiety, 16 woman pregnancy or 67% woman pregnancy have anxiety categories medium. While posttest 2 24 woman pregnancy or 100% have low category anxiety. Pretest, posttest 1, and posttest 2 data were obtained from PASS scattering results indicating anxiety of pregnant mother decreasing after treatment of deep breathing technique and progressive muscle relaxation training (PMRT).

Table 1. Results of The Perinatal Scale Spread Anxiety Screening Scale (PASS)

Score of range	Category	Pre test		Post test 1		Post test 2	
		f	%	f	%	f	%
42 – 93	Severe symptoms	24	100	8	33	-	0
21 – 41	Mild-moderate symptoms	-	0	16	67	-	0
< 20	Severe symptoms	-	0	-	0	24	100

In this study the hypothesis test used is the one-way ANOVA for repeated measures. Field (2013) describes one-way ANOVA used to compare recurrent sizes on the same subject to determine anxiety reduction in pre-natal woman pregnancy. The following is the result of hypothesis test for pregnant mother pre-delivery of DB group and PMRT group at Public Health Center 9 November Banjarmasin.

Based on the results using the ANOVA Repeated Measures test on the test of within-subjects effect revealed the significance (M = 64.67) for pretest (O_1), for post-test 1 (O_2) (M = 35.58) and for posttest 2 (O_3) (M = 12.41) which applies to DB F1 group (2.22) = 5.81 and based on results using ANOVA Repeated Measures test on test of within-subjects effect for PMRT group revealed significance (M = 64.50) for pretest (O_1), for post-test 1 (O_2) (M = 34.25) and for posttest 2 (O_3) (M = 11.33) applicable to group PMRT F1 (2,22) = 153.77. The following table results Repeated Measures ANOVA:

Table 2. The Result of Repeated Measures ANOVA

Group		O_1	O_2	O_3	F_1	F_2
K_1	Mean	64.67	35.58	12.41	68.46***	190.81***
	SD	13.96	10.51	3.94		
K_2	Mean	64.50	34.25	11.33	153.77***	
	SD	11.02	10.84	4.97		

Infomation:

* p > 0.05; ** p < 0.05; *** p < 0.01

$F_{1(2.22)}$; $F_{2(2.22)}$

K_1 = Deep Breathing Group

K_2 = Progressive Muscle Relaxation Training (PMRT)

F_1 = within-subjects DB Groups and PMRTs

F_2 = test of within-subjects effect/repeatable size between DB Groups and PMRT

Based on the results of ANOVA Repeated Measures test on the test of within-subjects effect can be concluded that the results of both groups ($F_{(5.81, 153.77)}$ = 190.81, p = 0.00 < 0.01) and the difference of pretest, posttest and after post results in research subjects. The difference is due to the provision of treatment with DB and PMRT techniques.

Anxiety is the process of emotional response to subjective judgments of individuals whose circumstances are influenced by the unconscious and are not known for certain reasons. Woman pregnancy experience forms of psychic changes: emotional changes, tend to be lazy, sensitive, easily jealous, ask for more attention, feelings of discomfort, depression, stress, and experience pre-natal anxiety. Pregnant mother's anxiety in this study was measured using the scale of The Perinatal Anxiety Screening Scale (PASS), woman pregnancy's anxiety, the higher the total score obtained then indicating the higher the subject's anxiety. Vice versa, the lower the total score obtained by the subject indicates the lower the subject's anxiety. The research data indicate the initial condition of anxiety that the majority of pre-mothers woman pregnancy have a tendency at high levels. This suggests that the anxiety level in the study sample has reached a fairly serious stage in the sense of need to be reduced, plus the fact that the number of research samples that have anxiety at a high level can be said quite a lot. The phenomenon of course requires immediate treatment.

The results of this study confirm the research conducted Teixeira, et al. (2009) & Akiki, et al. (2016) anxiety levels of woman pregnancy will increase in the first and third trimesters of the second trimester. Anxiety during pregnancy is also associated with some adverse effects of mother and child, such as postpartum depression (Skouteris, et al. 2009). The assumption that the anxiety problems of woman pregnancy pre-delivery need to be minimized optimally because the anxiety of woman pregnancy have a major influence on the condition of woman pregnancy and babies conceived. Pre-mastic anxiety poses a variety of negative impacts on the condition of woman pregnancy, and most woman pregnancy, are less aware of the impact of what is caused by high

anxiety. In addition, high anxiety also adversely affects the physical and psychological condition of the mother and infant as termed premature birth, low birth weight (O'Donnell, et al. 2011; Bayrampour, et al. 2016). It requires special interventions to overcome pre-natal anxiety.

The anxiety of woman pregnancy has four indicators: Acute Anxiety and Adjustment, General Worry and Specific Fears, Perfectionism, Control and Trauma (perfectionism, control and trauma), and Social Anxiety (social anxiety). Each indicator has an effect on the height of low pregnancy anxiety. Based on the mean ratio of each maternal anxiety indicator, the Acute Anxiety and Adjustment indicator has the largest mean. This means that woman pregnancy have acute disorders and anxiety that will make anxiety high.

The purpose of the intervention effectiveness test in this research is to know whether the intervention of deep breathing technique and progressive muscle relaxation training (PMRT) is able to reduce the anxiety of pregnant mother pre-delivery. Based on the statistical tests listed in the previous sub-chapter, there was a significant difference between pre-intervention and posttest intervention. This means deep breathing and progressive muscle relaxation training (PMRT) techniques are effective in reducing anxiety of pre-natal woman pregnancy. The effectiveness of deep breathing technique and progressive muscle relaxation training (PMRT) is not only measured from the analysis of data as above, but also studies that support why pre-natal woman pregnancy's anxiety can be reduced using deep breathing technique and progressive muscle relaxation training (PMRT).

This is in accordance with research that was conducted by Cicek & Basar (2017) in his research shows that the anxiety of woman pregnancy can be reduced by using deep breathing techniques. Deep breathing technique is an effective method of reducing anxiety and affecting the duration of labor at delivery. And according to Bastani's research et al. (2005) the effects of PMRT are useful for reducing anxiety and the perceived pressure in woman pregnancy.

Teaching PMRT techniques can be a source to improve the mental health of woman pregnancy.

The research above confirms that deep breathing and progressive muscle relaxation training (PMRT) techniques have been shown to be effective in reducing woman pregnancy's anxiety. The results of research conducted Yusuf & Nurihsan (2011) Anxiety is basically a self-reaction to overcome threat is not stabilized. These anxiety appear on physical changes, such as respiratory disorders, increased heart bran, sweating etc. One cause of anxiety is the awareness of death. Uncertainty about life is also sometimes a source of anxiety for some people. Prolonged anxiety can cause fear, fear, and other stressful behaviors. The results of the study showed that deep breathing and progressive muscle relaxation training (PMRT) techniques were effective in reducing pre-natal anxiety.

Based on the statistical tests listed in the previous sub-chapter, there was a significant difference between pre-intervention and posttest intervention. This means that deep breathing and progressive muscle relaxation training (PMRT) techniques are effective in reducing pre-natal pregnancy anxiety, deep breathing technique is an effective method of reducing anxiety and affecting the duration of labor during delivery and according to Chambers (2007) that relaxation exercises during pregnancy results are promising to reduce anxiety and emotional. Therefore, deep breathing and progressive muscle relaxation training (PMRT) techniques are suitable for reducing pre-mothers' pregnancy anxiety.

In the last discussion, it will be seen the difference in effectiveness level of deep breathing techniques and progressive muscle relaxation training (PMRT) in reducing anxiety woman pregnancy pre-delivery. Based on the repeated measure test to see individual score changes as well as to compare the effectiveness of DB and PMRT groups. Judging from changes in individual scores, both DB and PMRT groups both had a decrease in scores on each pregnant woman, with the meaning of deep breathing techniques and progressive muscle relaxation training (PMRT) effective for reducing anxiety of pre-natal woman pregnancy. However, it can be

seen that progressive muscle relaxation training (PMRT) technique is more effective than deep breathing technique.

Deep breathing techniques in reducing anxiety Woman pregnancy, woman pregnancy are given knowledge about deep breathing techniques and positive negative effects of pre-natal anxiety and woman pregnancy are taught how to correct breathing in reducing anxiety. While the progressive muscle relaxation training (PMRT) technique in reducing woman pregnancy's pre-natal anxiety, woman pregnancy are also given knowledge about the positive and negative impacts of pre-natal anxiety and the implementation of progressive muscle relaxation training (PMRT), and based on the results of testing techniques progressive muscle relaxation training (PMRT) is more effective to reduce anxiety pre-mothers woman pregnancy than deep breathing techniques.

CONCLUSION

This research was conducted to see the effectiveness of the deep breathing technique and progressive muscle relaxation training (PMRT) technique to reduce the anxiety of pregnant mother at the healthy center at 9 November Banjarmasin. The results of this study show that both techniques are effective and there is no significant difference between deep breathing and progressive muscle relaxation training (PMRT) techniques in reducing anxiety of pre-natal woman pregnancy.

Furthermore, it is important that the researcher is expected to increase the knowledge in comprehending comprehensively and more comprehensively about the implementation of research on deep breathing technique and progressive muscle relaxation training (PMRT) technique on pregnant mother and the result of this research is expected to give contribution of information and thought to apply in addressing the problems of woman pregnancy primarily to reduce pre-natal anxiety.

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