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Relaxation Therapy in Pregnant Women With Premature Contractions: Evidence-Based Nursing Practice

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ABSTRACT

Premature contractions result in preterm labor and are dangerous for the safety of the fetus. Premature labor or babies born with low birth weight have a risk of developmental disorders, risk of infection and even death. Therefore, medical and nursing management is needed to prevent recurring premature contractions. One evidence-based nursing practice that can be applied by nurses to improve comfort and prevent recurring contractions is by doing relaxation therapy. A trial design of five respondents who were pregnant women with premature contractions based on evidence-based nursing practice using consecutive sampling method. The application was given an explanation of the concept of self hypnosis relaxation, giving examples of exercises, and listening to recordings. Self hypnosis relaxation therapy was applied to five pregnant women with premature contractions, with conditions not under emergency and in treatment or recovery in hospital. This therapy was effectively applied to increase comfort, reduce anxiety, and prevent recurring contractions. It was recommended for pregnant women and families to continue the relaxation therapy at home.

Keywords: *premature contractions, anxiety, relaxation therapy, self-hypnosis*

1. INTRODUCTION

Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) are indicators of health development. However, in developing countries the MMR and IMR are still quite high despite a decline. MMR and IMR in Indonesia are still 305 per 100,000 births. Around 830 women die from complications during pregnancy until postpartum [1]. While neonatal deaths also contributed to the IMR caused by preterm labor with an incidence of 15 per 1000 births [2].

Preterm labor is considered as one of the important causes of perinatal morbidity and mortality [3]. Various factors that can cause premature labor including: a history of premature rupture of membranes, a history of premature labor, polyhydramnion, incompetent cervix, infections, low socioeconomic, smokers, domestic violence and multiple pregnancies [4]. One of the main factors that cause premature labor is stress [5]. Mothers with prenatal stress will stimulate the placenta and the pituitary-adrenal axis in pregnancy, causing uterine contractions [6].

Maternal stress can be associated with complications experienced during pregnancy such as hypertension and preeclampsia, resulting in negative perinatal outcomes including impaired fetal growth and preterm labor. Stress during pregnancy can be interpreted as anxiety and fatigue [7]. Anxious mothers indicate a stressor that can trigger contractions before term of gestational age. In line with fatigue as a trigger of stress has a relationship with the incidence of premature rupture of membranes or premature labor [8].

Stress experienced by mothers has an impact on poor health. Stress represents the relationship of mind and body, consequently the perception of stress in mind triggers biological changes so that the physiological reactions that arise will be detrimental to health. The stress reaction process involves the hypothalamic-pituitary-adrenal (HPA) axis with corticotropin release (CRH) [9]. The results of previous studies indicate that stress and anxiety are associated with an increase in the CRH hormone. Pregnant women with increased CRH increase the risk of

complications such as impaired fetal development, preterm birth, and LBW. In addition, CRH is affected by fatigue and anxiety [10].

Stress at various levels is often found in our environment, our body, or our mind. Anxiety is a natural thing for humans. Anxiety is a behavioral, affective, and cognitive response to the perception of a threat or danger. If the anxiety of pregnant women is excessive towards certain conditions, it can cause suffering and interfere with metabolism [11].

Stress and anxiety in respondents is one of the responses that emerged in the focus of maternal nursing services on the welfare of the mother and fetus during the perinatal period. Despite the stress, anxiety has an important role that causes premature labor, but relaxation therapy has been used for psychological and physical disorders due to stress and anxiety [12]. Based on the evidence, relaxation therapy can significantly reduce the risk of preterm labor. Relaxation training is used effectively in stress management. The relaxation response provides homeostatic balance, in the form of decreased pulse, blood pressure, oxygen concentration in the blood, skeletal muscle tension, and blood lactate levels. Relaxation therapy will increase peripheral flow, slow alpha brain waves (when relaxed), and carbon dioxide elimination [13].

The choice of relaxation therapy has been accepted as a cost-effective nursing intervention [14]. Relaxation therapy is included in nursing care and follow-up to respondents at risk of preterm labor [15]. These studies were conducted to evaluate the effects of relaxation therapy for dealing with stress and anxiety in pregnant women with premature contractions or premature labor.

2. METHOD

A trial design of five respondents who were pregnant women with premature contractions based on evidence-based nursing practice using consecutive sampling method. Samples recruited had inclusion criteria for pregnant women who experienced premature contractions between 20-36 weeks of gestation, were identified as having anxiety, were being treated in type B hospitals (September 10-December 14, 2018) and type A hospitals (February 4 - March 22, 2019), hospitalized while involved in this study.

Interventions in the form of relaxation therapy were given to pregnant women with premature contractions who had been recruited based on inclusion criteria. Maternity nurses precede the intervention by identifying the anxiety experienced by pregnant women with premature contractions then identifying the ability to provide relaxation therapy by providing an explanation, purpose, and approval of signing the consent form, then explaining the techniques and teaching or guiding the implementation of relaxation therapy. Respondents got relaxation therapy in the form of breathing techniques and self hypnosis or affirmations to increase comfort, reduce anxiety.

Evaluation of the effect of relaxation therapy using the Hospital Anxiety And Depression Scale (HADS-A) questionnaire (Rudy, et al., 2015). The Indonesian version of the HADS-A scale showed good validity and reliability. The Kappa coefficient of HADS-A was 0.706 ($p < 0.01$) for the anxiety subscale. There were 7 question items on the HADS-A questionnaire. After that, the intervention was given in stages, which was to provide a comfortable position, make the respondent feel relaxed with the position supported by a pillow, then guide the diaphragmatic breathing by asking the respondent to put a hand on his stomach, guide to inhale slowly, use the phrase "breathe deeply, exhale slowly through the mouth". It takes a few minutes. Then relaxation therapy in the form of playing recordings that combine with diaphragmatic breathing is played. Affirmations will focus on releasing tension. Respondents did relaxation techniques twice per day using earphones. Anxiety level assessment was carried out before and after the intervention was given while the respondent was hospitalized.

Data analysis of intervention results was in the form of an anxiety level analysis by looking at the decrease in anxiety after being given an intervention. Other analyzes include changes in fetal heart rate, contraction characteristics, and maternal pulse.

3. RESULTS

The results of implementing evidence-based nursing practice on five respondents consisted of the characteristics of respondents, changes in anxiety levels before and after relaxation therapy, changes in contractions, fetal heart rate, and maternal pulse as follows:

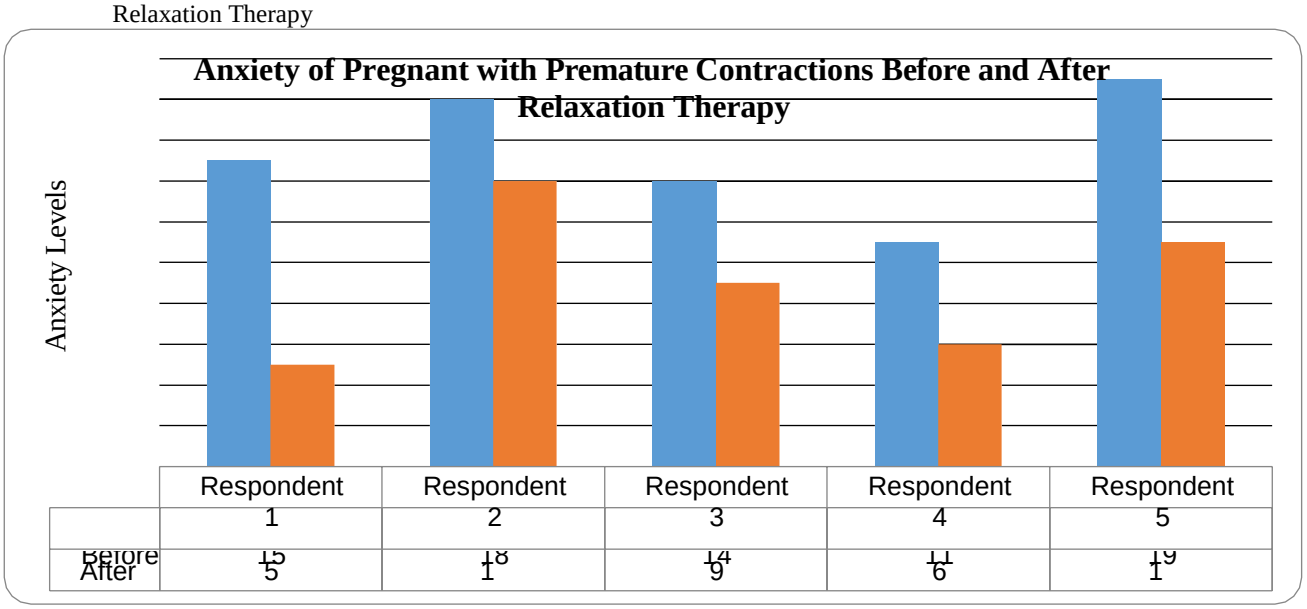
Table 1. Characteristics of Respondents

Respondents	**Respondent1**	**Respondent2**	**Respondent3**	**Respondent4**	**Respondent5**
Age (years)	35	24	25	23	21
Gestation (weeks)	24	33	36	31	30
Pregnant order	4	5	2	1	1
Fetus	Single, alive	Single, alive	Single, alive	Gemelli, alive	Single, alive
Tocolytic score	3	5	4	3	3
Action taken	CC	CS	CC	CC	CC

*CC = conservative care
*CS = cesarean section

Based on the table above, there were five respondents aged 21 to 35 years. All respondents were between 24 and 31 weeks' gestation. As many as 80% successfully treated conservatively, 20% termination with SC. There were 80% single fetuses and 20% gemelli fetuses.

Graph 1. Anxiety Levels of Pregnant Women with Premature Contractions Before and After Relaxation Therapy



Based on the results in graph 1 it appears that all clients experience a decrease in anxiety levels that vary before and after relaxation therapy is given that is self-hypnosis.

Table 2. Data of Percentage of Anxiety Levels of Pregnant Women with Premature Contractions Before and After Relaxation Therapy

Respondents	Gestation	Pre	Post	Difference
1 (35th)	24 weeks	15	5	10
2 (24th)	33 weeks	18	14	4
3 (25th)	36 weeks	14	9	5
4 (23th)	31 weeks	11	6	5
5 (21th)	30 weeks	19	11	8

Table 3. Evaluation of Pulse (Heart Rate) Before and After Relaxation Therapy

Respondent (Age)	Pre	Post
1 (35th)	88	82
2 (24th)	96	78
3 (25th)	82	82
4 (23th)	85	84
5 (21th)	86	83

Based on the results of table 3. shows that 80% of pregnant women with premature contractions had decreased pulse. However, 20% of respondents did not experience a decrease in pulse.

Table 4. Evaluation of Fetal Heart Rate Before and After Relaxation Therapy

Respondent	Pre	Post	Action taken
1 (35th)	142	145	Conservative Care
2 (24th)	138	100	Cesarean Section Cito
3 (25th)	150	147	Conservative Care
4 (23th)	I:136	I: 138	Conservative Care
	II:151	II:148	
5 (21th)	150	146	Conservative Care

Table 4. results about changes in fetal heart rate show that all respondents experienced a decrease in fetal heart rate. As many as 80% of respondents experienced a decrease in fetal heart rate that is still within normal limits. While 20% experienced deceleration (fetal emergencies). As many as 80% were successfully treated with conservative care and 20% had cesarean section because of fetal distress.

Table 5. Evaluation of Contractions Before and After Relaxation Therapy

Respondent	Frequency (/10 minutes)	Durasi (durations)	Character
Pre			
1 (35th)	1	15	Irregular
2 (24th)	1-2	20-30	Regular
3 (25th)	1-2	20-30	Irregular
4 (23th)	1	20-25	Irregular
5 (21th)	2	20	Irregular
Post			
1 (35th)	0	0	0
2 (24th)	1-2	> 40	Regular
3 (25th)	1	20	Irregular
4 (23th)	0	0	0
5 (21th)	0	0	0

4. DISCUSSION

The condition of pregnancy with premature contractions is a period that causes pregnant women to experience more stress and anxiety. Anxiety that is not handled properly will affect the physical and psychological aspects so that it can trigger premature labor. At this time, nurses are very much needed as care givers who provide nursing care holistically. The nurse is also an advocate and educator for the respondent and the family to facilitate the respondent getting access, facilities, and supports needed by the respondent during the treatment. One nursing intervention that is considered quite easy and low cost is relaxation therapy.

Relaxation therapy shows positive results and reduces anxiety experienced by respondents. Respondents with differences in the number of gestations, gestational age, complications associated with pregnancy, cervical anatomical abnormalities, and multiple pregnancy give different levels of anxiety reduction. The measuring instrument used in this study is the Hospital Anxiety Depression Scale, an instrument that measures anxiety and depression. In this study only focuses on anxiety so that the items used are only those that measure anxiety, namely HADS-A. HADS-A consists of 7 question items that have been translated into Indonesian and show good validity and reliability [16]. Interpretation of HADS-A is divided into normal and three categories of anxiety namely the value of 0-7 is a normal condition, the value of 8-10 is mild anxiety, the value of 11-15 is moderate anxiety, and the value of 16-21 is severe anxiety [11].

Anxiety whose value is reduced by using relaxation therapy has been supported by previous studies. According to Janke (1999) that relaxation therapy gives positive results by suppressing preterm labor, babies with greater weight, and maintaining pregnancy. Research recommends that relaxation therapy be classified as effective because of low and easy costs [5].

Pregnant women who experience anxiety if not handled properly will have an impact and influence on the physical and psychological both on the mother and fetus [13]. Anxiety will affect the hypothalamus to stimulate the endocrine glands that regulate the pituitary gland. As a result, an increase in stress hormones such as cortisol, Adreno Cortico Tropin Hormone (ACTH), catecholamines, Luteinizing Hormone (LH) / Folicle Stimulating Hormone (FSH), β-Endorphin. Hormone release results in systemic vasoconstriction, including vasoconstriction of the utero placental blood vessels so that the fetus can experience fetal distress [17].

Increased stress during pregnancy can increase the risk of maternal and fetal morbidity and mortality. The results of the study have shown that depression, anxiety, and other mental conditions disorders experienced by pregnant women are one of the factors that mothers are at risk of losing the fetus, premature birth, and low birth weight. Thus, interventions that reduce anxiety are needed to maintain health during pregnancy. Non-pharmacological interventions are based on controlling mind-body functions. Physiologically, relaxation therapy with deep breathing techniques and hypnotherapy will improve the effects of stress involving the parametric parts of the central nervous system. Relaxation will inhibit the increase in sympathetic hormones so that the body's dysregulation can be reduced. Sympathetic nerves have the opposite work with the parasympathetic nervous system which will slow the work of the internal organs of the body. The work results in a decrease in heart rate, blood pressure, breathing rhythm, muscle tension and the production of stress-causing hormones [18]. The results of his study showed that pregnant women who are able to relax to a decreased level of anxiety have an influence on decreasing blood pressure, and pulse.

Changes during pregnancy both physiologically, mentally, and psychomotorly experienced vary by pregnant women. Stress and anxiety are often experienced in pregnancy. Relaxation therapy has a positive impact on anxiety. One relaxation therapy is self hypnosis. Uterine contractions can be reduced through hypnosis. Conditions of stress or anxiety will increase the release of corticotropin which triggers the release of prostaglandins that cause uterine contractions. Giving self hypnosis will reduce anxiety and reduce blood pressure [14].

The application of nursing care to mothers with premature contractions must be more comprehensive. Assessment is carried out to determine the needs of respondents who are not only on physical needs but also facilitate the fulfillment of psychological needs so that mothers with premature contractions can be in a calm condition, and maintain pregnancy until it reaches term. Stressors that cause anxiety can be controlled or eliminated by interventions that are included in nursing care.

Maternity nurses as researchers that use research can improve nursing care and services for pregnant women with premature contractions based on evidence based nursing practice with relaxation therapy interventions with the aim of reducing anxiety.

Relaxation is beneficial for both mother and fetus. Pregnant women after relaxation will cause physiological changes in the form of fetal well-being, a decrease in the basal value of the fetal pulse, and an increase in fetal pulse.

5. CONCLUSIONS

Based on the results of research that has been done with the similarity of relationships with previous studies that relaxation therapy proved effective if applied to pregnant women with premature contractions with conservative care.

Due to the increasing need for health services and supporting various government programs to improve maternal health, maternity nurses are expected to be able to provide holistic services in a variety of cases without exception in the case of premature contractions. Problems with the occurrence of premature contractions require special attention, because the previous history experienced by respondents and physical or psychological disorders due to stress will aggravate this problem. Physical disorders and perceived stress will raise anxiety, so that relaxation therapy can be given in accordance with these conditions, further research is needed on the value of tocolytics and other factors that can affect relaxation therapy and the need for supporting therapies that maximize the application of relaxation therapy. Further research is needed with a larger number of samples to be representative of the population such as clinical trials with randomization.

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