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INFLUENCE OF SPIRITUAL THERAPY EMOTIONAL FREEDOM TECHNIQUE (SEFT) ON CORTISOL LEVELS AND IMMUNOGLOBULIN E
(Study of Anxiety in Pregnant Women in Independent Practice Midwives Semarang)

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Pregnant women primigravida experience fear, anxiety, and fear before delivery. Worries and anxieties of pregnant women if not handled properly will have an impact and influence on the physical and psychic, both the mother and fetus. In this study, we proposed a method named SEFT (Spiritual Therapy Emotional Freedom Technique) to reduce the stress and depress among the primigravida in giving birth. This study employed a quasi-experimental design with pretest-posttest control group. Fifteen trimester primigravida with a gestational age of 28 to 35 weeks in three private midwifery practice Mandiri (BPM) in the Banyumanik and Tembalang district were involved by consecutive sampling technique both in experimental and control group. SEFT therapy, a knock technique on the nine meridian points including a point at the top of the head, was provided to the respondents in the experimental group for 14 days (two weeks) every night. From the data, we highlight a significant increasing level of cortisol levels among the primigravida who enter the last stage of pregrnancy from 269.29 ± 14.75 nmol/L to 334.39 ± 19.81 nmol/L. The stress and anxiety before delivery elevate the IgE levels from 206.17 ± 55.4 IU/mL to 220.33 ± 56.23 IU/mL. By the result we revealed a significant contribution of SEFT therapy to reduce the levels of cortisol (p value < 0.001) and IgE (p value < 0.01). The data indicated the primigravida who obtained SEFT are more relaxed to face the delivery. The results recommend SEFT as the alternative solution for the primigravida who stress and depress facing delivery.

Keywords: Spritual Emotional Freedom Technique, Cortisol, Imunoglobulin E, Stress

1. INTRODUCTION

During pregnancy mothers change both physically and psychologically. A study in Pregnant Sweden showed pregnant women in the second and third trimesters about antenatal care in pregnancy 35 weeks experienced anxiety (24%), depression (22%) (Claesson, et al., 2010). Ten percent of pregnant women in Minnesota had anxiety (Kim, et. al . 2006). In Bangladesh, as many as 29% of pregnant women experienced anxiety and 18% had depression (Nasreen, et al., 2011), as well as research in Pakistan of pregnant women experienced anxiety as many as 34.5% and 25% depressed (Niaz, et al 2004 in Ali, et al, 2012). While in Indonesia, pregnant women in the third trimester primigravidas experienced anxiety as much as 33.93% (Larasati, 2012).

Instable emotion increases cortisol level in plasma and affects to a decreasing immune response among mothers and fetus (Suliswati, 2012; Carlson, et al. 2004). Women who suffer from stress and anxiety during pregnancy trimester of III will be at increased risk of congenital disorders such as failure of the closing of cleft palate, sectio cesaria, premature birth, delivered the baby with low birth weight (LBW) and long-term deals with behavior disorders and the children's emotions (Evan, 2002). Prenatal stress increase chorionic releasing hormone (CRH) maternal plasma which associated with preterm birth. Women with levels of CRH and high prenatal anxiety during pregnancy 28-30 weeks, associated with early childbirth (Mancuso, 2004).

Moreover, a meta-analysis study in 2013 about anxiety among pregnant woman during the prenatal and post-natal period focusing on preterm labor and full-term showed a high level of anxiety in prenatal associated with problems of obstetrics, destructive fetal development, and in the long term associated with behavioral problems in childhood and adolescence (Correia and Linhares, 2007). Other studies have shown that pregnant women with high anxiety will lead the risk of hypertension in pregnancy and increase mortality and morbidity among the pregnant women (Leigh, 2008).

In this study we proposed *Spiritual* and *Emotional Freedom Technique* (SPEF) for stress and anxiety management in pregnant women primigravidae third trimester. SPEF is one of well-known therapies and psychotherapies for managing stress and anxiety management in pregnant women by administering drugs (i.q., diazepam, clobazam, bromazepam) since it is not harmful for both mother and fetus, less side effects, and no allergy (Hawari, 2013). SEFT is a cognitive intervention including a progressive muscle relaxation, diaphragmatic breathing, visualization, meditation, massage, music therapy, yoga, and hypno-therapy (Hosseini, 2009; Zainudin, 2009). The results are expected for midwifery care development to manage anxiety during pregnancy.

2. RESEARCH METHODOLOGY

2.1. Design and Samples

This research employed a quasy experiment and was designed byone group pretest-posttest with control design. Fifteen trimester primigravida with a gestational age of 28 to 35 weeks in three private midwifery practice Mandiri (BPM) in the Banyumanik and Tembalang district were involved by consecutive sampling technique both in experimental and control group. Respondent in this study met the inclusion criteria as follows: frequency of Ante Natal Care (ANC) at least 4 times. The respondents were excluded if have a history of heart disease, diabetes, hipertensi, cancer, asthma and tumors, complications at their pregnancy, given no SEFT therapy previoudly.

2.2. Measurement

A knock technique was provided on the nine meridian points including a point at the top of the head. The starting point is on the eyebrow, above the bone of the eye side, two inches below the eyelid, right under the nose, between the chin and the bottom lip, at the end of the meeting place of the sternum, below the armpit are parallel with nipples and on the border between the sternum and the lower part of the breast. In the experimental group, the respondents obtained treatment for 14 days (two weeks) every night. The treatment was applied by the trained midwifery in the first day. A trained was given to the respondents by the midwifery before they can apply the treatment by themselves. During SEFT therapy, respondents will be monitored by their husband using observation sheet. The level of cortisol and Immunoglobulin E (IgE) was measured before and after treatment at GAKI laboratory.

2.3. Data Analysis

The characteristic data observed in this study included age, education, occupation, age pregnancy, levels of cortisol and IgE. Non parametric test was employed to analysis the significant mean difference.

3. RESULTS

3.1. Characteristics of respondents

Most of respondents involved in this study have relatively high education. More than 50% of respondents both in experimental and control group were employed, as shown in Table 1. The data shown in Table 2 indicated that the respondents involved in the two groups have no significant difference for age and gestational age. This data may support that the mean difference of the observed parameters may not be resulted by the age and gestational age.

Table 1. Education and employment status of the respondents (N=30)

Characteristics	Groups			
	Treatment (N=15)		Control (N=15)	
	F	%	F	%
Education				
Primary	2	13.3	0	00.0
Secondary	6	40.0	7	46.3
University	7	46.7	8	53.3
TOTAL	15	100%	15	100%
Employment status				
Employed	9	60	8	53.3
Unemployed	6	40	7	46.7
TOTAL	15	100%	15	100%

Table 2. Age and gestational age of respondents (N=30)

Characteristics	Groups		p value
	Treatment (N=15)	Control (N=15)	
Age (years)			
Range	20-27	20-28	
Mean ± SD	24 ± 2.29	24.1 ± 2.55	0.941
Median	25	25	
Gestational age (years)			
Range	28-35	28-35	
Mean ± SD	32.1 ± 2.07	32.5 ± 2.29	0.540
Median	32	33	

Table 3. The level of cortisol and IgE before dan after therapy between control and treatment group

Parameter	Groups			
	Control (15)		Treatment (15)	
	Pre-test	Post-test	Pre-test	Post-test
Cortisol level (nmol/L)				
Range	192.64 – 352.83	233.78 – 453.88	232.68 – 821.10	189.36 – 609.52
Mean ± SE	269.29 ± 14.75	334.39 ± 19.81	355.05 ± 36.49	269.29 ± 26.69
p value	< 0.001		< 0.001	
IgE level (IU/mL)				
Range	7.75 – 573.72	27.25 – 854.14	8.61 – 156.75	9.12 – 150.23
Mean ± SE	206.17 ± 55.4	220.33 ± 56.23	56.65 ± 11.34	49.54 ± 9.86
p value	0.156		0.005	

3.2. Facing delivery increased cortisol hormone and IgE

In this study, we revealed that the primigravida at the last trimester face stress before delivery. By our result in Table 3, the third trimester women exhibited a significant increasing level of the stress hormone, cortisol hormone, at the 0.001 difference level. The high level of cortisol hormone secretion indicated the restlessness, anxiety and depression (Clow, 2001). Afraid to the failure and trauma in giving birth depressed the primigravida who enters the last stage of pregnancy (Saefudin, 2010). The other factors related to the stress among the primigravida may also come from the environment around the residence (Prastowo, 2011). Jung (2011) also revealed the cortisol hormone in women increased three times during pregnancy.

Approaching delivery day, the respondents also identified with higher IgE level on their blood, from 206.17 ± 55.4 IU/mL to 220.33 ± 56.23 IU/mL. It may harmful for the baby condition since as revealed by the previous studies that mothers who had high levels of IgE will deliver babies with high IgE level and related to the high prevalence to allergies and asthma in the future life (Bidaki et al. 2011; Detiana, 2010). The data shows a positive trend between the two parameters where stress in pregnancy may increase the IgE in the cord blood and maternal serum IgE. As shown in in (Sholeh, 2006) and (Price and Wilson, 2006) cortisol hormone will act as a stimulator for the receptor endurance immunology, both specific and non-specific cellular and humoral immunity that produce antibody.

3.3. Influence of SEFT on cortisol hormone and IgE

SEFT therapy contributed significantly to a decreasing level of cortisol hormone among the primigravida who enters the last stage of pregnancy. By this result, we highlight a positive benefit to the primigravida who really stress and depress before delivery (Zaenuddin, 2009) suggested that the meditation, pray, and surrender to GOD as well as the knock technique which been provided to the patients on the meridian points may related to reduce even deplete the various physical and psychosocial problems including pain, stress, anxiety and depression. The decrease level of cortisol hormone exhibited the primigravida who obtained SEFT are more relaxed to face the delivery. Moreover, we also highlight a significant decreasing level of IgE among the women who enter the last stage of pregnancy as the response of low cortisol secretion at the 0.01 difference level. The mean IgE level (± SE) fall from 56.65 ± 11.34 IU/mL to 49.54 ± 9.86 IU/mL after obtained SEFT therapy.

4. CONCLUSIONS AND RECOMMENDATION

We highlight a significant increasing level of cortisol levels among the primigravida who enter the last stage of pregrnancy. The stress and anxiety before delivery elevate the IgE levels. By the result we revealed a significant contribution of SEFT therapy to reduce the levels of cortisol and IgE. The data indicated the primigravida who obtained SEFT are more relaxed to face the delivery. The results recommend SEFT as the alternative solution for the primigravida who stress and depress facing delivery.

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