Hypnotherapy as an Alternative to Reducing Anxiety Levels, Cortisol Levels and Fetal Heart Rate Among Primigravidae in the Third Trimester of Pregnancy

AyiTansahRohaeti#1, Ari Suwondo*2, Rr.SriEndangPujiastuti#3, Leny Latifah##4, Melyana Nurul Widyawati###5

# Postgraduate Applied Science Program in Midwifery, PoltekkesKemenkes Semarang, Indonesia
## Research and Development Health Center, Magelang, Indonesia
### Senior Lecturer of, Public Health DiponegoroUniversity Semarang, Indonesia

Abstract
During pregnancy, pregnant women may experience anxiety, thoughtfulness, and fear resulting in increased cortisol hormone of 2-4 times fold, and it will have an impact on the fetus in the form of unstable fetal heart rate. One way to handle it is to use hypnotherapy. This study is to analyse the differences in the anxiety level, the cortisol level and fetal heart rate among primigravidae in the third trimester of pregnancy after hypnotherapy with quasi experimental study. The instrument to assess anxiety was ZSAS questionnaire, cortisol examination was performed with ELISA method, fetal heart rate was measured using Doppler. From data analyse in 40 women this study obtained that there were significant differences in the anxiety level, the level of cortisol hormone and fetal heart rate among primigravidae in the third trimester of pregnancy after being given hypnotherapy for 1 month.

Keywords: Hypnotherapy, Anxiety, Cortisol, Fetal Heart Rate.

I. INTRODUCTION

There are physiological and psychological changes during pregnancy. Those changes can lead to several feelings in the form of worry, anxiety, and fear during pregnancy. Perceived anxiety generally includes fear of bleeding, fear of a baby with physical defect, fear of pregnancy complications, fear of pain during childbirth and fear of perineal suture and complications during childbirth, which can lead to death.[10]

Anxiety in facing childbirth becomes a stressor for pregnant women during the third trimester. This stressful state will stimulate the sympathetic nervous system to continue its stimulus to the adrenal medulla to release catecholamines (Norepinephrine, epinephrine and dopamine) into the blood stream.[9] At the same time the hypothalamic corticotrophin releasing system stimulates the anterior pituitary gland to release the adrenocorticotropic (ACTH) hormone. ACTH then stimulates the adrenal cortex to release steroid hormones, especially cortisol.[13]

Hypnotherapy is a therapy given to patients in a hypnotic/unconscious condition[3] with a combination of self hypnosis practice to deal with a particular anxiety disorder that is complemented with a guide from the Hypnotherapist to achieve deep relaxation.[4]

A preliminary study has been carried out at Bergas Community Health Center to 15 pregnant women. After measuring the anxiety level with the ZSAS questionnaire this study found that before delivery 3 pregnant women had mild anxiety, 10 people had moderate anxiety and 2 people had severe anxiety. Pregnant women also said that they had been given counseling related to childbirth at maternal class meetings but that was not enough to reduce maternal anxiety. Until now, efforts to overcome maternal anxiety through maternal class activities at Bergas Community Health Center were not optimal and there was no other effort to be applied to overcome anxiety among pregnant women.

II. METHODS

A. Design
This was a quasi experimental study with pre-post test control group design which is done in Bergas Community Health Center, Semarang from 4 May until 4 June 2018.

B. Population and sample
The population in this study were all primigravidae mothers trimester III that have anxiety problem (mild and moderate anxiety scale) and by purposive technique sampling the sample in this study is 40 women.

C. Instrument
Hypnotherapy was given by certified trainer from Indonesian Board of Hypnotherapy that focused in each of sample individual problem (anxiety problem) until the anxiety levels is reduce. The hypnotherapy
tratner have a modul that have been standarized as an guide when given the treatment to the sample. The instrument to assess anxiety was ZSAS questionnaire, cortisol examination was performed with ELISA method conducted at GAKI UNDIP laboratory using blood serum sample of research subjects and Fetal Heart Rate was measured using Doppler.

D. Intervention

Sample was divided into 2 groups, treatment group as much as 20 respondents were given Standardized Antenatal Care, self Hypnosis and Hypnoteraphy 8 times during 4 weeks. In which Hypnotherapy was given 2 times in 1 weeks with duration for each hypnotherapy was 1 hour.

For control group as much as 20 respondents were given Standardized Antenatal Care and self hypnosis 8 times during 4 weeks.

E. Data Analysis

Anxiety levels, Cortisol hormone levels, and Fetal Heart Rate was analysed by t-test, Mann Whitney test and Wilcoxon test.

F. Ethical Consideration

This study has been approved by the ethics committee of Poltekkes Kemenkes Semarang with no. 129/KEPK/Poltekkes-Smg/EC/2018 and each research subject examined in this study has first received and approved the informed consent from the researcher.

III. RESULTS

Table 1. Anxiety levels of Primigravide Trimester III in Treatment and Control Groups.

<table>
<thead>
<tr>
<th>Treatmet Group</th>
<th>Anxiety Total</th>
<th>Control Group</th>
<th>Anxiety Total</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode rate</td>
<td>Mild f (%)</td>
<td>Moderate f (%)</td>
<td>Mild f (%)</td>
<td></td>
</tr>
<tr>
<td>Bef 13 (65)</td>
<td>7</td>
<td>20 (75)</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aft 4 (20)</td>
<td>16 (80)</td>
<td>20 (50)</td>
<td>10 (50)</td>
<td>0</td>
</tr>
<tr>
<td>P</td>
<td>0.025</td>
<td></td>
<td>0.003</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 1 showed that the anxiety level in the treatment group before intervention was mostly in the moderate anxiety level as much as 65% and there was a change in the anxiety level after intervention that was mostly in the mild anxiety level as much as 80%. The anxiety level in the control group before intervention was mostly in the moderate anxiety level as much as 75% and there was a change in the anxiety level after intervention that was mostly in the mild anxiety level as much as 50%. P value before intervention was 0.602 (p value > 0.05) which meant that there was no difference. P value after intervention was 0.030 (p value < 0.05) which meant that there was a difference in the level of anxiety in the treatment group and control group after being given intervention.

Table 2. Cortisol Hormone Levels on Primigravide Trimester III in Treatment and Control Groups.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Control Mean±SD</th>
<th>Min±Max</th>
<th>*P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bef</td>
<td>170.4 ±65.147</td>
<td>182.26±42.11</td>
<td>91.93±39.9</td>
<td>0.333</td>
</tr>
<tr>
<td>Aft</td>
<td>103.88±45.3</td>
<td>65.147±17.6</td>
<td>230.82±36.2</td>
<td>0.001</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>0.001</td>
<td>0.001</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2 showed that the mean of cortisol level in the treatment group before intervention was 182.2 mmol and the mean of cortisol level in the control group before intervention was 170.4 mmol. The mean difference in the cortisol level in the treatment group was 117.1 mmol, while the mean difference in the cortisol level in the control group was 66.55 mmol. The test result on the difference in cortisol hormone levels before being treated showed a p value of 0.333 (p value > 0.05) which meant that there was no difference. P value after intervention was 0.001 (p value < 0.05) which meant that there was a difference in cortisol hormone levels between the treatment group and the control group before intervention. After being given treatment that the p value was 0.001 (p value < 0.05) which meant that there was a difference in cortisol hormone levels between the treatment group and the control group after intervention.

Table 3. Fetal Heart Rate on Primigravide Trimester III in treatment and Control Groups.

<table>
<thead>
<tr>
<th></th>
<th>Control Mean±SD</th>
<th>Min±Max</th>
<th>*P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bef</td>
<td>135.25±4.72</td>
<td>136.25±4.55</td>
<td>130±145</td>
</tr>
<tr>
<td>Aft</td>
<td>119±4.5</td>
<td>115.35±5.30</td>
<td>110±126</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>0.001</td>
<td>0.001</td>
<td>-</td>
</tr>
<tr>
<td>Diff</td>
<td>16.25±4.42</td>
<td>21.15±6.49</td>
<td>10±22</td>
</tr>
</tbody>
</table>

* Mann Whitney test and **Wilcoxon test
Table 3 showed that the mean of fetal heart rate in the treatment group before intervention was 136.25 x/minute and the mean of fetal heart rate in the control group before intervention was 135.25 x/minute. The mean of fetal heart rate in the treatment group after intervention was 115.35 x/minute and the mean of fetal heart rate in the control group after intervention was 119 x/minute. The mean difference in the fetal heart rate in the treatment group was 21.15 x/minute, while the mean difference in the fetal heart rate in the control group was 16.25 x/minute. The test result on the difference in fetal heart rate before being treated showed a p value of 0.547 (p value > 0.05) which meant that there was no difference in fetal heart rate between the treatment group and the control group before intervention. After being given treatment that the p value was 0.035 (p value < 0.05) which meant that there was a difference in fetal heart rate between the treatment group and the control group after intervention. The difference test for fetal heart rate showed a p value of 0.028 (p value < 0.05) which meant that there was a significant difference in fetal heart rate difference between the treatment group and the control group after intervention.

IV. DISCUSSION

The results showed that Hypnotherapy can significantly reduced Anxiety Levels in Primigravide Trimester III that because the basis for hypnotherapy is relaxation. Relaxation is a rest condition of body and soul (mind and feeling). Relaxation is defined as a technique used to support and obtain relaxation to reduce unwanted signs and symptoms such as pain, muscle tension and anxiety. When the body and soul are relaxed there is a reduction in the anxiety level with the termination of the anxiety circle, if someone is tense because of facing certain situations it will affect the central nervous system so that it sends a stimulus that will increase the response to anxiety and tension. If this condition is cut/stopped within a certain time then the level of individual anxiety will be reduced better. So in this conditions pregnant women will be more comfortable, relaxed and able to deal with the problems they face in the proper ways. [5]

A study conducted by Zuhrah on the effectiveness of hypnotherapy among pregnant women in the second and third trimester of pregnancy who experienced anxiety before labor proved that hypnotherapy was useful to help women during pregnancy, childbirth and postpartum periods. There was a significant difference between the control and intervention groups. The result is in line with this study that hypnotherapy performed by therapists in the intervention group for a month for 8 times therapy plus self hypnosis showed a significant difference in the anxiety level between the intervention group and control group. [6]

Hypnotherapy is a relaxation exercise that encourages relationship between mental, physical, emotional and spiritual states. Mental benefit obtained through relaxation is that it can provide a calming effect and reduce anxiety by increasing the inner bond with the prospective baby. The suggestion used as an object of concentration of additional attention will further deepen the sensation of love and comfort. In addition, pregnant women who perform self hypnosis at home every day routinely will help them to reduce anxiety and fear during labor process. Anxiety causes a stressor in the cerebral cortex which can affect the hypothalamus to release CRH-ACTH neuropeptide in the maternal endocrine system, one of which is an increase in the level of cortisol hormone. At the same time the hypothalamus in the anterior pituitary affects the sympathetic nerves which stimulate the adrenal medulla to release epinephrine and norepinephrine so that anxiety increases. An effort to manage anxiety in pregnant women is by using hypnotherapy through several stages which include pre induction, induction, deepening, deep level test, suggestion and termination stages. This technique affects the brain waves from beta to alpha and then to theta, and simultaneously the posterior pituitary stimulates the sympathetic nerves for relaxation and the anxiety level, cortisol levels and fetal heart rate may decrease into normal state. [7]

The results of this study showed a significant decrease in fetal heart rate in both groups. This phenomenon occurred because hypnotherapy plus routine self hypnosis did not provide an opportunity for respondents to think negatively. Hypnotherapy is useful for improving blood circulation and optimizing lung capacity to gain more oxygen and nutrients to be absorbed by the body's organs, including delivering more oxygen and nutrients to the fetus. Especially, relaxation can smoothen the blood flow to the uterus, blood circulation can also be smoothen, the oxygen and nutrient-rich blood pass through the placenta into the fetal body through the umbilical vein, most of the blood flows to the inferior vena cava through the ductus and enters the right atrium. From the right atrium, most of the blood flows to the left atrium and is pumped into the aorta, then the blood from the aorta will flow to the entire body of the fetus which carries oxygen and nutrients. [7]

V. CONCLUSIONS

There were differences in the anxiety level, the level of cortisol hormone and fetal heart rate between the treatment group and the control group which meant that hypnotherapy was evidenced to have an effect on the changes in the anxiety level, the level of cortisol hormone and fetal heart rate among primigravide in the third trimester of pregnancy in Bergas Public Health Center in 2018.

REFERENCES


[7] Marzieh Akbarzade, MSc; Bahare Rafiee, MSc; Nasrin Asadi, MD; Najaf Zare4, P. (2015). The Effect of Maternal Relaxation Training on Reactivity of Non-Stress Test , Basal Fetal Heart Rate , and Number of Fetal Heart Accelerations , 3(1), 51–59.