

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

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**Abstract** - During pregnancy, pregnant women may experience anxiety, thoughtfulness, and fear resulting in increased cortisol hormone of 2-4 times a 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 analyzes the differences in the anxiety level, cortisol level, and fetal heart rate among primigravidae in the third trimester of pregnancy after hypnotherapy with a quasi-experimental study. The instrument to assess anxiety was the ZSAS questionnaire, and cortisol examination was performed with ELISA method, fetal heart rate was measured using Doppler. From data analysis 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 a 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.<sup>[1]</sup>

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 bloodstream.<sup>[2]</sup> At the same time, the hypothalamic corticotrophin releasing system stimulates the anterior pituitary gland to release the adrenocorticotropin (ACTH) hormone.

ACTH then stimulates the adrenal cortex to release steroid hormones, especially cortisol.<sup>[3]</sup>

Hypnotherapy is a therapy given to patients in a hypnotic/unconscious condition<sup>[3]</sup> 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.<sup>[4]</sup>

A preliminary study has been carried out at Bergas Community Health Center on 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 BergasCommunity 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 primigravide mothers trimester III that have anxiety problems (mild and moderate anxiety scale), and by purposive technique sampling, the sample in this study is 40 women.

### C. Instrument

Hypnotherapy was given by a certified trainer from the Indonesian Board of Hypnotherapy that focused on each individual sample problem (anxiety problem) until the anxiety levels are reduced. The hypnotherapy trainer has a modul that has been standardized as a guide when given the treatment to the sample.

The instrument to assess anxiety was the ZSAS questionnaire, and 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**

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

For the control group, as many 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 analyzed 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 informed consent from the researcher.

**III. RESULTS**

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

	Treatment Group		Control Group		P		
	Anxiety	Total	Anxiety	Total			
	Mode rate f (%)	Mild f (%)	Mod erate f (%)	Mild f (%)			
Bef	13 (65)	7 (35)	20 (100)	15 (75)	5 (25)	20 (100)	0.602
Aft	4 (20)	16 (80)	20 (100)	10 (50)	10 (50)	20 (100)	0.030
<b>P</b>	<b>0.025</b>		<b>0.003</b>		<b>-</b>		

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 the 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 the 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 the 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.**

	Mean±SD		Min ±Max		*P-value
	Control	Treatm ent	Control	Treatm ent	
Bef	170.44 ±39.9	182.26 ±36.2	89.65± 230.82	91.93± 230.82	<b>0.333</b>
Aft	103.88 ±45.3	65.147 ±17.6	56.10± 211.10	42.11± 97.29	<b>0.001</b>
<b>**P</b>	<b>0.001</b>	<b>0.001</b>	-	-	<b>-</b>
Diff	66.55± 31.8	117.11 ±40.8	19.72± 122.31	27.97± 185.89	<b>0.000</b>

\* *Mann Whitney test* and \*\**Wilcoxon test*

Table 2 showed that the mean cortisol level in the treatment group before intervention was 182.2 mmol, and the mean 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 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.**

	Mean±SD		Min ±Max		*P-value
	Control	Treatm ent	Control	Treatm ent	
Bef	135.25 ±4.72	136.25 ±4.55	130 ±145	130± 145	<b>0.547</b>
Aft	119±4.34	115.35 ±5.30	110 ±126	107± 125	<b>0.035</b>
<b>**P</b>	<b>0.001</b>	<b>0.001</b>	-	-	<b>-</b>
Diff	16.25± 4.42	21.15± 6.49	10 ±22	12 ± 38	<b>0.028</b>

\* *Mann Whitney test* and \*\**Wilcoxon test*

Table 3 showed that the mean fetal heart rate in the treatment group before intervention was 136.25 x/minute, and the mean fetal heart rate in the control group before intervention was 135.25 x/minute. The mean fetal heart rate in the treatment group after the intervention was 115.35 x/minute, and the mean fetal heart rate in the control group after the 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 could significantly reduce Anxiety Levels in Primigravide Trimester III 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, and 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 these conditions, pregnant women will be more comfortable, relaxed, and able to deal with the problems they face in the proper ways.<sup>[5]</sup>

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.<sup>[6]</sup>

Hypnotherapy is a relaxation exercise that encourages the relationship between mental, physical, emotional, and spiritual states. The 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 everyday routine will help them to reduce anxiety and fear during the 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 a normal state.<sup>[7]</sup>

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, and blood circulation can also be smoothened, 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.<sup>[7]</sup>

#### 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.

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