HEAT SHOCK PROTEIN 90 EXPRESSION AND CORTISOL IN DELIVERY OF PSYCHOCURATIVE- RECEIVING PRIMIGRAVIDAS

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OBJECTIVES
Explaining the mechanism of normal partus in the psychocurative-receiving primigravidas.

<table>
<thead>
<tr>
<th>Group</th>
<th>Total</th>
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<tr>
<td></td>
<td>cnt</td>
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<td></td>
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<tr>
<td>Normal</td>
<td>38</td>
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<tr>
<td>Abnormal</td>
<td>12</td>
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<tr>
<td>Total</td>
<td>50</td>
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</tbody>
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Table 1. Total of Normal and Abnormal Labor

METHODS
Experimental research was conducted in RSDM Surakarta and Sragen, Central Java, Indonesia. Samples comprised 24 primigravidas of 32 weeks gestational age. Treatment group was given with psychocurative as the dosage. At 32 weeks gestational age, 2-3 cm cervical dilatation, and cervical dilatation, all samples were examined for cortisol and Hsp 90 variable. Data analyzed were regarding the frequency of normal delivery, length of phase in one, and examined variables treatment and control groups.

Graphs and tables

Table 2. Time average of normal and abnormal labor

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
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<tbody>
<tr>
<td>Normal</td>
<td></td>
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<tr>
<td>Abnormal</td>
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Table 3. Biological delta data average between 32 weeks gestational age and 23 cm cervical dilatation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Delta</th>
<th>SD</th>
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Table 4. Biological delta data of 2.3 cm cervical dilatation and complete dilatation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Delta</th>
<th>SD</th>
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Table 5. Delta biological data average of 32 weeks gestational age and complete dilatation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Delta</th>
<th>SD</th>
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</thead>
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</table>

RESULTS
Mean of cortisol in treatment group showed reduction, while the Hsp 90 increased. The difference of the age of delivery of 32 weeks gestational age and 2-3 cm cervical dilatation using multivariate test revealed c<0.05. The difference between cervical dilatation of 2-3 cm and complete dilatation, using multivariate test had b>0.05. The difference of 32 weeks gestational age and complete dilatation using multivariate test revealed c<0.05. Distribution of normal delivery with Chi-square test revealed p = 0.006. Anova test of the first phase of normal delivery revealed p = 0.00.

CONCLUSIONS
Psychocurative significantly reducing cortisol, Hsp 90 increasing, uterine contraction increasing, thereby normalizing the delivery.

References

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ABSTRACT

Objective: Explaining the mechanism of normal partus in the psychocurative-receiving primigravidas.

Material and Method: Experimental research was conducted in RSDM Surakarta and Sragen. Samples comprised 24 primigravidas of 32 weeks gestational age. Treatment group was given with psychocurative dosage. At 32 weeks gestational age 2-3 cm cervical dilatation, and complete dilatation, all samples were examined for cortisol and Hsp 90 variable. Data analyzed were regarding the frequency of normal delivery, length of phase in one, and examined variables treatment and control groups.

Result: Mean of cortisol in treatment group showed reduction, while the Hsp 90 increased. The difference of the age of delivery of 32 weeks gestational age and 2-3 cm cervical dilatation using multivariate test revealed $\alpha<0.05$. The difference between cervical dilatation of 2-3 cm and complete dilatation, using multivariate test had $\alpha>0.05$. The difference of 32 weeks gestational age and complete dilatation using multivariate test revealed $\alpha<0.05$. Distribution of normal delivery with Chi-square test revealed $p = 0.006$. Anova test of the first phase of normal delivery revealed $p = 0.00$

Conclusion: Psychocurative significantly reducing cortisol, Hsp 90 increasing, uterine contraction increasing, thereby normalizing the delivery.

Keywords: primigravida, psychocurative, cortisol, heat shock protein, uterine contraction, normal delivery
INTRODUCTION

Primigravida is a woman’s psychological stressors, stress cause negative effect or distress, especially in young primigravida (<20 years) and older (> 35 years), arising from 32 weeks gestational age and the intensity increases as the aging of pregnancy until near labor. According to Sarwono, this condition causes abnormal labor impacts. Darmayanti says, the provision of information about pregnancy and childbirth through group discussions could change the psychological condition, lowers the intensity of stress in pregnant women, with the impact of a normal delivery. The mechanism of the decreasing effect the intensity of stress on a normal delivery changes can not be explained biologically. Changes in psychological conditions, other than the benefit to harm, to make the changes necessary psychological conditions favorable psychological intervention dose (psychocurative) that optimally match the intensity stressor.

This study aims to explain the mechanism of biological psychocurative effects to changes in abnormal labor becomes normal in a primigravida distress. Psychocurative made consisting of support cognitive, social, spiritual and physical, given once week together and three times per week individual in the home, duration 60 minutes from 32 weeks gestational age until delivery opening of 2-3 cm. The sampling inspection at 32 weeks gestational age, the opening of 2-3 inches and a complete opening of both the treatment and control. Psychological intervention research done that concepted strengthens the muscles associated with childbirth (abdominal and pelvic floor muscles). This study psychocurative associated with biological circumstances.

RESEARCH METHOD

Experimental studies, the draft Pre Test Post Test Control Group Design

Population and sample

Primigravida 32 weeks, the stress intensity is measured through a questionnaire prepared by the stress that causes stress initial survey. The sample size was calculated based on the formula of James E. Higgins.

\[ n = \frac{1}{(1-f)} \cdot \frac{2(z_a + z_b)^2 \cdot Sc^2}{(Xc - Xt)^2} \]

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Note:

- \( n \) : Count samples in group
- \( \bar{X}_c \) : The mean of the control group
- \( \bar{X}_i \) : The mean of experimental group
- \( S_c \) : Control standard deviations (from preliminary studies)
- \( f \) : Proportion fails (drop out) (from preliminary studies)
- \( Z_a \) : Standart value \( \alpha \ 0.05 = 1.96 \)
- \( Z_B \) : Standart value \( \beta \ 0.05 = 1.28 \)

The calculation of minimum number of samples per group 10.19, rounded to 11. In this study the use of 12 (twelve) samples of each group.

Inclusion Criteria

1. Primigravida.
2. Age 20 years - 35 years.
3. Within 32 weeks of pregnancy.
4. The percentage back of the head.
5. Pelvic size within normal limits.
7. Religion Islam
8. Single fetus, alive.
9. Hospitalization class III.
10. Primary and junior education.

Exclusion Criteria

1. pregnancy serotinus
2. prematurity
3. accident
4. infection
5. Premature rupture of membranes
6. Pre-eclampsia and eclampsia
7. Antepartum hemorrhage

Identification of Research Variables

1. The independent variables : Psychocurative
2. Dependent variables : Hsp 90, cortisol, type of delivery and duration of the first stage of labor.

Mechanism of the Research

1. The experiment was conducted at the Hospital Dr. Moewardi Surakarta and Sragen, Prodia clinics Laboratory, clinic laboratory of Hospital Dr. Moewardi Surakarta.
2. Conduct a survey to find subjects who meet the inclusion and exclusion criteria, for both experimental and control, and provide inform consent.
3. Checking biological indicators: levels of cortisol, Hsp 90, and the stress by providing stress questionnaire.

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5. Questionnaire stress tested the validity and reliability to determine the stress questionnaire valid and reliable. From the results obtained stress intensity stress questionnaire sample, the basis used to determine the dose psychocurative.

6. The treatment group received psychocurative dose has been determined, while the control group did not. Psychocurative given by a midwife who had previously been trained in counseling by a psychologist and researcher.

7. Implementation psychocurative predetermined schedule.

8. Each completed exercise discussion, mothers were asked to tell or write the changes / complaints what experienced during psychocurative.

9. Once completed psychocurative, in childbirth opening 2-3 cm and a complete opening, examined levels of Hsp 90, using ELISA method with a monoclonal antibody anti-Hsp 90, and peripheral blood cortisol levels.

10. Data analysis

<table>
<thead>
<tr>
<th>Table 1. Total of Normal and Abnormal Labor</th>
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<tbody>
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<td><strong>Group</strong></td>
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<td>Total</td>
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<tr>
<th>Table 2. Time average of normal and abnormal labor</th>
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<td><strong>Group</strong></td>
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<td>Treatment</td>
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<table>
<thead>
<tr>
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<th>Group</th>
<th>Average</th>
<th>DS</th>
<th>V</th>
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</thead>
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<tr>
<td>D_Hsp90</td>
<td>Control</td>
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<td>Treatment</td>
<td>3.968</td>
<td>15.3822</td>
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Table 4. Biological data delta of 2-3 cm cervical dilatation and complete dilatation

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<thead>
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<th>Group</th>
<th>Average</th>
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<td>Treatment</td>
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<td>8.4967</td>
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Table 5. Delta biological data average of 32 weeks gestational age and complete dilatation

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DISCUSSION

Based on the questionnaire of stress, it is known that all samples in distress conditions. Psychocurative empirically shown improves the delivery process, increase the percentage of normal delivery and speed up the delivery time primigravida distress. Psychocurative is based on research and questionnaire pendahuluan stress\textsuperscript{2}. Psychocurative proven to reduce the intensity of stress in pregnant primigravida, change the perception of stress primigravida mother of distress into eustress. Changes in distress into eustress caused by changes in the perception of support cognitive, social, and spiritual, physical support through product being used as a variable, expressing stress response that increases muscle contractions of the uterus.

At the age of 32 weeks until the opening of 2-3 cm happen biological condition changing (p = 0.04). Psychocurative proven to increase Hsp 90 and lowers cortisol, mean psychocurative can increase uterine contractions. This analysis strengthens evidence an increasing number of normal labors and shorten labor time. At the opening of 2-3 cm labor to complete, no changes in biological conditions (p = 0158). Psychocurative has no effect on the delta of the period, because in this period there are additional stressors pain from opening before labor which was not predicted before the study. This is due to the stress questionnaire created does not include pain stressor. The research sample of primigravida mother has no experience of pain during labor. Psychocurative dose increased primarily physical support in the form of relaxation or psychocurative with a more customized formulations with the results of new poll, conducted in labor to complete the opening of 2-3 cm, it will probably have an effect on this period and were able to distinguish between treatment and control. At the age of 32 weeks to complete the opening of happened biological conditions changing (p = 0.000). Psychocurative proven to increase Hsp 90 and lowers cortisol. These results strengthen the evidence that the effect of a given psychocurative still be useful in the treatment group in the opening period 2-3 cm to complete, as evidenced by an increase in the percentage of normal labor and fasten the time. Psychocurative mainly support cognitive, social, and spiritual stress able to change the perception of distress into eustress. In concept Dhabar\textsuperscript{10} explained that stress is classified into stress perception and stress response. Support cognitive, social, and spiritual influence on the formation of stress perception. Weiten\textsuperscript{11} explained that perception has 3 (three) stages of selection, organization and interpretation. Support cognitive, social, and spiritual given to pregnant women to influence the process of selection, organization and interpretation, giving rise to changes in stress perception of distress into eustress. Physical support in the form of relaxation training would positively affect the stress response. Cadice Pert (Putera, 2005)\textsuperscript{12} shows the close relationship between emotions and biological. Psychocurative signal delivery will reach neurons in the paraventricular nuclei (PVN) in the limbic system, so that the intensity of stress turun\textsuperscript{4}. Primigravida psychological stressor causing expression of astrocytes in the amygdala, the hypothalamus and the resulting neurogia neurogia, especially astrocytes and microglia activation. Astrocytes and microglia activated will produce Hsp functioning as chaperonin\textsuperscript{13} 14 15 16. Chaperonin This will enable a variety of cytokines, namely IL-1B, IL-2, IL-6, and IFN-a produced by activated astrocytes and microglia. These cytokines trigger Paraventricular nuclei (PVN) of the hypothalamus produces corticotropin releasing hormone (CRH) signaling molecules, which acts as a conductor psychocurative signals that can affect cell receptor hipofisianterior basophils. Anterior pituitary basophils cell become activated and produce adrenocorticotropic hormone
ACTH affect zone cell of the adrenal cortex to produce cortisol fasilata. Cortisol is bimodal, it means that if the level is higher than normal threshold is suppression, but if it is still below the normal threshold is proliferative. In this study, increasing cortisol is under the threshold so that an increase in protein synthesis and proven levels of Hsp 90 increase. Alexy, Avisar said Hsp effect on increasing the amount of calcium in myocytes. Hsp also cause an increase in cAMP concentration in the cytoplasm and activation of cAMP-dependent protein kinase. Then cause postortal and inactivation of myosin chain kinase and cause muscle contraction. Increased Hsp energize the myocytes increased with the impact of myometrial contractions. In this study proved psychocurative able to increase the percentage of normal delivery and speed up delivery time. This study has two treatment groups birth mother is not normal, it turns out the two mothers in the implementation of both joint and individual psychocurative showed inactivity and laziness, so the effect on cortisol levels (increase), and decreased synthesis of Hsp 90. This study contained three groups of mothers apparently normal birth control three mothers are following the activities of Private RB pregnancy exercise on their own accord, so that cortisol levels increased and decreased synthesis of Hsp 90. Psychocurative the perception of stress resulting in a positive perception of the birth. This condition lowers cortisol suppression effect, resulting in increased Hsp 90, the impact of an increase in calcium and protein kinase-dependent enzymes that increase the energy for muscle contraction the uterus so that the birth was normal.

NEW DISCOVERY

1. Finding psychocurative models are shown increases the number of normal births.
2. The concept that explains the mechanism of increased uterine contractions after psychocurative giving using the paradigm of psychoneuroimmunology. Psychological intervention research done, concept strengthen the muscles associated with childbirth (abdominal and pelvic floor muscles). This study is associated with the state of biological psychocurative

LIMITATIONS OF RESEARCH

1. Pain stressors that arise in the delivery process was not predicted before the research done, because the samples were primigravida mother.
2. Field conditions in this room that is used for individual home psychocurative especially can not be standardized, as well as a variety of sample conditions difficult to control. In this study, researchers considered the old conditions and the situation of the study sample.

CONCLUSION

1. Overall study sample under stressful conditions
2. Psychocurative increase the incidence of normal parturition in primigravida
3. Psychocurative shortening (normal range) at the time of the delivery,
4. Psychocurative lowers cortisol levels
5. Psychocurative increases Hsp 90.

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SUGGESTION

1. Psychocurative given to every pregnant women, especially primigravidae with low formal education (junior high school to down).
2. Further studies with a larger dose of psychocurative primarily on the physical support for the benefit of labor, especially on the eve of the opening of 2-3 cm to complete opening.
3. Need to study biological data on animal tissues are given psychological stress, using tissue samples.
4. Publication of the research results as well as an interesting psychocurative guidebook.
5. Discussion and sample intensive supervision to minimize the differences/diversity of samples that are difficult to control.

REFERRENCE


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