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ORIGINAL RESEARCH

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EFFECT OF INVOCATION (DO'A) ON PAIN-COPING BEHAVIORS OF PRIMIPAROUS MUSLIM WOMEN DURING THE FIRST THREE HOURS OF THE ACTIVE PHASE OF LABOR

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ABSTRACT

Background: Pain-coping behavior of primiparous women may have adverse effects on the mother and fetus. In Tangerang, the majority of pregnant women have negative experiences of pain and pain-coping behaviors during labor.

Objective: The purpose of this study was to examine the effect of the invocation (do'a) on pain-coping behaviors of primiparous Muslim women during the first 3 hours of the active phase of labor.

Methods: It was an experimental study with pre-posttest design. Ten primiparous women were randomly selected and assigned to the control and intervention group. Each group consisted of 5 participants. Pain-coping behavior was measured by the Pain Behavior Observation Scale (POBS).

Results: Findings revealed that pain-coping behaviors were increased for those who received the invocation (do'a) with $p\text{-value} < .05$ than those who received the routine care. The effectiveness of *do'a* could be seen from the average difference of scores of pain-coping behaviors before and after intervention. The intervention group significantly had higher pain-coping behaviors than the control group during three hours of posttest, while controlling for the pretest measure, $F(3.24) = 15.68, p < .001$.

Conclusions: The invocation (*do'a*) program for primiparous women during labor is feasible to be conducted, and effective to increase pain-coping behaviors. Therefore, it is suggested to provide this program for primiparous women during the first 3 hours of active phase of labor.

Keywords: invocation (*do'a*) program, women in labor, pain-coping behaviors, primiparous women

INTRODUCTION

Pain-coping behaviors is about how pain is expressed by a person.^{1,2} Lower pain-coping behaviors may increase the pain and disturb the maternal autonomic functions and cause the release of catecholamine, resulting in which lead to inhibition of uterine activity and prolonged labor,³ that is the primary reason for increased number of cesarean sections.⁴

In Islam, Allah SWT will give a wisdom and promise a great reward for mothers who are struggling against pain and increasing pain-coping behaviors in childbirth.^{5,6} On the other hand, analgesic medications may not be given in several hospitals because the side effects of the analgesics can cause adverse effects on women and infants. Invocation (*do'a*) for women in labor is a non-pharmacological pain management that has been found effective for post-section caesarean and other post-operative pain. It may have some effects on labor pain because spiritual aspect of the patient is very important in increasing pain-coping behaviors and suffering.

Unrelieved labor pains cause the mother to use poor coping strategies that is expressed by a woman.^{7,8,9} The responses of pain behaviors include facial expressions, vocalization, bodily movement, breathing control, and communication.^{1,10} Primiparous women who were accompanied by their husbands or family were in better condition.¹¹

As professionals, nurses must give the holistic care, view person's body, mind, and spirit to increase pain-coping behaviors. Nurses are obligated to care for the physical, emotional, and spiritual uniqueness of each person.¹² A nurse's concern of cultural, traditional practices, beliefs, and spiritual importance during pregnancy can increase pain-coping behaviors in order to prepare for birth

easily.^{13,14} Cultural aspects, religious beliefs and myths are known to influence the perception and interpretation of pain and can play a vital role in a woman's effort to cope with pain in normal labor. The spiritual aspect of the patient is very important in increasing pain-coping behaviors and suffering.¹⁵ Research has shown that Islamic praying in maternity care is only listening to holy Quran, which is passive.^{16,17} However, there are still many kinds of treatment in Islam, such as *sholawat*, *asmaul husna*, *do'a*, *ruqyah*, etc.¹ Therefore, this study aims to examine the effect of *do'a* as one of Islamic treatments to increase pain-coping behaviors of primiparous women in labor.

METHODS

An experimental study with pretest and posttest design to examine the effect of the invocation (*do'a*) program on pain-coping behaviors in primiparous women. The subjects were primiparous women who was recruited in the latent phase of labor. The inclusion criteria include: 1) singleton pregnancy (2) have family member, (3) normal gestation for birth (4) normal fetal heart rate (120-160 beats per minute), by using a Doppler stethoscope, (5) latent phase no more than 12 hours, (6) cephalic presentation to control presentation (occiput posterior), (7) without any health complications (mother or fetus), and (8) accompanied by family. Participants were excluded from the study if mother or fetus had any complications, such as women with asthma, HIV, fetal distress, etc.

Women who met the inclusion criteria were randomly assigned to groups using block randomization to control extraneous variable. The homogeneity of the subjects can minimize the group differences between experimental and control group. The

researcher randomly assigned the participants either into the experimental or control groups. Five women in the experimental group received the invocation program from the researcher, and five of women in the control group received the standard care from maternity nurse-midwifery in antenatal clinic and labor room at CHC Pamulang. There was no woman withdrawn from this study. All of women in both groups completed in antenatal and labor room (3 hours after cervical dilation 3-4 cm). This study was approved by Ethical Committee from BBH hospital, Banten, Indonesia.

The intervention program given by researcher includes: breathing (during uterine contractions), and invocation (*do'a*) for women in labor (during inter uterine contraction), accompanied by family during the first 3 hours of the active phase of labor. The program starts when cervical dilation 3 or 4 cm, which was conducted for three times. After birth, at the end of the program, the researcher then interviewed the participants and their families about the perceived helpfulness of the *do'a* program.

In this regard, the registered nurse or midwife who worked at labor room in the CHC introduces the researcher to the eligible participants. After having 10 women and family that met the inclusion criteria, the researcher then explained about the program. Inform consent was performed prior to study.

Pain-coping behaviors were measured at the start of study before the intervention was started, and then every hour during the program (3 hours after the treatment) with bedside observation.

There were two instruments used

for this study, namely the Demographic Data Questionnaire (DDQ) and Pain Observer Behavior Scale (POBS). The DDQ consists of the demographic data and obstetric data. Demographic data includes age, level of education, ethnic, occupation, income (family income), weight, height, and family support in the labor room. Obstetric data like weeks of gestation, problem during pregnancy, membranes ruptured (received artificial rupture of membrane or spontaneous rupture of membrane), characteristic of amniotic fluid, painful menstruation, number of times of receiving antenatal, type of analgesic drug that women received during labor. The researcher observed the pain-coping behavior of women for 4 times; pre-test, 1 hour, 2 hour, and 3 hours from cervical dilation 3-4 cm.

Pain Observer Behavior Scale (POBS) was used to measure pain-coping behavior. It consists of five behaviors of respondents during uterine contraction and relaxation: vocalization, body movement, breathing control, facial expression, and communication. The kinds of behavior that include score 1, 2, and 3 (Likert Scale). This form uses scores from 1 to 3. Bad behavior = 1, middle behavior = 2, and good behavior = 3. The total competence score ranges from 5 to 15. A lower score indicates the respondent displays poor pain-coping behaviors and vice versa.

RESULTS

Demographic and obstetric data

The demographic data and obstetric data were analyzed and described with frequency, mean, and standard deviation (See Table 1).

Table 1 Frequencies and percentages of demographic data for experimental and control group (n=10)

Characteristics	Experimental Group	Control group	X^2/t statistics P-value	
	<i>f</i> (%)	<i>f</i> (%)		
Age [year; mean (SD)]	23.80 (4.38)	23.20 (4.38)	-.21	0.834
Educational level				
Elementary school				
Junior high school	1 (20)	1 (20)	2.66	0.44
Senior high school	2 (40)	4 (80)		
Diploma	1 (20)	-		
Bachelor	1 (20)	-		
Master	-	-		
Doctoral	-	-		
Ethnic				
Javanese	2(40)	2(40)	0.000	1.000
Minangnese	-	-		
Sundanese	-	-		
Betawinese	3(60)	3(60)		
Melayunese	-	-		
Occupation				
Housewife	3 (60)	4 (80)	3.14	0.208
Unemployed	-	1 (20)		
Government	2 (40)	-		
Private (no government)	-	-		
Income real [Mean: (SD)]	3.600.000 (2.678.619)	3.300.000 (1.643.167)	-.217	0.836
Income (family) per month				
< Rp 2,710,000	3 (60)	2 (40)	5.20	0.74
Rp 2,710,000-5,000,000	-	3 (60)		
>Rp 5,000,000	2 (40)	-		
Weight [Mean: (SD)]	79.60 (7.36)	78.20 (6.76)	-.313	0.76
Height [Mean: (SD)]	157.60 (5.27)	158.20 (7.72)	.143	0.88
Family support during the 3 hours of the study in the active phase of labor				
Mother	1(20)			
Mother in law			6.66	0.083
Female relative				
Husband	1(20)	5(100)		
Mother, husband, mother in law	1(20)			
Mother and husband	2(40)			

The hypothesis of the invocation (do'a Islamic) program that would be effective for increasing pain-coping behavior was supported. The repeated measure of ANOVA analysis of covariance showed that the intervention group had significantly higher pain-coping behavior than the control group during 3 hours posttest, while controlling for the pretest measure, $F(3.24) = 15.68$, $p < .001$, effect size = .66, a power = 1.000 (see figure 1). Independent t-test of

group differences at each data point presents that the intervention group had effectively increase pain-coping behavior scores at each posttest, compared to the control group; first posttest, $t = -3.53$, $p < .05$; second posttest, $t = -3.20$, $p < .05$; third posttest, $t = -4.53$, $p < .05$. It can be said that the do'a Islamic program is one strategy that can promote the way to increase pain-coping behaviors for active phase of labor.

Table 2 Frequencies and percentages of obstetric data for experimental and control group (n=10)

Characteristics	Experimental group	Control group	χ^2/t statistics P-value	
	f(%)	f(%)		
Weeks of gestation age in Health Teaching [Weeks, Mean: (SD)]	1032 (0.00)	32.20(0.44)	1.000	.347
Health problems during this pregnancy				
(No)	5 (100)	5 (100)	-	-
(Yes)	-	-		
Membranes ruptured				
(No)	4(80)	5(100)	0.476	0.49
(Yes)	1(20)	-		
Painful menstruation				
(No)	5(100)	3(60)	2.50	.114
(Yes)	-	2(30)		
Number of times of receiving antenatal care [Mean: (SD)]	10.40 (3.91)	10.60(2.30)	0.99	0.924
Type of analgesic drug that women received during labor				
None	5 (100)	5(100)	-	-
Pethidine (IM).....mg	-	-		
Morphine (IM).....mg	-	-		
Pethidine (IV)..... Mg	-	-		
Morphine (IV)..... Mg	-	-		
Received artificial rupture of membrane				
No	4(80)	2(60)	3.143	0.208
Yes -before study				
-during study				
-after study, in active phase	1(20)			
-second stage of labor		3(60)		
Spontaneous rupture of membranes				
No	1(20)	2(40)	4.33	0.36
Yes-before study		1(20)		
- during study	1(20)			
-after study, in active phase	3(60)	1(20)		
-second stage of labor		1(200)		
Characteristic of amniotic fluid				
Clear meconium	3(60)	3(60)	0.000	1.000
Mild meconium	2(40)	2(40)		
Thick meconium				
Gestational age at birth [Mean: (SD)]	40.20 (0.44)	39.60(0.89)	-1.342	0.217
Apgar Score at 1 minute [Mean: (SD)]	9.00(0.00)	8.60 (0.54)	-1.633	0.141
Apgar Score at 5 minutes [Mean: (SD)]	10.00(0.00)	9.60 (0.54)	-1.633	0.141
Baby weight [Mean: (SD)]	3288(395.56)	3100(380.78)	-0.766	0.466

Table 3 Means and standard deviations of pain-coping behavior by group

Data points	Experimental roup		Control group	
	M	SD	M	SD
Pre-test	8.20	0.44	8.40	0.54
First hour posttest	9.80	0.44	8.80	0.44
Second hour posttest	10.00	0.70	8.80	0.44
Third hour	11.20	1.09	8.80	0.44

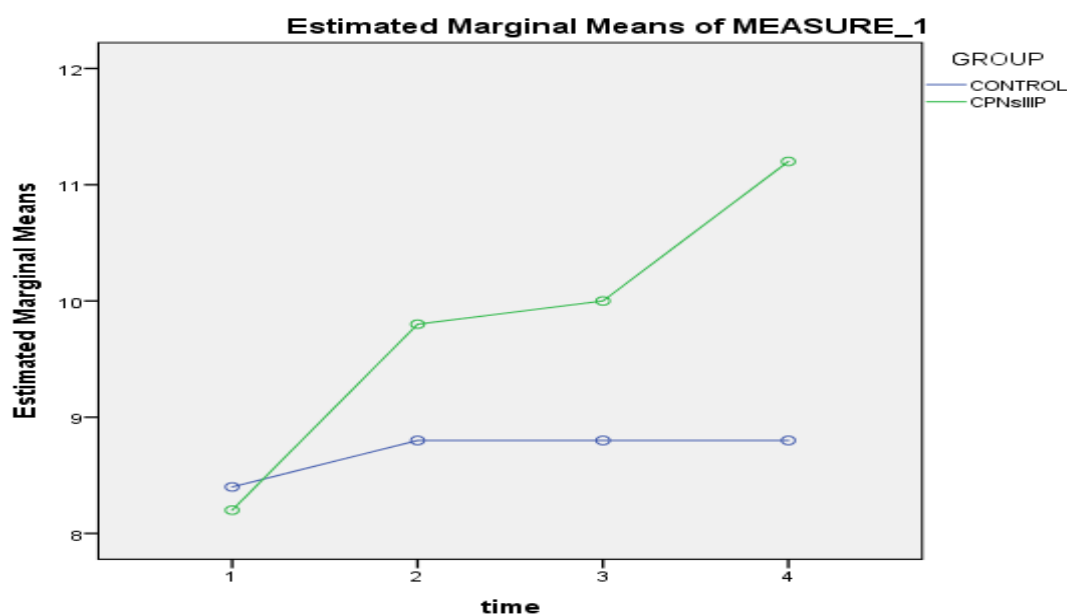


Figure 1 Mean of pain coping behaviors was significantly higher in the invocation (do'a Islamic) group compared to the control group (n=10)

DISCUSSIONS

Findings of this study showed that there were significant differences in pain-coping behaviors between the experimental and control group after receiving the program in the first 3 hours of active phase of labor. This was the first study to examine the *do'a* Islamic program integrated with nursing intervention.

Participants in the experimental group conducted *do'a* and breathing for 3 hours, and found that helpful for increasing pain-coping behaviors, but the opposite result for the control group. The groups of the study were homogeneous and did not find any confounding variables. This finding is consistent with a seven previous study.¹⁶⁻²¹ The researchers revealed that a listening to holy Quran can decrease pain and increase pain-coping behaviors during labor and post caesarean section. The results of this study supports the endorphins releasing theory indicated that concentration by focusing on God (Allah in Islam) can create harmonization

and release endogenous opioids (endorphin, enkephalin, dynorphins, etc.) in the hypothalamus, which can increase serotonin and production of the neuro-hormone, endorphins; make the feeling of calm, relief pain, and increase the pain-coping behaviors.^{22,23,24} Physio-psychological and sociocultural factors, and fully understanding about spirituality are very needed during childbirth.²⁵ This present study applied all those factors, like breathing that increases blood flow-improved O₂; family support increases confident, reduces fear-anxiety; and *do'a* can make a good relationship with God (Allah), therefore all of those can increase pain-coping behaviors. Spiritual understandings give a sense of purpose and meaning of life.²⁶ Nurses on this point are able to expand their nursing practice through praying, persons are taught to pray and stay to get full of God's love.²⁷

There were several limitations in this study. The assumption of equality of variance was not met statistically. The

generalization of the findings may be limited due to the small sample.

CONCLUSION

This study has shown that do'a Islamic integrating nursing intervention can increase pain-coping behaviors in the active phase of labor. It is recommended for nurses and midwives to provide this program to increase pain coping behavior of women in labor. The future study is recommended to examine this invocation program and consider to: 1) start testing program in the latent phase, 2) continue conducting the program until baby is born, 3) test the program by comparing multiparous and primiparous women.

Declaration of Conflicting Interest

None declared.

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Authorship Contribution

This study is the original work of the corresponding author.

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