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Research Article

Effectiveness of Zilgrei Method Towards Labor Output Among Primigravida Mother in Indonesia

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Abstract

Aims : the study aimed to test the effectiveness of the zilgrei methode in primigravida mother with second stage labor of long second stage, incidence laceration, infant condition and the scale pain of labor.
Methods : The study used a queasy experimental design with a control group, collecting primary data through observation, partographs, APGAR score, and pain scale assessment for 6 months.
Result : The result of the bivariate test shows that the mean comparison of the long second stage was different between the two groups (p-value 0,001). No significant difference in the proportion of the incidence laceration (p= 0.370), APGAR score at first, fifth, and ten minutes (p>0.005). There was a significant comparison of pain scale between a group with and without Zilgrei Method (p=0.000).
Conclusions : Based on the results of this study Zilgrei method can be applied as an alternative non-pharmacological method to shorten the second stage and reduce pain on labor. For further research, it is necessary to consider controlling the weight of a born baby and maternal risk factors to determine the effect of applying the Zilgrei method optimally to the laceration of the birth canal and the condition of the baby at birth.

Keywords
APGAR score, Laceration Pain, Mother, Second Stage, Zilgrei Method

INTRODUCTION

Based on the 2013 Riskesdas data, the highest proportion of birth attendants was Midwife (68.6%). Midwives are recognized as professionals who serve women in every life cycle. One of the midwifery professional standards is to provide care during labor and birth (1). In conducting care during labor and birth, midwives are authorized to conduct care in normal deliveries (2). Childbirth is the process by which the baby, placenta, and membranes exit the maternal uterus. Labor begins since the uterus contracts and causes changes in the cervix (opening and thinning) and ends with the birth of the placenta completely. The mother is not yet pregnant if uterine contractions do not cause cervical changes (3,4).

The main objective of childbirth care is to strive for survival and achieve a high degree of health for mothers and their babies through various integrated and complete efforts and minimal intervention so that the principle of safety and quality of service can be maintained optimally. The guideline used by midwives in carrying out childbirth assistance is a reference to normal delivery care. In this reference, it was stated that when labor enters the second stage marked by a complete opening, the midwife guides the mother to light up when there is a strong urge to light (5). Preliminary survey results conducted by the author, of the 30 midwives interviewed found 76.6% of midwives conducted labor when the opening client was complete without regard to the bottom of the fetus at the base of the pelvis or not.

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Midwives who do not conduct labor during the opening are complete, such as caring for mothers, including positioning the mother on her left side or relaxation techniques.

The risk that will arise if the leadership is carried out at the time of complete opening accompanied by the head not at the base of the pelvis is the 2nd time long caused by fatigue of the mother, edema in the birth canal due to pressure under the fetus, laceration in the birth canal, fetal condition worsens (distress). The right time to lead labor is when the complete opening with the lowest part of the fetus is at the base of the pelvis. Based on these conditions the authors conducted a study of the application of the zilgrei method in the second stage of labor with a head lowering not yet based on the pelvis to minimize labor complications. To be able to contribute to reducing the maternal mortality rate (IMR) and IMR based on the 2012 Indonesian Population Survey (SDKI) data, MMR reached 359 per 100,000 live births and IMR reached 32 per 100,000 live births ((6,7)

Many methods can be applied to labor, especially those that can affect the second stage: research results the effect the pushing technique showed the duration of the second stage of labor and expulsion were shorter with spontaneous pushing compared Valsalva pushing technique (8). The other assessment non-pharmacological methods such as massage, aromatherapy, immersion bath, acupuncture, and acupressure are effective in reducing pain perception (9) and this condition can reduce mortality and morbidity. In this study, the authors wanted to apply the zilgrei method in the second stage of labor. This method applies 3 foundations, namely: breathing, movement, and body position. The application of this method makes the labor time needed is only small and the mother feels pleasant labor. This study supported by the other research which applies the zilgrei method to primiparous mothers, the results of this study found that this method accelerated the process of opening the birth canal in the first phase of the active phase (10). At the other research, the author applied the zilgrei method at second stage labour for reducing anxiety (11)

METHODS

This study was conducted using a post-test design with control group. Primary data were collected through observations with partographs, Apgar score assessment and pain scale assessment. The accidental sampling technique with inclusion and exclusion criteria was chosen to determine the sample. The inclusion criteria: the primiparous mother at second stage labour with the back of the head presentation, that is not under the pelvis at the time of complete opening, mothers without childbirth complications, a mother is willing to be a research respondent. Exclusion Criteria were the mother is referred for omplications of labor, babies born to die died in the process of expenditure. There were 38 respondents in the intervention group and 47 respondents in the non-intervention group for 6 months.

To analyze of difference in the comparison for a long time II and comparison of the pain scale, before bivariate analyzes the data normality test was performed first. The result is not normally distributed, so analyze with the Mann Whitney test. Meanwhile, to compare the proportion of in birth way laceration and difference in APGAR score proportion with Kolmogorov Smirnov test.

RESULTS

The median comparison analysis of the second time in groups with the Zilgrei method obtained a median value of 40 minutes and in the group, without the Zilgrei method, a median value of 60 minutes was obtained, with a p-value <0.001 (Table 1).

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Table 1. Comparison of Period II in Primigravida Mothers with and without the Zilgrei Method

	N	Median (minimum – maksimum)	*p-value*
With Zilgrei Method	38	40 (5-110)	
Without Zilgrei Method	47	60 (20 -105)	0.001

**) Mann Whitney test*

The proportion of birth canal lacerations in the group with the Zilgrei method mostly experienced second-degree lacerations (57.9%) and in the group without the Zilgrei method the majority experienced degree 2 lacerations (66%), with a p-value <0.370 (Table 2).

Table 2. Effectiveness of the Zilgrei Method on Birth Laceration in Mother Primigravida

	With Zilgrei Method		Without Zilgrei Method		
	n	%	N	%	*P**
Without Birth Laceration	10	26,3	9	19,1	
level I	6	15,8	7	14,9	0,370
level II	22	57,9	31	66	
level III	0	0	0	0	
level IV	0	0	0	0	
Total	38	100	47	100	

**) Kolmogorov Smirnov test*

The proportion of APGAR score at 1 minute by the Zilgrei method was mostly (73.7%) normal babies and in mothers, without the Zilgrei method, the majority (72.3%) babies were normal, with p values=0.293. The proportion of APGAR score at 5 minutes with the Zilgrei method is almost entirely (92.1%) the babies are normal and in mothers, without the Zilgrei method, almost all (91.5%) babies are normal, with a p-value <0.098. Whereas at the 10th minute the proportion of APGAR scores with the Zilgrei method was entirely (100%) normal babies and in mothers without the Zilgrei method almost entirely (95.7%) normal babies with p values <0.195 (Table 3).

Table 3. Effectiveness of the Zilgrei Method Toward APGAR Score in Infants with Primigravida Mothers

	With Zilgrei Method		Without Zilgrei Method		
	n	%	N	%	*P**
1 Minute					
Normal Baby l	28	73,7	34	72,3	0,293
Mild Asphixia	10	26,3	20	21,3	
Severe Asphixia	0	0	3	6,4	
5 Minute					
Normal Baby	35	92,1	43	91,5	0,098
Mild Asphixia	3	7,9	3	6,4	
Severe Asphixia	0	0	2	2,1	

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10 Minute					
Normal Baby	38	100	45	95,7	0,195
Mild Asphixia	0	0	2	2	
Severe Asphixia	0	0	0	0	

**) Kolmogorov Smirnov test*

A comparative analysis of the median pain scale in the group using the Zilgrei method obtained a median value of 6 and in the group, without the Zilgrei method a median value of the pain scale 8 was obtained, with a p - <0. 000 (Table 4).

Table 4. Comparison of Pain Scale in Primigravida Mothers with and without the Zilgrei Method

	N	Median (minimum – maksimum)	*P*
With Zilgrei Method	38	6 (2-9)	
Without Zilgrei Method	47	8 (4-10)	0,000

**) Mann Whitney test*

DISCUSSION

In this study the second time studied was the duration of labor which was calculated from the complete opening until the baby was born, which was calculated using partographs. The results showed a comparative analysis of the median time of the second stage in the group using the Zilgrei method obtained a median value of 40 minutes with a time of the second stage of at least 5 minutes and a maximum of 110 minutes with a standard deviation of 22.29. Whereas in the group without the Zilgrei method a median value of 60 minutes was obtained, with the second time the shortest time was 20 minutes and the longest 105 minutes with the standard deviation of 26.30. Bivariate analysis showed a value of p <0.001, which means that a significant median comparison of the old-time II was obtained between the Zilgrei method and without the Zilgrei method.

The results of the study in the group with the Zilgrei method, obtained a maximum of 110 minutes while without the Zilgrei method obtained no longer than 105 minutes. The second time was influenced by several factors, both physical and psychological. Physically the old-time II was related to passage, power, and passenger. The passage is the mother's birth canal, power is the strength of contraction that is influenced by the hormone oxytocin in the mother's body and the passenger is the fetus that is born. Psychologically, the emotional condition of the mother during childbirth can affect the long-time II (12). In primigravida with the Zilgrei method the duration of the second stage reaches 110 minutes due to the fetus being born weighing 4000 grams, this is one of the passenger factors that influence the second stage. Whereas in the group without the Zilgrei method the birth weight of the fetus ranged from 2800 to 3500 grams.

The application of the zilgrei method in this study was carried out on primigravida mothers with respiratory techniques, left tilted position and pulling legs toward the abdomen. This makes the working of the pelvic muscles associated with the urge to expel the fetus into harmony. The result is the potential for the muscles of the uterus to produce energy that pushes the fetus toward the birth canal. Also, relaxation techniques

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take a deep breath when contractions come, making the mother feel comfortable and less pain. The combination of breathing techniques left tilted position and movement encourage the fetus to quickly birth. The results of this other study are in line with the results which states that there is an influence of the Zilgrei method and endorphin massage on the first time, the study highlights that the psychological condition of the mother is holding pain during labor is related to the length of the first stage (13).

The Zilgrei method is effective against the length of the second stage of labor because it harmonizes breathing, position and movement techniques to influence passage, power, passenger and psychological factors during the second stage of labor. With the zilgrei method, the mother is brought to a relaxed state, when the mother feels relaxed at the moment of contraction when the muscles become supple and the hormones that encourage contractions will work without any hindrance. This condition is traversed by the mother without pain because the endorphin hormone comes out during the mother's Zilgrei method and massage so that labor can proceed quickly. But relaxation using aromatherapy not interfere in the duration of labor (9).

The results showed that the proportion of birth canal lacerations in the group with the Zilgrei method mostly experienced second-degree lacerations (57.9%) and in the group without the Zilgrei method the majority experienced second-degree lacerations (66%), with a p-value <0.370. This means that the incidence of lacerations in a primigravida with and without the Zilgrei method is not significantly different in proportion. A laceration in the birth canal is a laceration that occurs due to childbirth which can cover the vagina, perineum and even to the anus. One of the factors that cause a torn birth canal is wrong labor delivery (de Silva et al., 2014). In this study, data on birth canal lacerations seen from partographs that have been filled based on the results of the assessment of lacerations. The results showed that the birth canal event with the most lacerations both with and without the Zilgrei method was second-degree lacerations. Second-degree lacerations are lacerations that occur in the vaginal mucosa, perineal skin and perineal muscles.

According to the results, factors associated with birth canal lacerations are the birth weight of the fetus, maternal parity and weight of the fetus born has a significant relationship (14). In this Zilgrei method study maternal parity is controlled, ie all respondents are primigravidas. However, birth weight is not controlled. So that the birth weight of babies born to mothers with the zilgrei method and without the zilgrei method varies with a range of 2800 - 4050 grams. The Zilgrei method applied in the study did not significantly influence the birth canal laceration. The breathing technique, position, and movement of the Zilgrei method that should be able to help the muscles become supple do not affect the laceration in the birth canal. The results of this study are supported by the other research which found that the supine position and the combination position (slant-semi fowler) did not significantly influence the incidence of birth canal lacerations (15)

The proportion of APGAR score at 1 minute with the Zilgrei method was mostly (73.7%) normal babies and for mothers, without the Zilgrei method, the majority (72.3%) babies were normal, with p values <0.293. The proportion of APGAR score at 5 minutes with the Zilgrei method is almost entirely (92.1%) the babies are normal and in mothers, without the Zilgrei method, almost all (91.5%) babies are normal, with a p-value <0.098. Whereas at the 10th minute the proportion of APGAR scores with the Zilgrei method was entirely (100%) normal babies and in mothers without the Zilgrei method almost entirely (95.7%) normal babies with p values <0.195. This means that the proportion of APGAR scores in the 1st, 5th and 10th minutes of infants born to

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primigravida mothers with and without the Zilgrei method did not significantly differ in their proportions (16,17).

APGAR score on this study is used as a newborn assessment. The assessment is carried out at minutes 1, 5 and 10. Covering the frequency of the heart, respiratory effort, muscle tone, skin color, and stimulation response. Each assessment is given a number 0, 1, 2. From the results are categorized; Normal baby: Apgar score 7 - 10, Mild Asphyxia: Apgar scores 4 - 6 and Asphyxia Weight: Apgar score 0 - 3. The risk factors for asphyxia were antepartum hemorrhage, preeclampsia, low birth weight, prematurity, birth over time and cesarean section (18). The condition of prematurity which is a risk factor for asphyxia in newborns has occurred until the Apgar Score assessment at minute 5 (19). Different from the other study which states that lack of antenatal care, poor nutritional status in the mother, antepartum bleeding and maternal toxemia are associated with a higher incidence of asphyxia (18) Respondents to the research conducted by the author, there are no risk factors obtained following the results of the study. Asphyxia conditions at minute 1 and minute 5 that occurred in this study were obtained in the group using the Zilgrei method. This occurs in babies born with a bodyweight of more than 3500 grams.

Based on the comparative analysis of the pain scale median in the group using the Zilgrei method, the median value of 6 was obtained and in the group, without the Zilgrei method, the median pain scale 8 was obtained, with a p-value <0,000. This means that there are significant differences in the median comparison between groups with and without the Zilgrei method. Labor pain is a physiological condition experienced by the mother at the time of delivery. Each mother will feel different sensations of pain. This condition is supported by the psychological condition of the mother during childbirth (20). The results showed that the application of non-pharmacological techniques proved effective for reducing pain during childbirth. Among them are counter pressure and abdominal lifting methods, hypnobirthing, religious music, classical music, relaxation techniques, giving compresses, warm ginger drinks, acupressure, aromatherapy and including the Zilgrei method. In the Zilgrei method relaxation techniques are applied with a breathing pattern with a long breathing technique which is then released through the mouth and the movement of the knee is pulled toward the abdomen when tilted left, supporting relaxation during stretches in the muscles of the ribs and back. This technique can reduce pain before delivery in the Zilgrei method (21)

CONCLUSIONS

There is a significant difference in the second stage of time between primigravida and the second stage of labor with the zilgrei method without the zilgrei method. There is no difference in the proportion of events in the birth canal laceration II in primigravida mothers with the second stage of labor with the zilgrei method without the zilgrei method. There is no difference in the proportion of infant conditions in primigravida mothers with the second stage of labor with the zilgrei method without the zilgrei method. There is a significant difference in the scale of labor pain in primigravida mothers with the second stage of labor with the zilgrei method without the zilgrei method. The Zilgrei method can be applied as an alternative to non-pharmacological methods to shorten the second stage and reduce pain. For further research, it is necessary to consider controlling the weight of a born baby and maternal risk factors to determine the effect of applying the Zilgrei method optimally to the laceration of the birth canal and the condition of the baby at birth.

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