

RESEARCH ARTICLE

Effect of Zilgrei Method and Lumbar Massage Combination on Labor Progress During Latent Phase of First Stage of Labor in Primigravida

Melati Yuliandari,¹ Leri Septiani,^{1,2} Roni Rowawi,^{1,3} Sri Komalaningsih,¹ Herry Garna^{1,4}

¹Applied Midwifery Master Study Program, STIKes Dharma Husada, Bandung, Indonesia, ²RSIA Grha Bunda, Bandung, Indonesia, ³RS Immanuel, Bandung, Indonesia, ⁴Department of Child Health, Faculty of Medicine, Universitas Islam Bandung, Bandung, Indonesia

Abstract

The first stage of labor starts from the onset of cervical dilatation and divided into latent and active phases. The latent phase is a more prolonged phase of labor, which allows various interventions performed. Interventions and the latent phase's length may lead to anxiety and restlessness, which might contribute to prolonged labor when experienced by women in labor. A combination of the Zilgrei method and lumbar massage used to reduce labor pain. This method combines movement, change of position, breathing exercise, and the light massage performed since the first stage of labor. It expected that the work of interrelated pelvic muscles becomes harmonized; hence, the cervix will be softer, and the uterine muscles may push the fetus towards the birth canal. This study aimed to determine the effect of the Zilgrei method and lumbar massage combination on the latent phase of the first stage of labor progress in primigravida. It is a quantitative quasi-experimental study on 66 women who underwent the latent phase of the first stage of labor in independent practice of midwife the work area of Citarip Public Health Center during May–July 2019, who were divided equally into control and intervention groups. The statistical analysis used was univariate and bivariate analyses with an independent t test. The mean duration of labor in the latent phase of the first stage of labor in the control group and intervention group was 368 minutes and 307 minutes, respectively, with a difference of 61 minutes ($p=0.002$). Therefore, the Zilgrei method and lumbar massage combination significantly affect labor progress in the latent phase of the first stage of labor in primigravida.

Key words: First stage of labor, latent phase, lumbar massage, Zilgrei method

Pengaruh Kombinasi Metode Zilgrei dan Pemijatan Lumbal terhadap Proses Kemajuan Persalinan pada Primigravida

Abstrak

Kala I persalinan merupakan tahap serviks terbuka yang terdiri atas fase laten dan fase aktif. Fase laten mempunyai durasi persalinan lebih panjang sehingga memungkinkan banyak intervensi. Intervensi dan lama fase laten dapat menimbulkan kecemasan dan kegelisahan, apabila dialami ibu *in partu* dapat menjadi faktor persalinan lama. Kombinasi Metode Zilgrei dan pemijatan lumbal menjadi metode mengurangi rasa nyeri persalinan yang menggabungkan gerakan, perubahan posisi, latihan pernapasan, dan pijatan ringan yang dipersiapkan sejak kala I persalinan. Diharapkan kerja otot panggul saling berkaitan menjadi selaras sehingga serviks tidak kaku dan terdapat potensi otot rahim mendorong janin menuju jalan lahir. Tujuan penelitian ini mengetahui pengaruh kombinasi Metode Zilgrei dan pemijatan lumbal terhadap kemajuan proses persalinan kala I fase laten pada primigravida. Penelitian ini merupakan penelitian kuasi eksperimental kuantitatif pada 66 wanita yang menjalani fase laten persalinan kala I di bidan praktik mandiri (BPM) wilayah kerja Puskesmas Citarip periode Mei–Juli 2019 yang dibagi rata menjadi kelompok kontrol dan intervensi. Analisis statistik menggunakan analisis univariat dan bivariat dengan uji t independen. Durasi persalinan kala I fase laten rerata kelompok kontrol dan intervensi adalah 368 menit dan 307 menit masing-masing dengan selisih waktu 61 menit ($p=0.002$). Simpulan. kombinasi Metode Zilgrei dan pemijatan lumbal berpengaruh terhadap kemajuan proses persalinan kala I fase laten pada primigravida.

Kata kunci: Fase laten, kala I persalinan, Metode Zilgrei, pemijatan lumbal

Received: 4 September 2019; Revised: 18 June 2020; Accepted: 28 July 2020; Published: 31 August 2020

Correspondence: Melati Yuliandari. Applied Midwifery Master Study Program, STIKes Dharma Husada. Jln. Terusan Jakarta No. 71–75, Bandung 40282, West Java, Indonesia. Bumi Sehat Bahagia. Jln. Sukamulya, Bandung 40231, West Java, Indonesia. E-mail: melati.my@gmail.com

Introduction

Cases of prolonged labor, as reported in the Indonesia Demographic and Health Survey (IDHS), increase from 35% in 2012 to 41% in 2017.¹ The incidence of prolonged labor is higher during the early stage of labor that may be caused by, among others, maternal psychological factors such as anxiety, restlessness, fear, and lack of confidence.²⁻⁸ These can increase catecholamine and steroid hormone levels and prevent endorphins' release to stimulate the release of oxytocin.^{2,9} Another risk factor for prolonged labor is postpartum bleeding due to fatigue, which leads to less contraction of the uterine muscles.^{2,9-13} Medical approaches, especially anesthesiological approaches, have been developed to reduce pain during labor. The method used was intrathecal lumbar analgesia (ILA), lumbar epidural analgesia (LEA), and transcutaneous electrical nerve stimulation (TENS).^{4,14} However, there are also nonpharmacological therapies that can reduce labor pain during uterine contractions such as Zilgrei method and lumbar massage.¹⁵⁻¹⁷ The Zilgrei method can be combined with lumbar massage to reduce pain by combining movement, change of position, breathing exercise.¹⁸⁻²² The light massage performed since the first stage of labor to make the work of interrelated pelvic muscles become harmonized that the cervix will be softer.²³⁻²⁸ The uterine muscles may push the fetus towards the birth canal.²⁹

This study aimed to determine the effect of the Zilgrei method and lumbar massage combination on the latent phase of the first stage of labor progress in primigravida.

Methods

It was a quasi-experimental study using simple experimental design (post-test only control group design). This study conducted in Citarip Public Health Center Bandung from May to July 2019. Participants were randomly selected and assigned into two groups: intervention and control groups, where the participants received a different treatment depending on the group. The intervention group received Zilgrei method and lumbar massage combination and the standardized maternal care as required by the government. In contrast, the control group only received standardized maternal care as required

by the government. Participants assigned to their group using the block permutation approach. The first woman visited the clinic who met the criteria was assigned to the intervention group, and the second woman visited the clinic who met the inclusion criteria was assigned to the control group and so on. For each woman in labor who become the respondents, the time needed from the latent phase to the active phase was measured to differentiate the mean duration of labor.³⁰ The inclusion criteria for this study were primigravida women, women in labor (presenting cervical maturity, regular uterine contractions, cervical depletion) at the latent phase of the first stage of labor with 1 cm cervical dilatation. Also, women at term gestational age (>37-40 weeks), single fetus, alive, intrauterine position, vertex presentation, and fetal heart rate within normal limits (120-160 DPM). The exclusion criteria were women with complications such as hypertension, preeclampsia, heart disease, asthma, diabetes, narrow pelvis, premature rupture of membranes. Also, the fetus with complications such as breech position, transverse lie presentation, fetal distress, hydrocephalus), and women who routinely did prenatal yoga during pregnancy. Drop out in this study was defined as respondent withdrawal from the study when the intervention in progress and the respondent experienced complications or incidents during the labor process (eclampsia, amniotic fluid embolism, fetal distress).

Ethical clearance for this study was obtained from the Health Ethics Committee of Applied Midwifery Master Study Program in STIKes Dharma Husada Bandung with the issuance of the ethical clearance No. 091/SDHB/SKet/PSKBS2/VI/2019.

Results

The characteristics of the two groups were similar that the groups were considered comparable (Table 1).

There was a difference in the mean duration of the first stage of labor between the control and intervention groups, with 368 minutes in the control group and 307 minutes in the intervention group (Table 2). In the intervention group, the mean duration of the latent phase of the first stage of labor was faster than in the control group. The statistical results showed that Zilgrei method and lumbar massage combination

Table 1 Respondent Characteristics

Characteristics	Groups		p Value*
	Intervention (n=33)	Control (n=33)	
Age (years)			0.302
<20	3	1	
20–35	30	32	
Education			0.741
<high school	6	5	
≥high school	27	28	
Occupation			0.084
Employed	12	19	
Unemployed	21	14	

Note: *chi-square test

Table 2 Effects of Zilgrei Method and Lumbar Massage Combination on Labor Progress in Latent Phase of Primigravida First Stage Labor

Groups	Duration of Labor First Stage Latent Phase (mean/minute)	Standard Deviation	p Value*
Control	368	91	0.002
Intervention	307	60	
Differences	61		

Note: *independent t test

affected the latent phase of the first stage of labor in primigravida in labor with a p value of 0.002.

Discussion

The novel aspect of this study was the Zilgrei method and lumbar massage combination of primigravida women in labor who underwent the latent phase of the first stage of labor. Other studies have been performed to see the effect of this combination, albeit for the active phase of the first stage of labor.^{15,17,18} The latent phase is the initial stage of labor that can lead to many unnecessary interventions from health workers, especially in the field of obstetrics and gynecology.^{19,24,28–30} Unnecessary interventions may create adverse risks to the mother and fetus. According to a study conducted by Kurniawati,²⁹ interventions performed and the duration of the latent phase of the first stage can cause discomfort and anxiety among women who are in labor and waiting for the labor to progress to the next phase.

The results of this study showed that there were differences in the average duration of labor

between the control and intervention groups. The time needed to complete the latent phase and shift to the active phase in the intervention group was 307, while in the control group, it took 368 minutes. There were one hour and the one minute difference in this duration between the two groups. The statistical analysis presented that this difference was significant, meaning that Zilgrei method and lumbar massage combination has a positive effect on cervical dilatation, making it smoother and able to push the fetus into the ideal position by providing comfort to the mother through massaging.

Bolbol-Haghighi et al.²³ stated that massage is an old technique widely used in labor and can reduce pain during childbirth by reducing adrenaline and noradrenaline and increasing endorphins and oxytocin as reducing the duration of childbirth by increasing uterine contractions.

Factors that influence labor include the passage, passenger, power, maternal psychology, and birth attendance.^{28,31} In this study, psychology is the part that the researchers focus on supporting the progress of labor. Primigravida women in

labor tend to experience anxiety and restlessness before and during labor. In the intervention group, the Zilgrei method and lumbar massage combination were performed continuously, especially during contraction. It was added with relaxation techniques to make the women in labor feel more relaxed and comfortable during labor.

The finding is consistent with the findings of Wildan et al.³² that relaxation can increase the release of endorphins, which blocks the transmission of pain stimulus and also stimulates large diameter A-beta nerve fibers. They were reducing the transmission of pain nerve impulses through A-delta small fibers and C nerve fibers. Relaxation aims to reduce stress and provide practical pain relief effects by distracting the mother's attention into the stimulus and ignores the sensation of pain, which can ultimately reduce pain perception.³³

The combination of the Zilgrei method and lumbar massage into one method to reduce the pain that combines movement, position change, breathing exercises, and light massage performed since the first stage of labor expected to affect the work of interrelated pelvic muscles.¹⁸⁻²² They will work harmoniously to soften the cervix and creates a potential of the uterine muscles to push the fetus towards the birth canal.²³⁻²⁹

As shown in the study conducted by Nurrochmi et al.,¹⁵ the average length of the first phase of labor among women receiving the Zilgrei method and endorphin massage was is much shorter (162.13 minutes). The administration of the Zilgrei method and endorphin massage combination intervention is effective in accelerating the first stage of labor.

The findings were similar to Puspitasari and Ernawati²⁰ on the benefits of strengthening abdominal muscles and lumbar massage to accelerate labor during the first stage of labor. It is because lumbar massage increases the oxytocin receptor, which causes the quality of uterine contractions to be adequate, impacting the speed of labor.¹⁸ The average length of the first stage of labor before treatment and after treatment shows a difference of 18.74 minutes. The average time required for every cm cervix dilatation is faster after treatment.²⁰

According to Bolbol-Haghighi et al.,²³ massage therapy during labor will shorten the duration of the first and second stages of labor and increase

the Apgar score in the first and fifth minutes with a p value of 0.004. A study conducted by Hosseini et al.¹⁸ stated that massage therapy increases labor and plasma cortisol levels that accelerate the progress of the initial labor process, as seen in 30 respondents.

Mother care approach is a form of care that focuses on the psychology of women in labor during the childbirth process.³⁴ It respects the wishes, nutritional needs, and freedom to determine the position and movement so that delivery can be smooth. A study conducted by Yani and Wulandari,³⁵ stated that the mother care approach affects labor duration because it supports women during labor.

A total of 33 respondents who received the Zilgrei method and lumbar massage combination felt comfortable, and the pain reduced when lumbar massage performed accompanied by the Zilgrei position. Zilgrei position and massage are beneficial in the early stage of the labor process to prevent health workers' unnecessary interventions.

Conclusion

Zilgrei method and lumbar massage combination affect the progress of labor in the latent phase of the first stage of labor in primigravida.

Conflict of Interest

There is no conflict of interest at all authors.

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