

THE DIFFERENCE OF PAIN-RELIEVING EFFECT BETWEEN THE APPLICATION OF KINESIO TAPING AND EFFLEURAGE MASSAGE ON PRIMIGRAVIDA WOMEN DURING THE ACTIVE PHASE OF THE FIRST STAGE OF LABOR

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ABSTRACT

Introduction: Pain in labour is a fear for many women particularly for primigravida women. This population group reportedly had a higher score of pain during labour compared to multigravida women partly due to less experience of previous pregnancies, inadequate preparation for delivery and low knowledge regarding labour process as a result of lack of antenatal education. Massage therapy such as Effleurage massage has been well established as an effective method to reduce the labour pain by stimulating the endogenous system of the body. Another method is Kinesio Taping (KT) which has been widely used in recent years as an effective treatment of pain problems. KT could lift the epidermis that subsequently reduce pressure and create more space of the subcutaneous, increase the blood circulation with and the drainage of the lymph fluid. Furthermore, this method could help activating the endogenous system which stimulates endorphin to inhibit pain in the cord spinal due to cervix dilatation.

Purpose: This study aimed to analyse the difference of the pain level during the first stage of labour on women with effleurage massage as the control group and women with the KT application as the intervention group among primigravida women in Kandangan Primary Health Centre (KPHC), Temanggung Regency Indonesia.

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Method: This study is a quantitative study utilising quasi experiment with pre- and post-test two group design. The study population is 44 primigravida women who were giving birth in KPHC. Given the population number, Slovin sampling technique was used. Mann Whitney was used to analyse data obtained in this study.

Results: The two-tailed asymptomatic significance was 0.000 (i.e. $\alpha < 0.05$) meaning that there was statistically significant difference of effectiveness between applying KT and performing effleurage massage. The mean rank score of the intervention group was greater than the control group (28.25 and 16.75 respectively). Hence, it is concluded that the KT application was more effective in reducing pain among primigravida women during the first stage of labour as opposed to effleurage massage.

INTRODUCTION

A prolonged active phase of the first stage labour was mostly reported due to pain intolerant leading to exhaustion (Walsh, 2008; 304). The labour pain could be reduced by using pharmacological and non-pharmacological methods. The later method includes Effleurage massage and Kinesio Taping (KT). The Effleurage massage is a light stroke applied to the body to reduce muscle tension and improve the blood circulation (Bryce, 2002). The KT is a non-pharmacological method developed by Dr. Kenzo Kase in Japan 25 years ago. The main characteristic of KT is that the use of tape which is identical to human skin. Its weight, thickness and elasticity of up to 130%-140% make it possible to be the second epidermis and thus its application is safe and effective (Murray, 2000).

Problem statement

The following problem was identified in the present study:

Is there any difference of pain level between the application of Effleurage massage and Kinesio Taping among primigravida women during active phase of the first stage of labour?

Objectives

1. To describe the pain level during active phase of the first stage of labour among primigravida before and after the application of KT.
2. To describe the pain level during active phase of the first stage of labour among primigravida before and after the application of Effleurage massage.

3. To analyze the difference of pain-relieving effect between the application of Effleurage massage and KT among primigravida women during active phase of the first stage of labour.
4. To measure the effect of KT application on pain during the first stage of labour among primigravida.
5. To investigate the difference of the effectiveness between Effleurage massage and KT application among primigravida during the first stage of labour.

Significance

1. Theoretical benefits
To contribute to the knowledge of the management of pain during active phase of the first stage of labour.
2. Practical benefits
To provide recommendation to the health professional about reducing pain during active phase of the first stage of labour.

LITERATURE REVIEW

Labour pain

The pain in labour is a physiological process caused by myometrium contraction. In case of menstrual pain, massage could reduce the pain. Different massage intensity could have different effect on every person. Simanjuntak (2008) classified dysmenorrhea into two categories: primary and secondary dysmenorrhea. Primary dysmenorrhea is menstrual pain with no obvious genital abnormality, whereas secondary dysmenorrhea is characterized by obvious genital abnormality such as endometriosis, salpingitis, and uterus adenomyosis. Since pain during active phase of the first labour stage among women with no obvious genital abnormality is caused by uterus contraction, similar massage could be applied to the women.

Effleurage massage

Effleurage massage is a stroke using the flat of the hand applied to soft body tissue such as muscle, tendon or ligament. The massage can stimulate the production of endorphin in the decedent control system. This can also make a patient feels more comfortable because the massage can allow the muscle to relax.

Kinesio Taping (KT)

KT is one of many methods used as physiotherapy in sport and is effective in reducing dysmenorrhea and lower abdominal spasm L₅-S₁. This method can also reduce pain during active phase of the

first labour stage (Cunningham, 2005). Additionally, Kase (2003) reported that KT had four main benefits including supporting muscle, reducing pain, activating endogenous analgesic system, and correcting problems of ligament.

METHOD

This study utilized quasi experimental design with pre- and post-test two group. This design compared two different experimental groups: experimental group 1 with effleurage massage and experimental group 2 with KT application.

Location and time

The present study was conducted in Kandangan Primary Health Centre (KPHC) in September until November 2018.

Definition

1. Kinesio Taping (KT)

KT was the application of tape to the lower back of women's body in T₁₀-L₁ during active phase and was done when cervix dilatation reached 7 cm. Then, once the cervix dilatation reached 8 cm, the pain level was measured.

2. Effleurage massage

Effleurage massage was a stroke using the flat of the hand applied to the soft body tissue such as muscle, tendon or ligament on the back T₁₀-L₁. The massage was done during contraction for approximately 10 minutes when cervix dilated by 7 cm. The labour pain was then measured when cervix dilatation reached 8 cm.

3. The pain level in active phase of the first stage of labour

Pain during active phase of the first labour stage among women with normal delivery process was measured when cervix dilated by 7 cm. The measurement was before the application of KT and effleurage massage. Then, KT and effleurage were applied to the back for approximately 60 minutes and 10 minutes respectively. Once the cervix dilated by 8 cm, the pain level was measured.

Data analysis

Data of the labour pain was collected by pre-test and post-test on both effleurage and KT groups. Shapiro Wilk test was applied to test the normality of the data. Since the test showed that the data of the present study was normally distributed, paired sample T-test was used to examine the effectiveness of effleurage massage and KT application on reducing pain during active phase of the first stage of labour. Independent sample T-test was then employed to evaluate the significant difference of the effectiveness between both intervention and control groups.

RESULTS

Description

The current research subject was primigravida women who were in active phase of the first stage of labour. Inclusion criteria resulted in 44 sample as respondents assigned into two groups: 22 respondents received the effleurage massage and 22 respondents received KT application. The present study aimed at exploring the benefits of effleurage massage and KT application on pain reduction among women during active phase of the first stage of labour.

Table 1. Pain level of primigravida women during active phase of the first labour stage before and after KT application.

| Pain level | Before intervention | | After intervention | |
|--------------------------|---------------------|----------------|--------------------|----------------|
| | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Mild pain | 0 | 0 | 7 | 32 |
| Moderate pain | 2 | 9.09 | 11 | 50 |
| Controlled severe pain | 18 | 81.81 | 3 | 13.63 |
| Uncontrolled severe pain | 2 | 9.09 | 1 | 4.54 |
| Total | 22 | 100 | 22 | 100 |

Table 2. Pain level of primigravida women during active phase of the first labour stage before and after effleurage massage application.

| Pain level | Before intervention | After intervention |
|------------|---------------------|--------------------|
|------------|---------------------|--------------------|

| | Frequency | Percentage | Frequency | Percentage |
|------------------------|-----------|------------|-----------|------------|
| Moderate pain | 0 | 0% | 14 | 63.63% |
| Controlled severe pain | 22 | 100% | 8 | 36.36% |
| Total | 22 | 100% | 22 | 100% |

Table 3. The difference of the effectiveness of effleurage massage and KT application on reducing pain during active phase of the first labour stage among primigravida women.

| Mann-Whitney | Asymp Sig. (2-tailed) | Kinesio Taping | Effleurage Massage |
|--|-----------------------|-----------------------|-----------------------|
| Difference of labour pain the first labour stage | 0.000 | Mean rank score 28.25 | Mean rank score 16.75 |

DISCUSSION

Mann-Whitney test showed that the results of Asymp sig. (2-tailed) was 0.000 or $\alpha < 0.05$. Thus, this means that H_0 was rejected while H_a was accepted. The mean score of KT application was higher (28.25) than the effleurage massage (16.75) meaning that the KT application was more effective than the effleurage massage on reducing pain among primigravida women during active phase of the first labour stage.

The results of the present study confirmed findings from a previous study by Anisak Zuhrotul Masruroh (2015), concluding that KT could reduce both musculoskeletal and primary dysmenorrhea pain. KT was a method of pain pressure by stimulating tactile fibre in the skin through the mechanism of pain gate. KT on the skin could suppress prostaglandin in the spinal cord reducing menstrual pain. These findings were linear to findings of a study conducted by Martinez (2011) suggesting that effleurage massage and KT could decrease primary dysmenorrhea pain. The massage could help patients feel more comfortable, relaxing muscle, and reducing pain. Lis-Balchin (2009) argued that mechanical action of hands of cutaneous and subcutaneous could improve blood circulation of the lymph so that increase the oxygen supply and exchange the production of pain mediator. Additionally, KT could form a gentle effleurage massage with various stroke and movement on the skin allowing improvement of the mechanism of lymphatic deep flow (Tijdschr, 2009).

CONCLUSION

According to the discussion supported by results of data analysis and as referring to the problem statement outlined in the previous section, the present study concludes that there found the pain-relieving effect of effleurage massage and KT among primigravida

women during active phase of the first labour stage. Furthermore, KT produced a higher score of effect of reducing pain compared to effleurage massage.

Recommendation

Health personnel

It is suggested that health personnel provide KT in pain management among primigravida women during active phase of the first labour stage so that the women feel calmer and more comfortable during the delivery process.

Future research

Research in the future should consider exploring the effectiveness of KT compared to another distraction method of pain-relieving management.

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