



Lower Anxiety Levels after Counter Pressure Massage in Mother Preparing for Caesarean Section at Tabanan General Hospital

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ABSTRACT

Article history:

Submitted, 2025/04/19
Accepted, 2025/05/18
Published, 2025/05/31

Keywords:

Anxiety level; SC pre-operation; Counter pressure massage;

Cite This Article:

Sariani, N.W.P., Purnamayanti, N.M.D., Rahyani, N.K.Y. 2025. Lower Anxiety Levels after Counter Pressure Massage in Mother Preparing for Caesarean Section at Tabanan General Hospital. *Jurnal Ilmiah Kebidanan (The Journal of Midwifery)* 13(1):104-110. DOI: [10.33992/jik.v13i1.3984](https://doi.org/10.33992/jik.v13i1.3984)

Anxiety before Caesarean Section surgery will have a bad impact on mother and her fetus. Counter pressure massage is complementary therapies that will help reduce the anxiety. This study aims to find out the difference in anxiety levels before and after counter pressure massage in preoperative mothers with Caesarean Section. This study is classified as pre-experimental with a one-group pretest-posttest design. The sampling technique used purposive sampling with a total of 33 respondents. This research instrument is questionnaire. The research was conducted from October to November 2024 in the Maternity Room of Tabanan Hospital. Median of pretest anxiety level was 13, while the median of posttest was 7. Data normality test used Saphiro-Wilk, and was not normally distributed, then it was continued with a non-parametric statistical test (Wilcoxon test) with a p-value = 0.000. Several studies have shown that certain neurotransmitters can be released during acupressure which has the effect of reducing anxiety. The conclusion is there is significant difference between level of anxiety before and after counter pressure massage in preoperative mothers of Caesarean Section. It is hoped that the counter pressure massage can be applied to mothers giving birth before caesarean section to reduce anxiety levels.

INTRODUCTION

Childbirth is a physiological process of expelling the product of conception or fetus from the womb, starting when regular uterine contractions occur which will result in the opening of the birth canal until the fetus and placenta are born. The process of childbirth is both happy and worrying, especially if you have to give birth by Caesarean Section (CS)⁽¹⁾. In the process of childbirth and CS, there is a combination of physical processes and emotional experiences for a woman. One of the psychological factors that influences childbirth is anxiety in facing childbirth. Anxiety is a feeling of fear that is unclear and not supported by the situation⁽²⁾. As many as 94% of women giving birth feel worried/anxious about the childbirth process, 93% of women worry about whether they and their babies will go through childbirth safely and 91% of women giving birth worry about their physical condition compared to their health during pregnancy⁽³⁾. Research in Indonesia states that normal pregnant women



in facing childbirth experience 47.7% severe anxiety, 16.9% moderate anxiety, and 35.4% experience mild anxiety⁽⁴⁾.

The number of CS at Tabanan Hospital in 2023 was 377 out of 471 deliveries (80.04%). In a preliminary study in the Tabanan Hospital Delivery Room conducted in March 2024, out of 52 mothers giving birth, 43 (82.69%) gave birth by CS. The researchers then assessed the anxiety levels of 10 mothers giving birth by CS using the Depression Anxiety Stress Scale 21 (DASS-21). DASS-21 is an instrument used to evaluate depression, anxiety, and stress. Of the 10 respondents (six primigravida and four multigravida), 10 people (100%) experienced anxiety, either mild, moderate or severe. If labor pain is not handled properly, it can increase excessive anxiety and have an effect on increasing the adrenaline hormone which causes the mother's cardiac output to increase and blood vessels will be blocked which causes the mother's blood flow to the fetus to decrease⁽⁵⁾.

Various efforts have been made to reduce maternal anxiety, one of which is with complementary techniques such as relaxation, massage, acupressure, acupuncture, hot or cold compresses and massage. This technique has proven quite effective in reducing pain levels as well as anxiety levels in patients⁽⁶⁾. The Counter pressure technique is one of the complementary therapies by applying repeated pressure to the sacrum bone through straight or circular massage movements using the base of the palm or fist. Pressure will help relax muscles and inhibit pain signals due to the activation of endorphins and result in increased oxygenation and blood flow to all parts of the body⁽⁵⁾. Endorphins can also increase feelings of relaxation and well-being, thereby reducing anxiety felt by mothers in labor. Sukmaningtyas and Windiarti (2016) stated that the anxiety levels of respondents with endorphine massage were mostly mild (46.7%), while respondents without endorphine massage mostly had severe anxiety levels (45.7%)⁽⁷⁾. This study aims to determine the difference in anxiety levels before and after counter pressure massage in pre-operative mothers with a Caesarean Section in the delivery room at Tabanan Hospital.

METHOD

This study is a Pre-experimental design, with a one group pretest-posttest design and using a prospective approach. The study was conducted in the delivery room of Tabanan Hospital from October-November 2024. The population in this study were all mothers who gave birth pre-operatively by SC in the delivery room of Tabanan Hospital. The sampling technique used a purposive sampling technique. The inclusion criteria for this study were pregnant women who underwent CS and were in the delivery room of Tabanan Hospital and were willing to be respondents, high school-college education, first-third pregnancy and maternal age 20-35 years. Exclusion criteria were emergency CS with cases such as persistent fetal distress, prolapsed umbilical cord/umbilical cord, failed vacuum/forceps, imminent uterine rupture, uterine rupture, antepartum bleeding with active bleeding), diagnosis of placenta previa, placental abruption, eclampsia, and having a history of allergies to baby oil, latex or suffering from skin diseases on the part of the body that will be massaged. The sample size was 33 respondents.

The study used primary data obtained from a questionnaire sheet containing patient demographic data (patient identity, pregnancy status, gestational age, respondent age, education) and a questionnaire on maternal anxiety before and after CS surgery using the DASS-21 assessment instrument (DASS-A). The enumerators in this study were two people who had received training in mom kids baby massage and spa. Data analysis was carried out univariately to see the characteristics of the respondents (anxiety levels before and after counter pressure massage). Bivariate analysis was carried out to determine the difference in anxiety levels before and after treatment. The data normality test used Saphiro-Wilk. Pretest anxiety level data is normally distributed, but posttest anxiety level data is not normally distributed, so the data is tested using a non-parametric statistical test, namely the Wilcoxon Test with a significance level of $p \leq 0.05$.



RESULT AND DISCUSSION

The Respondent Characteristics

The characteristics of respondents in this study included pregnancy/parity status, gestational age and education.

Table 1.
Characteristics of Respondents of Pre-CS Operation Mothers in the Delivery Room of Tabanan Regional Hospital in 2024

Characteristics	Frequency (f)	Percentage (%)
Education		
Senior High School/Vocational School	16	48,5
College	17	51,5
Total	33	100,0
Pregnancy Status/Parity		
Primigravida	14	42,4
Multigravida	19	57,6
Total	33	100,0
Gestational Age		
<37 weeks	3	9,1
≥37 weeks	30	90,9
Total	33	100,0

Table 1. shows that out of 33 respondents, 48.5% of respondents had a high school/vocational high school education and 51.5% had a college education. 42.4% of respondents were primigravida and 57.6% were multigravida. 9.1% of respondents had a gestational age of <37 weeks and 90.9% of respondents had a gestational age of ≥37 weeks.

Anxiety Levels Before and After Counter Pressure Massage

The level of anxiety before and after counter pressure massage in pre-operative mothers undergoing Caesarean Section in the delivery room of Tabanan Regional Hospital is:

Table 2.
Anxiety Level Before and After Counter Pressure Massage

Anxiety Levels	Pretest			Posttest		
	Value	f	%	Value	f	%
	11	5	15,2	5	1	3,0
	12	6	18,2	6	10	30,3
	13	9	27,3	7	8	24,2
	14	7	21,2	8	14	42,4
	15	5	15,2			
	17	1	3,0			
Median			13,0			7,0
Modus			13			8



Table 2. shows the level of anxiety of mothers before CS surgery before being given counter pressure massage with a minimum value of 11, a maximum value of 17, a median value of 13 and a mode value of 13. Based on the research results, all mothers pre-CS operation (100%) experienced anxiety with a median value of anxiety level before counter pressure massage of 13. The DASS-21 value of 13 is included in the moderate anxiety category (10-14). Moderate anxiety is characterized by mothers often feeling dry mouth, difficulty breathing even though they have not done any physical activity before, shaking hands, feeling worried, almost panicking, increased heart rate even though they have not done any physical activity, and feeling afraid for no apparent reason⁽⁸⁾. This shows that higher levels of anxiety can be influenced by various factors.

Another study found that the pretest anxiety level was higher in the moderate category, namely 69.8%⁽⁹⁾. Meihartati and Mariana (2018) in their research, their found that the pretest anxiety level was higher with a high level of anxiety (50%)⁽¹⁰⁾. This difference occurs due to several factors that affect the level of anxiety, such as maternal age, education level, husband's support, economic status and parity. Maturity in the thinking process in adults makes it more possible for them to use good coping mechanisms. Based on the level of education, the higher the level of education, the better the coping to overcome anxiety because of the knowledge⁽¹¹⁾. Based on pregnancy/parity status, multiparas tend to have more experience with the birth process, both normal and CS. This can reduce anxiety, because they already know what to expect, including the procedure, risks, and results of the operation. The more often a mother gives birth, the more prepared she is to face childbirth, so the less anxiety she experiences⁽¹²⁾. Socio-economic conditions influence the psychological condition of mothers giving birth, this is related to the readiness for the costs of childbirth and caring for their babies⁽¹³⁾. Mothers giving birth who receive positive support from their husbands will experience lower levels of anxiety, because pregnant women who receive psychological support from their husbands will feel comfortable, thereby reducing stress and anxiety.

Naibaho (2021) stated that there are internal and external factors that influence maternal anxiety before CS surgery. External factors of maternal anxiety before CS surgery are the new environment due to the different operating room layout from home. Internal factors include age, education, parity, and knowledge of the surgical process⁽¹⁴⁾. During preoperative preparation for CS, the patient will be overshadowed during anesthesia, the surgical process, the welfare of the baby and the safety of the mother, pain and other obstacles that cause discomfort and lead to anxiety. Anxiety experienced by the mother can hinder the labor process with various complications that accompany it, so it is important to pay attention to the condition of the mother in labor before undergoing a CS surgical procedure⁽¹⁵⁾.

The results of the study showed that all respondents (100%) experienced a decrease in anxiety after being given counter pressure massage, with a median anxiety level of 7, a minimum value of 5 and a maximum value of 8. The DASS-21 value of 7 is in the normal range (0-7). The maximum value of 8 is in the mild anxiety range (8-9). Not anxious is if the mother in labor never experiences/feels dry mouth, difficulty breathing even though she has not done any physical activity before, trembling hands, feeling worried, almost panicking, increased heart rate even though she has not done any physical activity, and feeling afraid for no apparent reason. While the mild level of anxiety is if the mother in labor sometimes only experiences the feelings mentioned above⁽⁸⁾.

Another study stated that the post-test anxiety level was 72.5%, which means no anxiety, and 25.5% had mild anxiety⁽¹³⁾. This is different from the research results of Sukmaningtyas and Windiarti (2016) where the majority (46.7%) of respondents after the post-test had a decrease in anxiety levels to mild anxiety, and a moderate anxiety level of 33.3%⁽⁷⁾. This difference occurs due to various factors that influence the level of maternal anxiety during childbirth even though measures have been taken to reduce the level of anxiety, such as maternal age, education level, husband's support, economic status and parity related to maturity, ability to understand information, safety, financial readiness, and the mother's experience in dealing with the previous childbirth/CS process.



The decrease in anxiety levels after being given counter pressure massage to respondents occurred because of the effect of pressing acupressure points, namely increasing endorphin levels and creating a sense of comfort. In addition, counter pressure can also stimulate the release of opiate receptors located at the ends of peripheral sensory nerves through pressure and massage⁽¹⁶⁾. This will normalize the heart rate, control stress, reduce pain and produce comfort through the skin surface⁽¹⁷⁾.

Analysis of Differences in Anxiety Levels Before and After Counter Pressure Massage

Analysis of the difference in anxiety levels before and after counter pressure massage in pre-operative mothers undergoing Caesarean Section in the delivery room of Tabanan Regional Hospital is:

Table 3.
Difference in Anxiety Level Before and After Counter Pressure Massage

	Differences in Anxiety Levels		Negative Ranks	Positive Ranks	Ties	Z	Asymp. Sig. (2-tailed)
	Pretest	Posttest					
Minimum	11	5					
Maximum	17	8	33 ^a	0 ^b	0 ^c	-5,047 ^b	0,000
Median	13	7					

Table 3. shows that there is a difference in the level of anxiety of mothers before and after the administration of counter pressure massage. Before the counter pressure massage, the median value of the mother's anxiety level was 13 and after the counter pressure massage, there was a decrease in the level of anxiety with a median value of 7. Based on the Saphiro-Wilk data normality test, the data was not normally distributed. The results of the Wilcoxon non-parametric statistical test obtained a probability value (p) or Asymp. Sig (2-tailed) of 0.000. Therefore, $0.000 < 0.05$ then H_0 is rejected, so there is a significant difference between the level of anxiety before and after counter pressure massage in mothers before the Caesarean Section in the Tabanan Hospital Delivery Room.

This shows that the provision of counter pressure massage is quite effective and has the expected impact, namely reducing the level of anxiety in pre-operative mothers with Caesarean Section. This research was supported by Maesaroh et al. (2019) who in their research stated that there was an influence of endorphin massage on the anxiety of mothers giving birth in the first active phase⁽¹⁹⁾. Other research also found that the level of anxiety of respondents after endorphin massage was mostly mild (46.7%)⁽⁷⁾. This shows that giving counter pressure massage is effective in reducing anxiety levels. The anxiety felt by mothers before a Caesarean Section operation is generally the fear of premature birth, pregnancy complications and surgery that can cause death and feelings of guilt. Anxiety will increase the work of the sympathetic nervous system. The brain will send a signal to the pituitary gland that controls the body to increase cortisol and epinephrine hormones. Increased adrenaline and norepinephrine hormones cause biochemical dysregulation of the body, which can cause physical tension in mothers before a Caesarean Section operation and can trigger the heart to pump blood faster⁽¹⁹⁾.

Counter pressure massage is a massage that is done by applying continuous pressure during contractions on the patient's sacrum bone with the base or fist of one palm⁽¹⁶⁾. Counter pressure massage is one of the acupressure methods. Acupressure on acupuncture points will provide a local effect, namely reducing pain in the area around the pressure point. Acupressure energy at acupuncture points will flow through the meridian flow to the target organ. Stimulation or sedation of the target organ will provide biochemical, physiological, and perceptual/sense changes. Biochemical changes can be in the form of increased endorphin levels, physiological changes can be in the form of blood flow and oxygen activity, while changes in perception/sense can be in the form of decreased pain levels and relaxation



in reducing anxiety⁽²⁰⁾. From the psychological aspect, acupressure helps reduce respondents' anxiety. Most respondents said that with acupressure therapy they felt more cared for, felt calm, comfortable and relaxed⁽²¹⁾.

CONCLUSION

The level of anxiety before counter pressure massage in pre-operative mothers with Caesarean Section in the delivery room of Tabanan Regional Hospital with a minimum value of 11, a maximum value of 17, a mode value of 13, and a median value of 13. The level of anxiety after counter pressure massage in pre-operative mothers with Caesarean Section in the delivery room of Tabanan Regional Hospital with a minimum value of 5, a maximum value of 8, a mode value of 8, and a median value of 7. There is a significant difference between the level of anxiety before and after counter pressure massage in pre-operative mothers with Caesarean Section in the delivery room of Tabanan Regional Hospital.

For further research, it is expected to be able to develop research with other variables such as emotional support from the family, the mother's physical condition, previous childbirth experience, or communication with medical personnel, so that they can provide innovation in reducing the level of anxiety of mothers before CS surgery.

ACKNOWLEDGMENTS

The researcher received a lot of guidance and assistance from various parties. Through this opportunity, the researcher would like to express her gratitude to the Director of Poltekkes Kemenkes Denpasar and its staff, The Director of Rumah Sakit Umum Daerah Tabanan and its staff, and other parties who have supported this research.

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