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# The Influence of the Perineum and Aromatherapy Steam Seats Against the Pain Due to the Wounds of Perineum at Parturition on Maternal Health Centers Bara-Baraya Town of Makassar

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Abstract : Perineum pain is a result of the perineum wound that occurs spontaneously or episiotomy at childbirth process. This research aims to know the comparison of Seats the Perineum and aromatherapy steam against Pain due to the wounds of Perineum at Parturition on Maternal health centers Bara-Baraya Makassar city. This research uses Quasi Experimental Design approach by using purposive sampling technique of sampling. The sample in this research totalled 30 respondents are divided into 3 kelompk. The Group was the control group (Chair), group II Group Chair is the perineum, and group III is a group chair the perineum and aromatherapy steam. The sample in this study i.e., the mother of the second day of parturition were perineum degree I and II were given intervention for 15 minutes with his mother on the perineum and aromatherapy steam chairs. During the intervention, the respondents observed pain expression using the facial pain scale observation sheet (Wong Baker Facial Gramace Scale). The results of this research are getting the value of  $\rho = 0.000 \ \alpha = 0.05 <$  thus Ho is rejected, there is a comparison of the perineum wound pain on groups that use steam and aromatherapy Chair compared to the control group (regular seats and chairs the perineum) means There are significant differences between the perineum wound pain control group, the Group's Chair, as well as the perineum perineum Chair group and aromatherapy steam. The conclusions of this study, namely the Chair the perineum and aromatherapy steam can be used as a complementary therapy for the perineum wound pain.

Keywords : Seat Of The Perineum, Aromatherapy Steam, Perineum Pain.

# Introduction

Perineum pain is a result of the perineum wound that occurs spontaneously or episiotomy at childbirth

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process. Perineum pain also gave discomfort at mother (Beleza *et al.*, 2016; Swain & Dahlen, 2013; Hedayati *et al.*, 2009). The wound because labor is where the entry of germs into the body, giving rise to infection during childbirth (Manuabadkk., 2010). The wounds of the perineum during childbirth is also associated with long-term maternal morbidity, such as postpartum perineum pain and dyspareunia (Browne *et al.*, 2010). The wounds of perineum most associated with the birth of pervaginam which takes place spontaneously and or a result of episiotomy. Reported incidence of 85% of the perineum wound (Leon-Larios *et al.*, 2017; Feigenberg *et al.*, 2014).

The wounds of the perineum are grouped in four stages namely ruptured level I, II, III, and IV in accordance with the affected network. Episiotomy is equivalent to the second degree of the ruptured muscle affects the mucosa and the perineum. The first and second degrees of ruptured usually cause pain and discomfort (Beleza *et al.*, 2016). Perineum pain prevalence of 303 women maternity, which injured as many as 244 female perineum, and from 244 women who conceived with the use of episiotomy sebesar184 (75.4%) women and the consequent episiotomy pain dibandikan with 4 x more that do not use of episiotomy (Francisco *et al.*, 2011). In addition, decreased Hemoglobin concentration increased in trauma due to childbirth Episiotomy compared with all degrees of trauma to the perineum due to spontaneous labor (Rubio-Álvarez *et al.*, 2017). Perineum pain have an impact on women's daily activities, such as sleep patterns, urinary and bowel function, delivery of care to her baby, the process of breastfeeding, postpartum depression, as well as sexual dysfunction which gives effect to the development of maternal health (Francisco *et al.*, 2011; Chang *et al.*, 2016; Chang *et al.*, 2015; Pereira *et al.*, 2017).

Perineum pain have negative long term consequences as well as the short term against the health and welfare of women. Women who have experienced trauma to the perineum, 40% reported pain in the first two weeks post!, 20% still experiencing pain to eight weeks, and 7-9% reported pain for up to 3 months (Swain & Dahlen, 2013). Perineum pain affect 45% of women in the first 10 days post!, and last up to 18 months by 10%. In addition, 58% of women suffered superficial dyspareunia 3 months after birth. This complication can potentially affect the mother, relations with the partners and newborns (Andrews *et al.*, 2008).

Strategies to reduce trauma to the perineum and prioritize the repair of damage to the perineum to avoid and reduce the pain, that is with a local anaesthetic such as fakmalogi, analgetik, oral therapeutic ultrasound, and antiseptic, as well as non-pharmacological like hot packs, warm compresses, cold compresses, massage on the perineum (Hedayati *et al.*, 2009; Kargar *et al.*, 2016; Akbarzadeh *et al.*, 2016). A non-pharmacological approach belongs to additional therapies that are safer and less side effects compared to pharmacological approaches (Bikmoradi *et al.*, 2014). But based on empirical experience, perineum pain reduction during this time only using oral analgetik.

Complementary and alternative therapies such as essential oils in aromatherapy have been used in healing trauma to the perineum and to give comfort to the patient. Lavender oil is one of the essential oil aromatherapy have therapeutic and healing such as antibacterial, anticonvulsants, antidepressants, anxiolytic, and soothing. Aromatherapy will stimulate the hypothalamus to secrete chemical mediators that act as painkillers and give rise to a feeling of happy (Marzouk *et al.*, 2014; Widayani, 2016).

Aromatherapy is one of the complementary therapy and alternative medicine that has long been used to improve the health of women (Ali *et al.*, 2015; Kazemzadeh *et al.*, 2016). So, reduction of pain the perineum can use hot steam and aromatherapy, but reduction of pain by using a chair the perineum and aromatherapy steam does not exist.

Medical equipment used in hospitals 95% are still imported and 30% is not working because its use is not complete with instructions, additional tools and lack of training against operators who run those tools. In addition, the production of local health few in number and are still controlled by multinational corporations (Sudiharto, 2009).

Based on the above, this research aims to know the results of the design of the Chair danuap the perineum pain cuts comparison against aromatherapy perineum on postpartum mothers in Clinics Bara-Baraya Town of Makassar.

#### **Research Methods**

#### **Type Of Research**

The type of research used in this study i.e. experiments, with a Quasi Experimental Design approach. Quasi Experimental Research Design is the design that had a control group, but may not work fully to control the outer variables that affect the execution of experiments (Sugiyono, 2014).

#### **Populations and Samples**

The population in this research is the Mother of all Childbirth Clinics in Bara-baraya Makassar in February-April 2018. The sample of this research is part of the population that came of maternity and postpartum care in health centers get Coal-Baraya Makassar in February-April 2018.

#### Techniques of Data collection and Data analysis

Data collection is done with the now research, observation, and library studies. While data analysis using univariate analysis, analysis of multivariate analysis, and bivariat.

#### Results

Table 1 shows that the number of the largest group of respondents age chairs the perineum and aromatherapy steam namely age bstet 21-25 year by the number of respondents 4 (40.0%) of the respondents, on the Group seat perineum i.e. age bstet 36-40 year by the number of respondents 4 (40.0%), while respondents in the Group bstetr that is 16-20 with a population of bstet age 4 (40.0%) of the respondents.

Most respondents in the group education chairs the perineum and aromatherapy steam namely high school education with a population of 9 (90.0%) of the respondents, on the Group seat perineum i.e. high school education with a number of 5 (50.0%) of the respondents, whereas in the Group bstetr i.e. the education of SMP with a total of 4 (40.0%).

Most respondents work group Chair on the perineum and aromatherapy steam namely IRT by the number 8 (80.0%) of respondents, on perineum Chair group i.e. with the number of IRT 9 (90.0%) of the respondents, whereas in the control group i.e IRT by the number 9 (90.0%) respondents.

Most of the respondents on the physical condition of the group chairs the perineum and aromatherapy steam that is balanced between the condition of the tired and fit with each 5 (50.0%) of the respondents, the seat of the perineum that is exhausted by the condition number of 6 (60.0%) respondents, whereas in the control group that is balanced between the condition of the tired and fit with each 5 (50.0%) respondents.

Variable	( Per	Group Seats the Perineum and steam		Group Seats The Perineum		The control group	
	n	%	n	%	n	%	
Age							
16-20	2	20,0	0	00,0	4	40,0	
21-25	4	40,0	3	30,0	3	30,0	
26-30	2	20,0	2	20,0	1	10,0	
31-35	1	10,0	1	10,0	1	10,0	
36-40	1	10,0	4	40,0	1	10,0	
Level of							
education							
SD	1	10,0	4	40,0	3	30,0	
SMP	0	00,0	1	10,0	4	40,0	
SMA	9	90,0	5	50,0	3	30,0	

#### Table 1. Frequency distribution based on the respondent's characteristics research

Jobs						
IRT	8	80,0	9	90,0	9	90,0
Employees	1	10,0	0	00,0	0	00,0
Private	1	10,0	0	00,0	1	10,0
Daily labors	0	00,0	1	10,0	0	00,0
Physical						
condition						
Tired	5	50,0	6	60,0	5	50,0
Fit	5	50,0	4	40,0	5	50,0

Source: Data Primer 2018

Table 2 shows that the number of birth (number of children) most respondents on the Group seat the perineum and aromatherapy steam that is the first child with the number 5 (50.0%) of the respondents, the seat of the perineum that is third with a total of 6 (60.0%) respondents , whereas in the control group that is the first child with the number 4 (40.0%) of the respondents.

The perineum wound that plagued most of the respondents on the Group seat the perineum and aromatherapy steam namely degree II with a population of 8 (80.0%) of respondents, on a group of seats that is balanced between the perineum perineum wound degree I and II degrees with each 5 (50.0%) respondents, whereas in the control group i.e degree II with a population of 8 (80.0%) of the respondents.

Most respondents felt the pain in the perineum Chair group and aromatherapy steam namely a little pain with the number 6 (60.0%) respondents, the seat of the perineum that is rather annoying pain with a population of 8 (80.0%) of the respondents, whereas in the control group that is pain that interferes with activities with a number of 5 (40.0%) of the respondents.

	Group Seats the		Group Seats The		The control group	
Variable	Perineum and steam		Perineum			
	n	%	n	%	n	%
The number of						
labor						
The first child	5	50,0	0	00,0	4	40,0
Second child	2	20,0	1	10,0	2	20,0
The third child	2	20,0	6	60,0	3	30,0
Fourth child	0	00,0	2	20,0	1	10,0
The fifth child	1	10,0	1	10,0	0	00,0
The perineum						
wound						
Degrees I	2	20,0	5	50,0	2	20,0
Degrees II	8	80,0	5	50,0	8	80,0
Pain scale						
No pain	3	30,0	0	00,0	0	00,0
A little bit of pain	6	60,0	1	10,0	0	00,0
Kinda annoying	1	10,0	8	80,0	4	40,0
Disruptive activity	0	00,0	1	10,0	5	50,0
Very annoying	0	00,0	0	00,0	1	10,0

 Table 2. Frequency distribution based on obstetrics respondents research

Source : Data Primer 2018

Table 3 shows that the value of  $\rho = 0.000 \alpha = 0.05 <$  thus Ho is rejected, there is a comparison of the perineum wound pain on groups that use steam and aromatherapy Chair compared to the control group (regular seats and chairs the perineum) means that there is significant differences between the perineum wound pain control group, the Group's Chair, as well as the perineum perineum Chair group and aromatherapy steam.

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Kruskal-Wallis analysis results showed the existence of significant differences, then followed with a test of post-hoc Mann-Whitney for Gaussian data is not normal, a test of post-hoc T-independent sample data for Gaussian.

# Table 3. Comparison of pain among the control group, the Group of the perineum and group chairs chairs the perineum and aromatherapy steam

Variable/groups	Control (rerata ± S.D)	Seat Of The Perineum (rerata ± S.D)	Seat of the Perineum and aromatherapy steam (rerata ± S.D)	ρ
Pain	$4,9 \pm 1,37$	$3,50 \pm 1,08$	$1,20 \pm 1,03$	$0,000^{*}$

<sup>\*</sup>Uji Kruskal-Wallis

Table 4 shows that there is a difference between a meaningful average control group vs group chair the perineum and aromatherapy steam rooms, as well as having the value of  $\rho = 0.000 \alpha = 0.05 <$  means there is a significant difference between the control group the pain with a group seat of the perineum and aromatherapy steam.

Table 4. The average difference between the control group, the Group of the perineum and group chairs chairs the perineum and aromatherapy steam

Group	The Difference	ρ
	In Mean	
The control group Vs. group chair the perineum	1,4	0,026 <sup>a</sup>
The control group Vs. group chair the perineum and aromatherapy steam	$3,70 \pm 0,54$	0,000 <sup>b</sup>
Group Chairs group Vs. the perineum perineum Chair and aromatherapy steam	2,3	0,001 <sup>a</sup>

a: Post-hoc test Mann-Whitney

b: Post-hoc test T-Independent Sample

#### Discussion

This research shows that seat the perineum and aromatherapy steam have better outcomes when compared with the control group and group chairs the perineum. Pain is the result of childbirth the perineum, pain can occur due to injuries such as bruises, perineum ruptured spontaneously, surgical (episiotomy), or with the operative birth (birth of the vacuum or forcep (Chou *et al.*, 2009; Santos *et al.*, 2012). The value of  $\rho = 0.000$   $\alpha = 0.05 <$  thus Ho is rejected, meaning that there is a significant difference in the pain of the wound the perineum between the control group, the Group's Chair, as well as the perineum perineum Chair group and aromatherapy steam.

According to researchers, based on the results of the above research how can mothers with a history of birthing pervaginam Coals of clinics in Makassar Baraya-almost all experience pain, ranging from a little pain to pain that interferes with activities. It is influenced by the pressure of the baby's head when the labor pervaginam that can result in bruises, abrasions, wounds and the perineum (the degree I, II, III, IV), the injuries received by the nosiseptor and delivered by afferent pain fibers to the brain, then pain are perceived by the mother. Pain reduction made during this by using analgetik or pharmacological. The granting of therapeutic pharmacological basis can give impact to mother and baby, this corresponds to the background behind Chou*et al* (2009), in The Cochrane Library meriview about drugs for perineal pain in the early postpartum: generic protocol, adverse effects of medicines such as nausea, vomiting, constipation and diarrhea, and this can affect the baby. Especially analgetik narcotics can affect the mind and often make people sleepy. Potential impact of drugs on the baby through the breast milk would be a special attention to mothers. Therefore, the required reduction in non-pharmacological pain relief with the use of a modified aromatherapy steam in the form of a Chair.

Aromatherapy is one of the complementary therapy and alternative medicine that has long been used to improve the health of women (Ali *et al.*, 2015; Kazemzadeh *et al.*, 2016). While the steam is hot temperature

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between 37 ° C-50 ° C, steam was used to bathe. Sauna is a steam bath of hot water which is sprayed into the bathroom, forming air temperature 40 C-45 ° ° C with humidity saturated. Once introduced, various studies examine the effects of bathing and sauna have thoroughly cleanse the skin effect, accelerating the recovery of muscles, relieves headache, as well as encourage a deeper and more relaxed (Iwase *et al.*, 2013a; Iwase *et al.*, 2013b). So, reduction of pain the perineum can use hot steam and aromatherapy, but reduction of pain by using a chair the perineum and aromatherapy steam does not exist.

This research fits with the theory proposed by Melzack and Wall that is the "Gate Control Theory" in Tamsuri (2014), in general it can be explained that within the human body there are two kinds of pain impulses that transmitters function delivers a sensation pain and other sensations such as cold, warm taste, touch, and so on. Small diameter pain impulses (wire, A Delta and C Fibers) serves to transmit pain which is hard and this receptor are usually in the form of free nerve endings that are present across the surface of the skin and on the deeper structure of the body as tendons, fascia and bone and internal organs. While the large diameter of the transmitter (A-Beta Fibers) have a receptor found on the surface of the body structures and functions in addition to the mentranmisikan sensation of pain, also serves to transmit the sensation of vibration sensation, like other touch, hot/cold sensation, as well as subtle pressure. The impulse of A-Beta fibers have properties of the inhibitor (inhibitory) which is transmitted to the C fibers and A-Delta.

When there is a second stimulus, the fibers will bring a stimulus towards kornu dorsalis in the medulla spinalis (medullae spinalis cornuposterius). In the medulla spinalis is this happens large diameter fibers between interaction and small diameter fibers in a special area called the substantia gelatinosa (SG). On the substantia gelatinosa can occur changes, modification, as well as affect whether the sensation of pain which is accepted by the medulla spinalis are routed to the brain or it will be inhibited.

Before the pain impulses are carried to the brain, axons of large and small fibers will interact in the substantia gelatinosa area, and if there is no stimulus/the adekuat impulse of large fibers, then small fibers of pain impulses will be conducted towards to the cells Trigger (T cells) and then carried to the brain, which eventually caused a sensation of pain felt by the body. The circumstances when the pain impulse is transmitted to the brain this is termed "Open Gate".

On the contrary, when there is an impulse transmitted by large diameter fibers due to the stimulation of the skin, touch, vibration, cold and warm, and a touch of subtle, these impulses will inhibit impulses of small diameter fibers in the area SUBSTANTIA gelatinosa so the sensations brought by small fibers will be reduced or not even transmitted to the brain by the substantia gelatinosa, so the body can not feel the sensation of pain. This condition is referred to as the "Closed Gate".

The results of this research are supported by the research of Pore (2014), research findings show that the score scale REEDA (scale parameter wound healing such as redness, edema, festering, long healing) higher before the application of heat and dry heat moist, but once the application of wet heat and dry heat score REEDA scale decreased. This research can help in bringing awareness among health workers who work in the unit of post birth.

The results of this research is also supported by research Amandeep *et al* (2015), research findings revealed that the application of a warm bath is effective in relieving pain and improving the episiotomy wound healing.

The results of such research in accordance with research done on how mothers with episiotomy wound with the result that the lavender aromatherapy can be used as a suitable therapy for episiotomy wound care pascapartum and there is no effect Next on the mother (Vakilian *et al.*, 2011).

The results of this research are also in line with the research of Sheikhan *et al* (2012), these findings reveal that the use of lavender essential oil is effective in reducing pain episiotomy.

#### **Conclusions and Suggestions**

Based on the results and discussion then it can be inferred that the seat of the perineum and aromatherapy steam can reduce the pain due to the wounds of perineum. Seat of the perineum and aromatherapy steam have better outcomes when compared with the control group and group chairs the perineum. Expected for midwives, if the perineum wound patients who experience degrees I and II, so that it may consider granting analgetik and can provide a non-pharmacological therapies such as the use of the perineum and aromatherapy steam chairs.

# References

- 1. Akbarzadeh M. Faride Vaziri, MSc; Mahnaz Farahmand, Zahra Masoudi, Sedigheh Amooee, and Najaf Zare, 2016. The Effect of Warm Compress Bistage Intervention on the Rate of Episiotomy, Perineal Trauma, and Postpartum Pain Intensity in Primiparous Women with Delayed Valsalva Maneuver Referring to the Selected Hospitals of Shiraz University of Medical Sciences in 2012-2013.
- 2. Ali, B., Al-Wabel, N.A., Shams, S., Ahamad, A., Khan, S.A. and Anwar, F. 2015. Essential Oils Used in Aromatherapy: A Systemic Review. Asian Pacific Journal of Tropical Biomedicine, 5, 601-611.
- 3. Amandeep*et al.* 2015. effect of sitz bath in reduction of episiotomy pain and wound healing among postnatal mothers.*Internation Journal of Current Research*. Vol 7, Issue, 02, pp.12461-12463, February, 2015.
- 4. Andrews V. Ranee Thakar, Abdul H. Sultan, Peter W. Jones, 2008. Evaluation of Postpartum Perineal Pain and Dyspareunia—A Prospective Study. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 152–156.
- 5. Beleza A.C.S, Ferreira C.H.J, Driusso P, Dos Santos C.B, Nakano A.M.S.2016. Effect of Cryotherapy on Relief of Perineal Pain after Vaginal Childbirth with Episiotomy: A Randomized and Controlled Clinical Trial. *Physiotherapy*.
- 6. Bikmoradi A, Seifi Z, Poorolajal J, Araghchian M, Safaryan R,Oshvandi K. 2014. Effect of inhalation aromatherapy withlavender essential oil on stress and vital signs inpatientsundergone coronary artery bypass surgery: a single blinded randomized clinical trial. Complementary Therapies in Medicine. 23:331–338. DOI: 10.1016/j.ctim.2014.12.001
- 7. Browne Maureen, Marck Jacobs, Maureen Lahiff, Suellen Miller.,2010. Perineal Injury in Nulliparous Women Giving Birth at a Community Hospital: Reduced Risk in Births Attended by Certified Nurse-Midwives. *Journal of Midwifery & Women's Health*.
- 8. Chang SR, Chen KH, Ho HN, Lai YH, Lin MI, Lee CN, Lin WA, 2015. Depressive Symptoms, Pain, and Sexual Dysfunction Over the First Year Following Vaginal or Cesarean Delivery: a Prospective Longitudinal Study. *International Journal of Nursing Studies*.
- 9. Chang SR, Chen KH, Lee CN, Shyu MK, Lin MI, Lin WA2016. Relationships between Perineal Pain and Postpartum Depressive Symptoms: a Prospective Cohort Study. *CrossMark*.
- Chou, D., Abalos, E., Gyte, G.M.L., Gülmezoglu, A.M. 2009. Drugs for perineal pain in the early postpartum period: Generic protocol. Cochrane Database of Systematic Reviews. 2009;2009: CD007734.DOI: https://doi.org/10.1002/14651858. CD007734.pub2
- 11. Feigenberg T. Esther Maor-Sagie, Einat Zivi, Mushira Abu-Dia, Assaf Ben-Meir, Hen Y. Sela, and Yossef Ezra. 2014. Using Adhesive Glue to Repair First Degree Perineal Tears: A Prospective Randomized Controlled Trial. *BioMed Research International*, 2014.
- 12. Francisco A A. Junqueira Vasconcellos de Oliveira SM, Barbosa da Silva FM, Bick D, Gonzalez Riesco ML. 2011. Women's Experiences of Perineal Pain During the Immediate Postnatal Period: A Cross-Sectional Study In Brazil. *Elsevier*, e254–e259.
- 13. Francisco A A. Sonia Maria Junqueira Vasconcellos de Oliveira; Jaqueline de Oliveira Santos; Flora Maria Barbosa da Silva2011. Evaluation and Treatment of Perineal Pain in Vaginal Postpartum. *Acta Paul Enferm*, 94-100.
- 14. Hedayati H. Jacqualine Parsons, Caroline A. Crowther. 2003. Rectal Analgesia for Pain from Perineal Trauma Following Childbirth (Review). *The Cochrane Library*.
- 15. Iwase S, Yuko Kawahara, Chihiro Miwa,Naoki Nishimura 2013a. Effect and efficacy of thermal environment provided by a new bathing style, "mist sauna bathing". *Balneo Research*, Vol.4, Nr.1.
- 16. Iwase S. Yuko Kawahara, Naoki Nishimura, Rumiko Nishimura, Junichi Sugenoya, Chihiro Miwa, Masumi Takada, 2013b. Effects of Isotonic and Isometric Exercises with Mist Sauna Bathing on Cardiovascular, Thermoregulatory, and Metabolic Functions. *Int J Biometeorol.*
- 17. Kargar R. Afsaneh Aghazadeh-Nainie, M.D., and Hamid Reza Khoddami-Vishteh, M.D.2016. Comparison of the Effects of Lidocaine Prilocaine Cream (EMLA) and Lidocaine Injection on Reduction of Perineal Pain During Perineum Repair in Normal Vaginal Delivery. *Journal of Family and Reproductive Health*, Vol. 10, No. 1.

- 18. Kazemzadeh R. Roya Nikjou, Masoumeh Rostamnegad, Hosein Norouzi 2016. Effect of Lavender Aromatherapy on Menopause Hot Flushing: A Crossover Randomized Clinical Trial. *Journal of the Chinese Medical Association*.
- 19. Leon-Larios Fatimah, Isabel Corrales-Gutierrez, Rosa Casado-Mejía, Carmen Suarez-Serrano 2017. Influence of a Pelvic Floor Training Programme to Prevent Perineal Trauma: A Quasi-Randomised Controlled Trial. *CrossMark*, 72–77.
- Manuaba A. dkk. 2010. Ergonomi, Kesehatan dan Keselamatan Kerja. Editor: Sritomo Wignyosubroto dan Stefanus Eko Wiranto. Proceeding Seminar Nasional Ergonomi 2000, Guna Wijaya, Surabaya: 1 -4.
- 21. Marzouk T, R. Barakat, A. Ragab, F. Badria, A. Badawy., 2014. Lavender-thymol as a New Topical Aromatherapy Preparation for Episiotomy: A Randomised Clinical Trial. *Journal of Obstetrics and Gynaecology*.
- 22. Pereira Thalita R.C, Felipe G. DeSouza, Ana C.S.Beleza 2017. Implications of Pain in Functional Activities in Immediate Postpartum Period According to the Mode of Delivery and Parity: an Observational Study. *Brazilian Journal of Physical Therapy*, 37-43.
- 23. Pore Y. 2014. Effectiveness of moist heat and dry heat application on healing of episiotomy wound. Asian Journal of Multidisciplinary Studies. Volume 2, Issue 7, July 2014
- 24. Rubio-Álvarez Ana, Milagros Molina-Alarcón, Antonio Hernández-Martínez 2017. Relationship between the Degree of Perineal Trauma at Vaginal Birth and Change in Haemoglobin Concentration. Women and Birth Journal of the Australian College of Midwives (ACM) October 2017 Volume 30, Issue 5, p351-442, e227-e264
- 25. Santos Jaqueline de Oliveira , Sonia Maria Junqueira Vasconcellos de Oliveira, , Moacyr Roberto Cuce Nobre, , Ana Cecília Correa Aranha, Marina Barreto Alvarenga, 2012. A Randomised Clinical Trial of the Effect of Low-Level Laser Therapy for Perineal Pain and Healing after Episiotomy: A Pilot Study. *Elsevier*.
- 26. Sheikhan Fatemeh, Fereshteh Jahdi, Effat Merghati Khoei, Neda Shamsalizadeh, Masoumeh Sheikhan, Hamid Haghani 2012. Episiotomy pain relief: Use of Lavender oil essence in primiparous Iranian women. *Journal Complementary Therapies in Clinical Practice 18 (2012) 66e70*.
- 27. Sudiharto. 2009. Pengembangan Teknologi Kesehatan untuk Menjawab Tantangan dan Kebutuhan Masa Depan Demi Kemandirian Bangsa.
- 28. Sugiyono. 2014. Metode Penelitian Pendidikan. Bandung: Alfabeta.
- 29. Swain J. & Dahlen H G. 2013. Putting Evidence into Practice: A Quality Activity of Proactive Pain Relief for Postpartum Perineal Pain.
- 30. Tamsuri A. 2014. Konsep dan Penatalaksanaan Nyeri. Jakarta: EGC.
- 31. Vakilian K. Mahtab Atarha, Reza Bekhradi, Reza Chaman. 2011. Healing advantages of lavender essential oil during episiotomy recovery: A clinical trial. *Complementary Therapies in Clinical Practice*.
- 32. Widayani W. 2016. Aromaterapi Lavender dapat Menurunkan Intensitas Nyeri Perineum pada Ibu Post Partum. *Jurnal Ners dan Kebidanan Indonesia*.

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