EFFECT OF RELAXATION THERAPY ON ANXIETY LEVEL AND BREAST MILK PRODUCTION IN PREGNANT AND POSTPARTUM MOTHERS: Systematic Literature Review

Mutiara Ayu Muthiatulsalimah[1*]
Rr Sri Endang Pujiastuti[2]
Aris Santjaka[3]
Runjati[4]
[1,2,3,4]Master of Applied Midwifery Health Polytechnic, Ministry of Health, Semarang
e-mail: mutiattul@gmail.com[1], rarastuti@yahol.com[2], arissantjaka@gmail.com[3],
    runjati@yahoo.com[4]
*Correspondence: mutiattul@gmail.com

Abstract. Anxiety in pregnant and postpartum women can affect the condition of the mother and baby. Psychological stress can influence the hypothalamus and pituitary gland to secrete Adrenocorticotropic Hormone to produce cortisol. The amount of cortisol is high, resulting in inhibited milk production. Relaxation therapy is able to stimulate the milk ejection reflex more efficiently than standard practice in health care facilities which only focus on optimizing body functions, without involving the mind and soul. This review conducted a systematic review to evaluate the effect of interventions using Relaxation Therapy in increasing breast milk production. A literature search was conducted using the PRISMA guidelines including studies of relaxation therapy interventions during the pregnancy and postpartum period. Using a literature keyword search strategy, 718 studies related to relaxation therapy in pregnant and postpartum women were found and 25 studies were eligible for inclusion in the analysis. A total of 10 studies on anxiety in pregnant women, 5 studies on anxiety in postpartum mothers, 3 studies on cortisol hormone levels, 5 studies on breast milk production and 2 studies on prolactin hormone levels. These studies were conducted in Malaysia, France, England, Greece, Korea, Turkey, America, Taiwan, Iran, Indonesia, Spain, Denmark and India. The samples analyzed were 1,608 pregnant women and 1227 postpartum women. Based on the results of a review, Relaxation Therapy in the form of Hypnobreastfeeding and Music Therapy is effective in stimulating the production of breast milk and prolactin hormones in postpartum mothers. Hypnosis, Music Therapy and Benson's relaxation technique were associated with a significant reduction in anxiety levels as indicated by an increase in PSS scores and a decrease in salivary cortisol.

Keywords: anxiety; cortisol hormone; milk production; prolactin hormone; relaxation therapy.

INTRODUCTION

Pregnancy is the most important period in the human life cycle. During pregnancy, there is often a decrease in well-being, an increase in anxiety and stress. During pregnancy, mothers experience significant changes in their physiological and psychological functions. The process of adjusting to this new situation then causes anxiety. Anxiety in pregnancy is an emotional reaction that occurs in pregnant women related to the mother's concern for the welfare of herself and her fetus (Li, Newell-Price, Jones, Ledger, & Li, 2012); (Kestler-Peleg, Shamir-Dardikman, Hermoni, & Ginzburg, 2015); (Duijts, Jaddoe, Hofman, & Moll, 2010).

Research on factors related to anxiety levels before delivery, from 64 respondents obtained 10.9% experienced mild anxiety, 70.3% moderate anxiety, and 18.8% severe anxiety. This is caused by hormonal changes that also cause the mother's emotions to become unstable (Letinil̇ et al., 2016); (Loke & Chan, 2013). Excessive anxiety causes levels of stress hormones to increase (beta-endorphin, Adrenocorticotropic Hormone, cortisol and epinephrine) (Cai, Wardlaw, & Brown, 2012); (General, 2017). When the amount of stress hormone increases, the blood vessels in the body will constrict. This reduces blood flow and oxygen supply to the fetus and disrupts its growth and development (Ho, 2013). Pregnant women with high levels of anxiety are strong predictors of postpartum depression, these conditions affect the breastfeeding process so that it can affect milk production (Ali et al., 2020).

Research in the city of Palembang showed that 32% of mothers stopped breastfeeding because they complained of insufficient milk (Lazard, Scheinfeld, Bernhardt, Wilcox, & Suran, 2015). Another study in Australia showed that 556 mothers gave birth, 29% stopped breastfeeding their babies in the second week on the grounds that their breast milk was insufficient (Fotiou, Siahanidou, Vlastarakos, Tavoulari, & Chrousos, 2018). The rate of desire to breastfeed in various countries is now far higher than the rate of starting breastfeeding. Reports in Canada stated that during pregnancy about 80% of mothers who intend to breastfeed there are only 30% who breastfeed for at least 6 months. Feeling tired after giving birth causes mothers to be lazy to breastfeed their babies, besides that milk production is not smooth causing mothers not to give breast milk to their babies, this is what is called lactation failure (Meedya, Fahy, & Kable, 2010); (Legrand et al., 2017).

The psychological condition of the mother affects the success of lactation. Mothers who have symptoms of depression tend to have low self-confidence in breastfeeding and have difficulty regarding the position of the baby while breastfeeding (Tragea, Chrousos, Alexopoulos, & Darviri, 2014); (Downe et al., 2015). Some studies have reported that emotional stress on the mother inhibits the let-down reflex which causes disruption of milk flow which results in a decrease in milk volume so that it affect the duration of breastfeeding. Psychological, social and spiritual stress can affect the hypothalamus and pituitary gland to excrete Adrenocorticotropic Hormone (AC-TH). This can affect the hormone adrenaline (a

hormone that affects stress) and produce cortisol. When the amount of cortisol is high, then milk production will be inhibited. Therefore, a relaxation therapy is needed as an effort to reduce the hormone cortisol and reflect let-down in the mother (Shin & Kim, 2011); (Bauer, Victorson, Rosenbloom, Barocas, & Silver, 2010); (Newby, Lang, Werner-Seidler, Holmes, & Moulds, 2014).

The intervention that has been developed by many researchers to reduce anxiety and increase milk production is by using relaxation therapy. Relaxation techniques are natural healing techniques and are part of a holistic self-care strategy to deal with complaints such as fatigue, pain, sleep disturbances, stress and anxiety. Physiologically, relaxation will stimulate the parasympathetic nervous system so as to increase the production of endorphins, reduce heart rate, increase lung expansion so that it can develop optimally and muscles become relaxed. Relaxation therapy is able to stimulate the milk ejection reflex which is more efficient than standard practice in health care facilities such as breastcare which only focuses on optimizing body functions, without involving the mind and soul which also affects milk production and breastfeeding success. The application of holistic health sciences must pay attention to the psychoneuro-endocrino-immuno (PNE-I) aspect because the imbalance between the mind and the soul causes disturbances in the balance between the nervous, hormonal and immune systems. Therefore, the application of relaxation therapy that involves the soul and mind to increase milk production and breastfeeding success is very much needed.

The results showed that relaxation exercises were effective in reducing the anxiety of primigravida pregnant women undergoing IVF. The results of other studies also showed that relaxation during breastfeeding affects the mother's psychological condition and increases milk production. The results of a systematic review of 5 studies that examined relaxation therapy on breast milk production it was found that Relaxation therapy has been shown to increase milk production in mothers with babies premature.

Based on the description above, a review will be conducted on the effect of Relaxation Therapy on anxiety levels and milk production in pregnant and postpartum women.

METHODS

The research design used the Systematic Literature Review method by collecting and analyzing 25 journals from various database sources such as; PubMed, Science Direct, and Google Scholar. This literature search was determined within the last ten years, from 2010 to 2020.

RESULTS AND DISCUSSION

A. Study Quality and Risk of Bias

Based on the overall study that is summarized, it shows the results of data analysis and significant testing regarding the given intervention. A total of 7 studies were rated as low risk of bias, the studies applied the same eligibility criteria to select all study subjects, all potential subjects

underwent the same diagnostic procedures and had the same chance of detecting and reporting cases, exposure history, including the time and reason for the change in exposure status diagnosed. without the influence of knowledge of exposure status (blind).

Assessment of study bias set out in a systematic review is at risk of selection bias because most of the determinants of the large sample are non-probability techniques, so there is a lack of random selection procedures on research samples. Studies using a pre-experimental design are also at risk for bias, because the study was conducted in only one group and the results were observed before and after the intervention. The high risk of bias can also be caused by several other factors that contribute to the psychology of each individual that triggers anxiety that causes milk production to be not smooth.

B. Analysis of Relaxation Therapy Results on Anxiety Levels for Pregnant Women

The results of the analysis of the level of anxiety in pregnant women are presented based on parameters, namely seen through the State-Trait Anxiety Inventory (STAI) score, Depression Anxiety and Stress Scale (DASS),*Pregnancy Stress Rating Scale (PSRS)*, *Spielberger's Anxiety Scale*, Wijma Delivery Expectancy / Experience Questionnaire B (W-DEQ).

Six studies used STAI to measure anxiety levels in pregnant women. All studies show a significant reduction in anxiety levels. Studies that provide hypnosis interventions show a decrease in Anxiety to its minimum value of 20 (mild anxiety), right in the middle of a hypnotic cycle. With p value = 0.05. Studies that provide Relaxation Breathing and Progressive Muscle Relaxation interventions show the results of the A-state median value of the Intervention group 38.0 (mild anxiety), the control group 40.0 (moderate anxiety), the median A-trait value of the intervention group 37.0 (mild anxiety) control group 36.0 (mild anxiety). Studies that provided self-hypnosis showed results. The intervention group's level of fear and anxiety was lower than the control group P = 0.001. The mean value of the intervention group was 10.1 (normal), the control group was 10, 5 (normal). Two studies that provided Music Therapy intervention showed results. The intervention group showed a significant reduction in anxiety compared to the control group. The pretest score of the intervention group was 43.72 (moderate anxiety), posttest 42.79 (moderate anxiety), pretest control group 43.23 (moderate anxiety), posttest 43.87 (moderate anxiety).The anxiety score of the music therapy group, decreased by 5 points from 39.6 (moderate anxiety) to 34.1 (mild anxiety) p = 0.01. And the recreational therapy group score also decreased 5 points from 36.5 (mild anxiety) to 31.4 (mild anxiety) p = 0.04 The control group decreased by 2 points from 35.6 (mild anxiety) to 33.2 (mild anxiety), statistically (p > 0.05). The study that

provided Benson's relaxation technique showed that the intervention group's State Anxiety Score was 21,9 (mild anxiety), control group 25 (mild anxiety), Trait score 19.5 (normal), control group 25.9 (mild anxiety). Relaxation training is effective in reducing anxiety in pregnant women P=0.001.

One study using Depression Anxiety and Stress Scale (DASS) to measure anxiety levels. Studies that administered hypnosis showed that the mean scores of stress and anxiety were found to remain within normal parameters during the hypnosis session. Before the intervention the average score of anxiety was 2 (normal), the first intervention average score remained 2 (normal), the second and third interventions the average score increased to 8 (normal). Although the patients' stress scores improved slightly during the second and third hypnosis sessions they remained within normal parameters.

Two studies used the Wijma Delivery Expectancy/Experience Questionnaire A (W-DEQ) to measure levels of fear. The study that provided the intervention in the form of hypnobirthing showed the experimental group's mean score of 16.47 (normal) was significantly lower than the control group's 95.47 (severe fear). Hypnobirthing was able to reduce the fear of pregnant women during delivery P = 0.000. Studies that provided intervention in the form of EFT In the EFT group the Wijma Delivery Expectancy / Experience Questionnaire

score (version B) had a significant difference from the control group (p < 0.001). EFT has the effect of reducing maternal fear before delivery.[22]

One study using Pregnancy Stress Rating Scale (PSRS) to measure the level of anxiety. Studies that provide music therapy have a difference between pre-test and post-test PSRS scores, respectively, for the experimental group Pre=53.7 (mild anxiety) Post=54.02 (mild anxiety) and the control group Pre=49, 92 (mild anxiety) Post=54.94 (mild anxiety), p = 0.02.

C. Analysis of Relaxation Therapy Results on Anxiety Levels in Postpartum Mothers

The results of the analysis of the level of anxiety in postpartum mothers are presented based on parameters, namely the State-Trait Anxiety Inventory (STAI) score, Depression Anxiety and Stress Scale (DASS), Hamilton Rating Scale for Anxiety (HRS-A), cortisol hormone levels.

Anxiety scores measured using STAI showed that the study that provided the hypnobreastfeeding intervention had a significant and significant difference in anxiety between the group that was given the intervention and the group that was not given the intervention P=0.002. The mean score of the intervention group was 27.9 (mild anxiety), the control group was 34.07 (mild anxiety).

Three studies used the DASS to measure anxiety levels in pregnant women. All studies show a significant reduction in anxiety levels. The study that gave the hypnobreastfeeding

intervention showed that the respondents' anxiety before the intervention of the experimental group was 14.22 (moderate anxiety), decreased to 7.67 (normal) after the intervention. The control group, the anxiety score was 13.83 (moderate anxiety), decreased to 9.39 (mild anxiety). P value 0.001. Study on hypnosis intervention showed results The intervention group had lower postpartum anxiety than the control group (postpartum care), the intervention group score = 2.88 (normal), control = 38.36 (very severe), p = 023. Studies that provided the intervention Mindfulness Based Stress (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Mindful Self-compassion (MSC) showed results The intervention group showed a greater reduction in anxiety than the control group. Intervention group score Pretest=7.08 (mild anxiety), Posttest 2.46 (normal), Control group score Pretest=7.5 (mild anxiety), posttest 7.25 (mild anxiety) P=0.012.

Anxiety scores were measured using HRS-A showing the results that there was a significant difference between the results of the pretest posttest. Pretest the average intervention group was 20.63 (mild anxiety) and the posttest score was 10.50 (normal), with significance level value= 0.001

Three studies used cortisol levels to measure anxiety levels in pregnant women. All studies showed a significant reduction in anxiety levels with a decrease in cortisol levels as a determining parameter. Studies that provide an intervention in the form of listening to audiorecording containing relaxation show the results In the intervention group the average cortisol hormone level in the 2nd week before the intervention was 0.048, after 0.039, the control group was 0.041, the 6th week before the intervention was 0.044, after 0.036, the control group was 0.044. Studies that giving hypnosis showed the results that Cortisol levels (hypnosis and relaxation p = 0.02 and 0.03, hypnosis and usual care p = 0.08 and 0.05). group cortisol levels 30 minutes after delivery (hypnosis versus relaxation p = 0.08, hypnosis versus usual care 0, 10) and 6 weeks postpartum (hypnosis versus relaxation: p = 0.85, 0.51, and 0.68, hypnosis versus usual care: p = 0.85, 0.93, and 0.96). One study displays the results of measuring 6th month salivary cortisol levels of 0.36 mg / dl at 8 am and an increase of 0.41 mg / dl at 8:30 in women who are mostly breastfeeding, and 0.27-0.30 mg / dl in women who are mostly bottle-feeding. Women who mostly breastfed their babies had higher salivary cortisol levels at 8 a.m. (p = 0.05) and 8:30 a.m. (p = 0.02) than those who were bottle-fed for 6 months. This effect remained significant after controlling for feeding differences (p = 0.01, p = 0.015, respectively).

D. Analysis of Relaxation Therapy Results on Milk Production in Postpartum Mothers

The results of the analysis of breast milk production in postpartum mothers are presented based on parameters, namely seen through measuring cups

and prolactin hormone levels.

Five articles used measuring cups and breast pumps to measure milk production in postpartum mothers. All studies showed an increase in breast milk production after the intervention. Studies that provide hypnobreadtfeeding show that there is an effect of hypnobreastfeeding on productionbreast milk in nursing mothers who work, the average value of production breast milk before treatment 210 ml/day and after treatment 255 ml/day. The study that gave hypnobreastfeeding combined with oxytocin massage showed that the amount of milk production between the intervention group (median = 10.00; SD = 10.36) and the control group (median = 4.50; SD = 4.21) was statistically significant ($p < 0.001$). Studies that also provided hypnobreasfeeding combined with oxytocin massage in the hypnobreastfeedin group and massage oxytocin productionbreast milk 79.10 ml/2 pumps/day, the hypnobreastfeeding group only (60.51 ml/2 pumps/day), oxytocin massage only (53.32 ml/2 pumps/day), and the control breast care group 41, 18 ml/2 pumps/day. Studies providing music therapy The volume of breast milk in the music therapy group increased significantly during the four days of the intervention. Day 1 with MT was 7.04 ml (SD ± 1.49) and NMT was 6.56ml (SD ± 1.49) v/s day 4 with MT 7.86 ml (SD ± 1.32) and NMT was 7.34 ml (SD ± 1.31) & statistically significant (p-value: 0.024). The study that gave

music therapy to the experimental group produced significantly more breast milk ($P < 0.0012$). The mothers in this group also produced milk with a significantly higher fat content during the first 6 days of the study.

Two articles used prolactin hormone levels to measure milk production in postpartum mothers. Values ($p < 0.05$) for both treatment groups. The intervention group produced 200 grams of breast milk and the hormone prolactin 250 ng/ml, in the acupressure group the production of breast milk was 90 grams and the hormone prolactin was 100 ng/ml. In another study, the intervention group had higher prolactin levels (273.53 ng/ml) than the control group (209.37 ng/ml). In another study, prolactin levels were found to be higher in postpartum mothers with normal glucose levels than in postpartum mothers with prediabetes/diabetes (mean 98.2 vs 80.2 ng/mL, $P = 0.0003$).

DISCUSSION

E. Effect of Relaxation Therapy on the anxiety of pregnant women

Anxiety and worry in pregnant women if not handled seriously will have an impact and influence on the physical and psychological well-being of the mother and the fetus. Anxiety in pregnant women will increase when the delivery schedule is getting closer, namely entering the third trimester, the mother begins to think about the birth process and the condition of the baby to be born. Mothers who suffer from

stress and anxiety during the third trimester of pregnancy will experience an increase in the release of stress hormones, causing disruption of blood flow in the uterus and resulting in weak uterine muscle contractions. This incident causes the length of the labor process (long parturition), the risk of sectio caesaria, and delivery with tools.

The risk for the baby can cause congenital abnormalities in the form of failure to close the cleft palate, premature birth, giving birth to babies with low birth weight (LBW), emergency (fetal distress) and in the long term related to behavioral and emotional disorders in children. Hypnosis has been used for a long time in clinical practice to treat health problems including stress and anxiety experienced by pregnant women.

Based on the results of the review, 2 studies that provided music therapy showed a decrease in anxiety scores after the intervention. Both studies took the same research sample for anxiety scores, namely pregnant women who experienced moderate anxiety, but differences appeared in anxiety scores after the intervention. One study decreased the score from 43.72 to 42.79, but the score category was still classified as moderate anxiety. Meanwhile, anxiety scores in other studies decreased from 39.6 (moderate anxiety) to 34.1 (mild anxiety).

The difference in anxiety categories in the two studies was due to differences in the duration of the intervention. There are many factors outside of pregnancy that cause

maternal anxiety levels to increase, this is why giving an intervention for 14 days does not have a significant effect in reducing anxiety scores compared to studies that provide intervention at 48-72 hours postpartum. Statistically, both studies showed a p value <0.005, meaning that the provision of relaxation therapy intervention in the form of music therapy had an effect in reducing anxiety levels in pregnant women.

Another study that shows the results of a significant reduction in anxiety levels is the provision of an intervention in the form of hypnobirthing. Studies that provided an intervention in the form of hypnobirthing showed the experimental group's mean score of 16.47 (normal) was significantly lower than the control group's 95.47 (severe fear). Past meta-analysis results provide evidence that relaxation therapy reduces symptoms anxiety, depression, phobia or worry in anxiety disorder patients. The results of this review support that relaxation technique training is a non-pharmacological intervention that can improve well-being during pregnancy.

F. **Effect of Relaxation Therapy on postpartum maternal anxiety**

Postpartum mothers will experience physiological, psychological and social adaptations. However, not all postpartum mothers can pass the postpartum adaptation smoothly. Postpartum mothers may experience psychological disorders during the postpartum period, one of which is

anxiety. Sudden changes in postpartum mothers are the main causes of emotional disappointment, pain in the early puerperium, fatigue due to lack of sleep during labor and anxiety about her ability to care for her baby, fear of not being attractive to her husband, especially emotions during the first week of being unstable and changes His mood in the first 3-4 days, this period is very varied and influenced by so many factors, the main emphasis is on the nursing approach by providing help, sympathy and encouragement. The results of the previous review presented the results that hypnosis was able to reduce postpartum anxiety.

Based on the results of the review, 2 studies that gave hypnosis showed a decrease in anxiety scores after the intervention. Both studies showed a decrease in anxiety with the normal category. Studies that provide hypnosis in the form of hypnobreastfeeding combined with giving acupressure have shown that anxiety decreases from moderate anxiety (score 14.22) to normal (score 7.67). Another study did not present an anxiety score before the intervention, the measurement of anxiety scores was carried out 4 times at 16, 20, 28 gestational ages and at 36 weeks of gestation, there was a comparison of scores between the intervention group (normal score 2.88) and the control group (score 38.36 severe anxiety).

According to a study that examined the effects of hypnobreastfeeding on anxiety, the results showed that hypnobreastfeeding was able to function as an effective non-pharmacological therapy to reduce anxiety and pain without any adverse side effects. Another study presented data that from 60 postpartum mothers there were significant differences. and significant effect on anxiety between the groups given the hypnobreastfeeding intervention and those who were not given the hypnobreastfeeding intervention.[43] Hypnobreastfeeding relaxation can be done since the third trimester during pregnancy. It can be used as a means to communicate with the baby and prepare for labor and can reduce pain during labor. Mothers who have relaxed since pregnancy can go through the labor process in a relaxed, comfortable manner and are more prepared to become mothers when the baby is born. In addition, it can reduce the risk of postpartum depression.

Another study presents data that hypnosis is able to reduce cortiol hormone levels in third trimester pregnant women, if carried out continuously during breastfeeding it can reduce cortisol levels so as to create a sense of comfort during breastfeeding and increase milk production. One of the factors that have the potential to contribute to increased cortisol levels in postpartum mother is the effect of the mother's sleep hours. Fatigue and sleep disturbances from breastfeeding at night or early in the morning can be stressors and alter the stress response. In addition, women who breastfeed their babies directly may wake up more than once during

the night to nurse their babies. And after waking up in the morning the mother immediately started daily activities, so the rhythm of cortisol secretion began to increase at that time, and resulted in higher cortisol levels.

G. Effect of Relaxation Therapy on postpartum mother's milk production

Breast milk is the main choice of food for infants, because at birth the baby produces only a small amount of salivary or pancreatic amylase, thus the baby is not ready to digest complex carbohydrates obtained from solid foods. In addition, breastfeeding provides many benefits, including the fulfillment of nutritional, immunological and psychological needs. Meanwhile, the benefit for the mother is that the reproductive organs of the mother will return to their pre-pregnancy state more quickly and will increase closer contact between mother and baby. As a method that is able to create persuasive situations in one's subconscious, hypnobreastfeeding is able to increase the motivation and confidence of mothers to produce and give breast milk to babies, create a sense of comfort, reduce anxiety experienced by mothers during breastfeeding. The results of a previous review showed that relaxation therapy has been shown to increase milk production in mothers of premature babies. Body and mind stress-releasing techniques have a positive effect on breastfeeding duration.

Based on the results of the review, 2 studies that provided hypnobreastfeeding showed an increase in breast milk volume after the intervention. The duration of the intervention was 7 and 4 days, respectively. In studies that provide intervention for 7 days have more breast milk volume. Average volumebreast milkbefore treatment 210 ml/2 pumps/day and after treatment 255 ml/2 pumps/day on day 7 after the intervention. Another study in the hypnobreastfeeding group, the volume of breast milk was 60.51 ml/2 pumps/day on day 4 after the intervention.Differences in volume are affected by the end point of data collection. According to theoryon the days the first time the baby is born, if the baby is breastfeeding well, the breasts will empty quickly and produce more milk, the milk production will gradually be produced 10-100 ml / day on days 1-9 after giving birth, and will be optimally 700-800 ml at 10-14 days.

The results show that hypnotherapy is more effective in triggering the hormone prolactin which then triggers an increase in breast milk production, because hypnobreastfeeding can affect the mother's belief, even though it is temporary, in the form of focus of attention.

CONCLUSIONS

Based on the previous discussion, the authors conclude that Relaxation Therapy is in the form of:

1. Hypnosis, Music Therapy, and Benson's

relaxation technique are able to overcome anxiety in postpartum mothers, and a decrease in cortisol hormone levels which is one of the parameters for assessing anxiety levels in postpartum mothers.

2. Hypnobreastfeeding and Music Therapy is able to overcome the problem of insufficient milk production in postpartum mothers and increase the hormone prolactin which is the hormone that determines breast milk production.

REFERENCES

Ali, Farida, Mgongo, Melina, Mamseri, Redempta, George, Johnston M., Mboya, Innocent B., & Msuya, Sia E. (2020). Prevalence of and factors associated with early initiation of breastfeeding among women with children aged< 24 months in Kilimanjaro region, northern Tanzania: a community-based cross-sectional study. *International Breastfeeding Journal*, *5*(1), 1–10.

Bauer, Constance L., Victorson, David, Rosenbloom, Sarah, Barocas, Joshua, & Silver, Richard K. (2010). Alleviating distress during antepartum hospitalization: a randomized controlled trial of music and recreation therapy. *Journal of Women's Health*, *3*(3), 523–531. https://doi.org/10.1089/jwh.2008.1344

Cai, Xiaodong, Wardlaw, Tessa, & Brown, David W. (2012). Global trends in exclusive breastfeeding. *International Breastfeeding Journal*, *7*(1), 1–5.

Downe, Soo, Finlayson, Kenneth, Melvin,

Cathie, Spiby, Helen, Ali, Shehzad, Diggle, Peter, Gyte, Gill, Hinder, Susan, Miller, Vivien, & Slade, Pauline. (2015). Self-hypnosis for intrapartum pain management in pregnant nulliparous women: a randomised controlled trial of clinical effectiveness. *BJOG: An International Journal of Obstetrics & Gynaecology*, *2*(9), 1226–1234. https://doi.org/10.1111/1471-0528.13433

Duijts, Liesbeth, Jaddoe, Vincent W. V, Hofman, Albert, & Moll, Henriëtte A. (2010). Prolonged and exclusive breastfeeding reduces the risk of infectious diseases in infancy. *Pediatrics*, *2*(12), e18–e25. https://doi.org/10.1542/peds.2008-3256

Fotiou, Catherine, Siahanidou, Tania, Vlastarakos, Petros V, Tavoulari, Evangelia Filothei, & Chrousos, George. (2018). The effect of body and mind stress-releasing techniques on the breastfeeding of full-term babies; a critical analysis of published interventional studies. *The Journal of Maternal-Fetal & Neonatal Medicine*, *3*(1), 98–105. https://doi.org/10.1080/14767058.2016.1275547

General, Secretariat. (2017). Indonesian health profile in 2016. In *Jakarta: Ministry of Health Republic of Indonesia*.

Ho, Carol. (2013). Optimal duration of exclusive breastfeeding: Summaries of nursing care-related systematic reviews from the Cochrane Library. *International Journal of Evidence-Based Healthcare*, *2*(11), 140–141. 10.1111/1744-1609.12015

Kestler-Peleg, Miri, Shamir-Dardikman,

Merav, Hermoni, Doron, & Ginzburg, Karni. (2015). Breastfeeding motivation and self-determination theory. *Social Science & Medicine*, *4*(14), 19–27. https://doi.org/10.1016/j.socscimed.2015.09.006

Lazard, Allison J., Scheinfeld, Emily, Bernhardt, Jay M., Wilcox, Gary B., & Suran, Melissa. (2015). Detecting themes of public concern: a text mining analysis of the Centers for Disease Control and Prevention's Ebola live Twitter chat. *American Journal of Infection Control*, *4*(10), 1109–1111. https://doi.org/10.1016/j.ajic.2015.05.025

Legrand, Fabien, Grévin-Laroche, Corinne, Josse, Elisabeth, Polidori, Guillaume, Quinart, Hervé, & Taïar, Redha. (2017). Effects of hypnosis during pregnancy: A psychophysiological study on maternal stress. *Medical Hypotheses*, *2*(10), 123–127. https://doi.org/10.1016/j.mehy.2017.03.026

Letiniḷ, Judita Grzunov, Sariḷ, Marijana Matek, Piasek, Martina, Jurasoviḷ, Jasna, Varnai, Veda Marija, Grgec, Antonija Sulimanec, & Orct, Tatjana. (2016). Use of human milk in the assessment of toxic metal exposure and essential element status in breastfeeding women and their infants in coastal Croatia. *Journal of Trace Elements in Medicine and Biology*, *3*(8), 117–125. https://doi.org/10.1016/j.jtemb.2016.08.002

Li, W., Newell-Price, J., Jones, G. L., Ledger, W. L., & Li, T. C. (2012). Relationship between psychological stress and recurrent miscarriage. *Reproductive Biomedicine Online*, *2*(2), 180–189. https://doi.org/10.1016/j.rbmo.2012.03.012

Loke, Alice Yuen, & Chan, Lai-Kwai S. (2013). Maternal breastfeeding self-efficacy and the breastfeeding behaviors of newborns in the practice of exclusive breastfeeding. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *4*(6), 672–684. https://doi.org/10.1111/1552-6909.12250

Meedya, Shahla, Fahy, Kathleen, & Kable, Ashley. (2010). Factors that positively influence breastfeeding duration to 6 months: a literature review. *Women and Birth*, *2*(4), 135–145. https://doi.org/10.1016/j.wombi.2010.02.002

Newby, Jill M., Lang, Tamara, Werner-Seidler, Aliza, Holmes, Emily, & Moulds, Michelle L. (2014). Alleviating distressing intrusive memories in depression: A comparison between computerised cognitive bias modification and cognitive behavioural education. *Behaviour Research and Therapy*, *5*(6), 60–67.

Shin, Hye Sook, & Kim, Ju Hee. (2011). Music therapy on anxiety, stress and maternal-fetal attachment in pregnant women during transvaginal ultrasound. *Asian Nursing Research*, *5*(1), 19–27. https://doi.org/10.1016/S1976-1317(11)60010-8

Tragea, Christina, Chrousos, George P., Alexopoulos, Evangelos C., & Darviri, Christina. (2014). A randomized controlled trial of the effects of a stress management programme during pregnancy. *Complementary Therapies in Medicine*, *2*(2), 203–211. https://doi.org/10.1016/j.ctim.2014.01.006