

Conference Paper

The Effect of Intervention Package Massage Therapy, Music Therapy, and Aromatherapy (P, M, A Therapy) on Breast Milk Adequacy

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Effective breastfeeding is the main effort to create optimal life and baby viability. Breastfeeding that is not optimal can be affected by maternal and baby factors. Optimization of breastfeeding can be done with complementary therapy, such as massage therapy, music therapy, and aromatherapy. This study aims to find out the effect of intervention package massage therapy, music therapy and aroma therapy (P, M, A Therapy), on breast milk adequacy at Baros Public Health Center. This study used a quantitative research design, Quasy Eksperimental research design with pre and posttest without control with a research sample of 20 respondents that was taken by using a total sampling technique. The study's result average respondent before an intervention was 35,85, standard deviation 2,560, CI 95% 34,63-37,05. The average respondent after an intervention was 40,35, standard deviation 2,834, CI 95% 39,02-41,68. The results of the statistical test obtained p-value of 0,00 and 0, it was concluded that there was an effect of the PMA therapy on breast milk adequacy. We hope that in future this intervention package can be developed for achieving optimal breastfeeding.

Keywords: intervention package, massage therapy, music therapy, aromatherapy (P, M, A therapy), breast milk

1. Introduction

Breastfeeding is an activity that can increase the bond between mother and child and can bring happiness to a mother. Breast milk is helpful in maintaining the baby's body defenses because it contains protein, fat, carbohydrates, minerals, and vitamins that babies need and is easy to digest [1]. Breastfeeding significant greatly impacts a child's life sustainability, growth, and development [2]. Exclusive breastfeeding in the world is currently at 36% below the target limit World Health Organization (WHO), which they have a minimum target of 50% by 2025, and in several countries in Southeast Asia,

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such as India, at 46%, the Philippines at 34%, and Vietnam 17% (WHO, 2016). Indonesia Health Profile data in 2018 showed that infants who received exclusive breastfeeding were 35.75% (Ministry of Health, 2018), while the Banten Province Health Profile data for complete breastfeeding coverage was 61.6%, Lebak Districts 40.28%, and the data still below the 45% target [3].

Adequate breast milk production is influenced by the stimulation of the baby's sucking and breastfeeding frequency. For mothers who often breastfeed their babies, the milk is produced more smoothly. The frequency of breastfeeding decreases which can decrease the production of oxytocin and prolactin to make breast milk [4]. Inadequate breast milk production will cause the baby often to cry or fuss, and the baby's feces become hard [5]. Deficient breastmilk is the main factor for a mother to stop breastfeeding because of mother feels the breastmilk production is insufficient to fulfill the baby's needs [6]. Mothers stop breastfeeding because stress, anxiety, and working outside the house make breast milk challenging to come out. Another thing is the attractive promotion of formula milk at an economical price, as well as the lack of awareness and knowledge of mothers about the importance of breastfeeding and the benefits of breastfeeding are factors that cause mothers to be reluctant to breastfeed their babies [7].

Complementary methods which can stimulate the hormones prolactin and oxytocin that is acupressure techniques. This acupressure can instruct the pituitary to release hormones prolactin and oxytocin [2]. Acupressure is a massage technique at the specific points then the signal is transmitted to the spinal cord and brain through nerve axons, then activates the Central Nervous System (CNS), which causes changes in neurotransmitters, prolactin and oxytocin hormones, biomechanical effects, endorphins and cytokinins causing normalization and balance effects [8].

The result of a previous study conducted by [9] on day 7 showed that there was an average difference before and after the intervention at 310 points, so there was a significant difference of breast milk adequacy between before and after the intervention with a p-value $0.000 < 0.005$. This is in line with research conducted by [6] said that mothers who received acupressure could increase comfort and milk production more than oxytocin massage. Another effort to increase breast milk production is to create comfort during the breastfeeding process, so then mothers can relax, namely with aromatherapy and music therapy.

Music is an art that can affect the sympathetic nervous system either directly or indirectly. The selection of the appropriate kind of music for the nursing intervention needs to be recognized to get a better result. Generally, type of music is used in classical music (Mozart) because this music has a slow and regular tempo of around 60-80 beats per minute. Classical music has a melody, rhythm, and frequency that other composers haven't. So that can affect the hypothalamus, pituitary, and adrenal glands to inhibit the stress hormone release, so the production of hormones oxytocin and prolactin are maximized [10]. [11] said that classical music is used as an option for relaxation to create a comfortable environment and increase the oxytocin hormone.

Aromatherapy is a treatment technique with the aroma of essential oils from the distillation process of various parts of plants, flowers, and trees, each of which has a different therapeutic function [12]. The benefits of aromatherapy can provide a relaxing effect for tense nerves and muscles. Lavender flower type (*Lavandula officinalis*) is a family of Lamiaceae, a plant often used in aromatherapy. Lavender contains camphor, terpene-4-ol, linalool, linalyl acetate, beta-ocimene, and 1,8-cineole. Studies on the aromatherapy benefits of lavender have shown that linalool and linalyl acetate present in lavender can stimulate the parasympathetic system. In addition, linalyl acetate has a narcotic effect, and linalool acts as a sedative [12].

The Effect of lavender essential oil on the adequacy of breast milk production has been carried out in previous research by [13] explains that doing massage on the back area using a lavender essential oil on breast milk production there is a difference in the smoothness of milk production between the group who massages using lavender oil and the group who doesn't use lavender oil with a p-value of 0.007 and an OR of 4.84 (65% CI 1.68-13.93).

Data obtained from the Baros Health Center, exclusive breastfeeding for the first six months is still experiencing problems, that can be seen in the percentage of mothers who breastfeed babies from 0-5 months, as much as 57,3%, while the rate of mothers who breastfeed babies for six months is 30.5%. This achievement is still very far from the target by the Lebak District Health Office in 2020. There has been no study of literature in previous studies that have conducted research that combines these three interventions on breastfeeding adequacy. It is increasingly interesting to study whether there is an effect of providing massage therapy intervention packages, music therapy, and aromatherapy on the adequacy of breastfeeding in Cibuah Village, Baros Health Center Work Area.

2. Methods

2.1. Study design

This study used a quantitative type with a quasi-experimental research design or a quasi-experimental kind of Pre-test and Post-test without control (self-control) is a study that tests an intervention in one group without a comparison group. This research was conducted in December in Cibuah Village, Baros Health Center, Warunggunung District, Lebak Banten Regency 2021.

2.2. Sample

The population in this study were mothers who were breastfeeding infants aged 0-12 months without being mixed with formula milk of 20 people. The number of respondents in this study was taken using a total sampling technique.

2.3. Data collection procedure

The research design was pre-test and post-test without control. Before the intervention, respondents were given a pre-test by filling out a questionnaire consisting of 11 questions to measure the initial condition of adequacy of breastfeeding. Assessment using a Likert scale with four answer choices given a score of 4, often given a score of 3, sometimes given a score of 2, and never given a score of 1. In this study, each mother was given three acupressure techniques (jjangjing massage, share massage, and the massage). Other interventions are music therapy and aroma therapy using lavender aroma. The interventions were carried out simultaneously for one week. After the intervention was completed, the group conducted a post-test.

3. Results

TABLE 1: Distribution of Adequacy of Breastfeeding Before and After Intervention in Cibuah Village, Baros Health Center Working Area in 2021.

Variabel	N	Mean	Min-Max	95% CI
Before Intervention	20	35,85	31-39	34,63 – 37,05
After Intervention	20	40,35	35-44	39,02 – 41,68

TABLE 2: Differences in Average Sufficiency of Breastfeeding Before and After Interventions on Adequacy of Breastfeeding in Cibuah Village, Baros Public Health Center Working Area in 2021.

Differences in Average Sufficiency of Breastfeeding Before and After Interventions	Difference ± SD	SE	df	T(test)	P-value
Differences in Average Sufficiency of Breastfeeding Before and After Interventions	-4,50 ± 1,100	0,246	19	-18,291	0,000

TABLE 3: Effect of Adequacy Before and After Interventions for Massage Therapy, Music Therapy, and Aromatherapy on Breast Milk Adequacy in Cibuah Village, Baros Health Center Work Area in 2021.

Adequacy of Breast Milk	Mean ± SD	SE	T (test)	P-value
Before	35,85 ± 2,560	0,573	-5,270	0,000
After	40,35 ± 2,834	0,634		

The distribution of respondents before and after being given the intervention of Massage Therapy, Music Therapy, and Aromatherapy is shown that from a total of 20 respondents, the average value of the adequacy of breastfeeding before being given the intervention of massage therapy, music therapy, and aroma therapy is 35.85 with a minimum-maximum value of 31-39 and a 95% confidence level CI 34.63 - 37.05. The average value of breast milk adequacy after the intervention of massage therapy, music therapy, and aroma therapy is 40.35 with a minimum-maximum value of 35-44 at a 95% confidence level CI 39.02 - 41.68.

The difference in the average adequacy of breastfeeding before and after the intervention is -4.50 with a standard deviation of 1.100. The results of the statistical test paired sample t-test obtained a p-value of 0.000 when compared with an alpha value of 0.05; it was concluded that there was a significant difference between the adequacy of breast milk before and after the intervention of massage therapy, music therapy, and aroma therapy.

The average value of the adequacy of breastfeeding before the intervention is 35.85 with a standard deviation of 2.560. Meanwhile, after the intervention, the average adequacy of breastfeeding was 40.35, with a standard deviation of 2.834. Statistical tests using the dependent T test obtained a p-value of 0.000 where $p < \alpha$ (0.05). So the statistical test decisions have the effect of massage therapy, music therapy, and aroma therapy on the adequacy of breast milk.

4. Discussion

4.1. Description of Respondents Before and After Giving Intervention

Breastfeeding is a natural process for a mother to support and prosper the child after giving birth. The breastfeeding process that is not easy requires strength to be successful (Salamah & Prasetya, 2019). In the continuum of care theory, it is explained that the first thousand days of a human's life, from the time in the fetus to the age of two years, is an essential phase that not only affects the short term but the long term of their life. One thing that is recommended to fulfill an essential phase in the first six-month period is exclusive breastfeeding (Marwiyah & Khaerawati, 2020). Efforts are made to provide a relaxed sensation to the mother, thereby increasing the production of the hormones prolactin and oxytocin, which will be flowed by the blood to the myoepithelial breast cells to produce breast milk, that it can also smooth the flow of nerves and milk channels in both breasts (Dinengsih, 2020).

Massage Therapy with three massage techniques (jiangjing massage, share massage, and hegu massage) are performed at different points of emphasis. The jiangjing massage applies pressure to the acromioclavicular area, and the seventh cervical vertebra, the share massage to the area on the ulnar side of the 5th finger, and the hegu massage apply pressure to the highest point of the muscle between the thumb and index finger. Each massage is done for 5 minutes while taking a deep breath. The duration of acupressure suppression highly affects the quality of breast milk production, according to [14]. The length of time needed to do acupressure should be done for 5 minutes because it is well for the quality of breast milk production. They are then practiced by the mother and family for one week in a row independently at their respective homes. In addition, mothers are given lavender aromatherapy and music therapy which aim to provide a relaxing effect during breastfeeding. After that, a post-test was carried out twice a week in the second week.

Giving Mozart classical music therapy to breastfeeding mothers significantly relaxes tense and stiff muscles and increases the productivity of oxytocin and prolactin hormones. Research conducted by [15] explains that there is a linear relationship between the provision of classical music therapy, which is carried out regularly, and the adequacy of breastfeeding based on an increase in the baby's weight of at least 500 grams every month or 125 grams every week.

Giving aromatherapy has the function of providing mothers become relaxed and comfortable so that they can produce abundant breast milk. Research by [16] said that lavender aromatherapy inhaled by the sense of smell is a quick effort to increase the hormone oxytocin release. It provides comfort to the mother, calms, restores self-confidence, gives the mother positive thoughts and feelings towards her baby, increases milk production, and facilitates breastfeeding.

The indicators of breast milk adequacy in the study can be observed based on the baby's weight, frequency of bowel movements, baby's behavior, the frequency of adequate sleep, the baby breastfeeds at least ten times in 24 hours, the condition of the mother's breast, the mother can feel ticklish when the baby suckles, and the mother can hear baby swallowing. This is thought after the intervention of massage therapy, music therapy, and aromatherapy that has been given. This research is in line with previous research conducted by [17], which stated that the category of sufficient or insufficient breastfeeding for infants could be seen from the baby's behavior, baby's sleep pattern, baby's weight, baby's bowel, bladder, and the condition of the mother's breast.

4.2. Effect of Adequacy of Breastfeeding Before and After the Intervention

Massage on specific body points is an effort that can be done to stimulate the hormones prolactin and oxytocin in the mother after giving birth. Massage can provide a relaxed sensation to the mother, who will stimulate nerve cells in the breast, then transmitted to the hypothalamus and responded by the anterior pituitary to release the hormone prolactin, which will be flowed by the blood to the myoepithelial cells of the breast to produce breast milk. The action of massage can also affect the hormone oxytocin, which functions as a stimulus for breast milk production in mothers during breastfeeding (Dinengsih, 2020). Massage interventions that are carried out must pay attention to aspects of the accuracy of massage techniques because they can affect breast milk productivity. This study is supported by previous research by Cholifah et al. (2014) showed that doing massage or pressure on acupressure points can affect the adequacy of breast milk. Based on the data obtained that the adequacy of breast milk in the intervention group increased from 35% to 85%.

Classical music therapy has been widely used to resolve emotional tension, namely personal anxiety. Classical music has the function of calming negative thoughts and

emotions and also can optimize the tempo, rhythm, melody, and regular harmony to produce alpha waves of beta waves in the eardrum; it will provide calm that makes the brain ready to accept new knowledge, relaxing effect, and fall asleep [18]. Music therapy can be done at home, done when the mother is relaxed and anywhere, with the sound (volume) not too loud or weak; the point is that the volume can make the mother feel comfortable and make the mother fully concentrate. The duration should be about 30 minutes every day. To get the benefits of listening to music, pregnant women are encouraged to attend with full attention and awareness that music can calm the mother's mind. Thus the rhythm of music can encourage mothers to be passionate, creative, and fun [19].

According to [18] said that there was an effect from giving music classical Mozart therapy which significantly to breast milk production. Music therapy has been proven to be a relaxation therapy because music can affect the brain system that suppresses relaxation treatment. After all, the hypothalamus, pituitary, and adrenal glands to inhibit stress hormones (epinephrine, norepinephrine, dopa, corticosteroids) release so that the production of the hormones oxytocin and prolactin is maximized. Music and health are tied, and no doubt, listening to one's favorite music can be brought into a good mood. This study also obtained similar results after being given classical music therapy to breastfeeding mothers aged 0-12 months in Cibuah village in the working area of the Public Health Center that mothers felt comfortable and breast milk production increased compared to before the intervention.

Giving aroma therapy has been carried out in previous studies, and it has been proven that giving lavender aromatherapy can affect breast milk productivity and provide a relaxing effect on the mother, according to Ohorella et al., (2021) entitled the effectiveness of lavender steam aromatherapy and oxytocin massage on breast milk production in postpartum mothers. This study also had the same result that giving aromatherapy to breastfeeding mothers aged 0-12 months facilitated breast milk production more than before the intervention.

5. Conclusion

The results of the research conducted in Cibuah Village, Baros Health Center Work Area, Lebak Regency, showed a difference in the average adequacy of breastfeeding before and after the intervention. Statistical analysis showed a significant effect between

the intervention package of massage therapy, music therapy, and aromatherapy on the adequacy of breastfeeding with a p-value of $0.000 < 0.005$. The results of this study also indicate that the lack of adequate breast milk is influenced by several reasons mothers do not breastfeed their children, one of which is stress. So the intervention of massage therapy, music therapy, and aromatherapy is an effort to make the mother relax so that the milk products produced can meet the baby's needs.

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6. Conflict of Interest

The authors have no conflict of interest to declare.

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