

Aromatic Back Massage Guidance Improves Knowledge And Skills Of Pregnant Women In Preparing For Breastfeeding In Dangin Puri Klod Village, Bali Province

Made Widhi Gunapria Darmapatni^{1*}, Listina Ade Widyaningtyas²
Ni Gusti Kompiang Sriasih³, Ni Nyoman Suindri⁴

¹Lecturer, Polytechnic of Health Denpasar, Bali, Indonesia

^{2,3,4} Lecturer, Polytechnic of Health Denpasar, Bali, Indonesia

*Corresponding Author:

Email: widhigunapria@poltekkes-denpasar.ac.id

Abstract.

The stunting reduction program is a priority program of the Denpasar City government. The target prevalence of stunting in Denpasar City is expected to reach 4% in 2023. Currently, there are still 482 children with stunting spread across 21 villages/subdistricts in Denpasar City. To achieve this, massive stunting prevention efforts are needed during the first 1000 days of life, starting from pregnancy until the child is 2 years old. Exclusive breastfeeding is an important factor in child nutrition. One of the problems faced in breastfeeding is feeling that there is not enough breast milk to meet the baby's needs. This community service aims to identify knowledge and skills before and after guidance. The activity will take place from August to September 2025. The target is pregnant women in Dangin Puri Klod Village, Bali. Aromatic Back Massage guidance is a combination of 5 basic massage techniques with aromatic oil along the spine, providing a relaxing effect and stimulating the ejection of prolactin and oxytocin. The guidance had an impact on increasing the knowledge and skills of the target group. Direct guidance for pregnant women provided many opportunities to share experiences and knowledge within the group. Updated information encouraged pregnant women to be more enthusiastic in participating in activities and practicing what they had learned. Information media also played an important role in maintaining the knowledge and skills of pregnant women in preparing for the breastfeeding period

Keywords: Aromatic Back Massage; Breastfeeding; Guidance and Stunting.

I. INTRODUCTION

Early exclusive breastfeeding is very important for a child's survival because it can protect against various fatal diseases, such as diarrhea and pneumonia. According to 2021 Riskesdas data, only 52.5% or half of the 2.3 million infants under six months of age in Indonesia were exclusively breastfed, a 12% decrease from 2019. Therefore, the availability of educational services on preparing for exclusive breastfeeding for all pregnant women, both in person and through digital platforms, is urgently needed (Riskesdas 2022). Based on data, the coverage of exclusive breastfeeding for infants aged 6 months in Bali Province is 76.96%, and the coverage of early breastfeeding initiation (EBI) is 63.01%. These achievements are above the set targets of 45% for exclusive breastfeeding and 58% for EBI (1). Looking at the figures above, there is a gap of 14% between exclusive breastfeeding coverage and EBI coverage, indicating that not all infants under 6 months who receive exclusive breastfeeding are given early breastfeeding initiation at birth (2). In Denpasar City, the coverage for exclusive breastfeeding for infants under 6 months in 2022 reached 63.5%, but this figure is still highly fluctuating. In the Technical Implementation Unit Community of Health Center, East Denpasar I Health Office, which covers the village of Dangin Puri Klod, the achievement of exclusive breastfeeding was 59.2%, below the achievement of the Denpasar City Health Office (3). Exclusive breastfeeding can reduce the risk of stunting. Breast milk contains fats and proteins that are important for the physical growth of babies.

Antibodies in breast milk also boost the baby's immune system, making them less susceptible to disease. Breast milk is an emulsion of fat in a solution of protein, lactose, and inorganic salts secreted by the mother's mammary glands. Breastfeeding is the most beautiful and precious moment for a mother and her child. When a mother breastfeeds, a bond is formed between mother and child. The gaze between the two

becomes the most effective means of communication. At that moment, a language of love is conveyed (4). In preparation for breastfeeding, knowledge about overcoming breastfeeding challenges is very important. Breastfeeding mothers often feel that their breast milk is insufficient and unable to meet the baby's needs, even though we know that breastfeeding is physiological and can be done by all mothers (3). In this situation, breastfeeding mothers need to make efforts to increase milk production to avoid failing to provide exclusive breastfeeding. Research findings indicate that postpartum mothers who receive breastfeeding care show increased confidence in breastfeeding and have a positive effect on continued breastfeeding compared to those who only receive routine care as usual. Breast milk flows smoothly and earlier, on the second day. Mothers who did not receive massage had low breast milk production; although breast milk flowed, it took longer, on days 3-4 (5). Specific care that can be provided without excessive intervention and can empower mothers and families to increase breast milk production is back massage combined with aromatherapy. Back Massage involves massaging the back along the vertebral column using effleurage, petrissage, friction, tapotage, and vibration techniques, which accelerate the parasympathetic nervous system's transmission of commands to the posterior brain after childbirth to stimulate the oxytocin reflex or let-down reflex (6).

This postpartum massage is an effective and holistic approach to adjusting to the role of motherhood. Massage is useful for relaxation, stress reduction, pain relief, and other health benefits. Unique benefits during the postpartum period include hormone regulation, reduced swelling, better sleep, and improved breastfeeding. This therapy helps the body return to its pre-pregnancy condition, accelerates healing, and aids recovery (7). Massage movements are recommended to be performed with the hands and fingers as they are more practical, effective, efficient, and provide better pressure, which is beneficial for stimulating the milk ejection reflex (8). Massage techniques combined with aromatherapy help enhance relaxation, hormone balance, cleansing, and treatment of anxiety or depression. Most essential oils are safe, high quality, and do not cause allergies. Research has found that the use of aromatherapy in back massage is effective in increasing breast milk production. The essential oils used during massage will evaporate and be inhaled by the mother. The administration of aromatherapy by inhalation or topically provides many benefits. When essential oils are administered through massage techniques or gentle touch, the mother will relax and tense muscles will be reduced, thereby facilitating breast milk production (9),(10). Based on this background, the knowledge a person gains through experience, observation, or learning—in the form of information, facts, truths, and trained skills—will equip pregnant women to breastfeed effectively and overcome low milk supply issues using the Aromatic Back Massage Technique.

II. METHODS

This community service activity was conducted in August and September 2025 at the Dangin Puri Klod Village Office, East Denpasar District, Denpasar City, Bali Province. This location was chosen because it is one of the villages in the center of Denpasar City that has a high commitment and is active in stunting prevention efforts, as well as being a representative public space for community-based educational activities. The participants consisted of 20 pregnant women in Dangin Puri Klod Village who were willing to be the targets of the community service and whose pregnancies were not classified as high risk. This activity also involved lecturers and student volunteers because it was part of the university's Community Service Program (PKM). Additionally, the presence of the village head, the village welfare officer, and the village midwife created synergy between the pregnant women, health workers, village officials, and academics.

The activity stages were carried out according to the monthly pregnancy class schedule. Each class began with an opening and introduction to the activity program, followed by back massage guidance. Aromatic therapy includes providing information and practical training. It begins with a pretest, followed by information delivery through audio-visual media and practical training conducted through direct and comprehensive demonstrations. Participants also receive booklets to read and take home. After the guidance session, there is a discussion session facilitated by volunteers to explore understanding, needs, and challenges in breastfeeding practices within families. At the end of the activity, a post-test is conducted to assess changes in mothers' knowledge and skills related to aromatic back massage.

III. RESULT AND DISCUSSION

Community service activities were carried out through counseling and demonstrations, targeting pregnant women. These activities involved collaboration with relevant partners in the implementation of activities, from planning to the final evaluation, which went well. The form of collaboration was coordination with the Head of Community Welfare and village midwives to determine the implementation. Before the guidance was carried out, a pretest was conducted using a questionnaire. During the guidance, based on previous experiences, many pregnant women stated that they were not ready to breastfeed exclusively because they worked, their babies were fussy, and they had little breast milk, so they were given formula milk.

They had the perception that babies who consumed formula milk would grow faster than babies who were only given breast milk. The community still believes that babies can be given honey and holy water on the grounds that they will go hungry if they are only given breast milk and will become pious children. Pregnant women have also never heard of the Aromatic Back Massage Technique. Mothers' ignorance of the importance of exclusive breastfeeding and how to overcome obstacles to breastfeeding is the reason they do not breastfeed. After receiving guidance and undergoing an evaluation, it was found that pregnant women, after giving birth, have the desire to breastfeed exclusively and will attempt to provide exclusive breastfeeding and apply the Aromatic Back Massage Technique. Based on the analysis of pre- and post-test data, the results can be summarized as follows:

Tabel 1. Frequency Distribution of Pregnant Women's Knowledge Before and After Receiving Aromatic Back Massage Guidance.

Knowledge Variable	f	Median (Min -Max)	Mean
Pretest	20	7 (5-11)	7,65
Postes	20	17 (13-20)	17,15

Table 1. Pre-test knowledge median of 7, maximum of 11, and minimum of 5, with an average knowledge score of 7. Post-test knowledge median of 17, with a maximum score of 20 and minimum of 13, with an average knowledge score of 17.15. The results of community service activities show that Aromatic Back Massage guidance is very helpful in increasing the target group's knowledge. Efforts such as counseling, education, or counseling will be more effective if carried out from pregnancy to breastfeeding. This is in line with research findings that counseling conducted after childbirth has an effect on breastfeeding for 4 to 6 weeks, while counseling conducted during pregnancy and after childbirth has an effect on exclusive breastfeeding for up to 6 months (11). One factor that plays an important role in the success of exclusive breast feeding is knowledge, so the most common effort made in the community is to provide early counseling to mothers and families so that they can understand how to increase breast milk production. In addition, support from immediate family and health workers can also boost confidence in breastfeeding (12),(11). Breastfeeding education can increase exclusive breastfeeding and reduce the rate of non-breastfeeding at birth, i.e., less than 1 month and 1 to 5 months of age. Group education is more effective than individual education. Interventions in developing countries have a greater impact than interventions in developed countries (12).

Table 2. Frequency distribution of pregnant women's skills before and after receiving *aromatic back massage guidance*.

Skill Variable	f	Median (Min -Max)	Mean
Pretest	20	5 (5-7)	5,1
Postes	20	14 (12-14)	13,5

Table 2. Pretest skills with a median of 5, a maximum score of 7, and a minimum score of 5, with an average skill score of 5.1. Posttest skills with a median of 14, a maximum score of 14, and a minimum score of 12, with an average skill score of 13.5. During the demonstration, the breastfeeding mothers appeared very enthusiastic to pay attention, and three mothers wanted to be trained directly using the phantom that had been provided. Direct demonstrations can help mothers learn techniques that they can do at home to increase milk

production. The results of a study to prove that massage along the vertebrae stimulates the hormones prolactin and oxytocin, providing comfort to mothers, reducing swelling, and maintaining milk production (13). Increased milk production can be caused by an increase in a sense of comfort and relaxation when given an oxytocin massage (14).



Fig 1. Aromatic Back Massage Guidance Activity in Dangon Puri Klod Village, Bali.

IV. CONCLUSION

Overall, the community service activity had an impact on increasing the knowledge and skills of pregnant women in preparing for breastfeeding through *aromatic back massage* guidance. The community service program held at the Antenatal Class in Dangin Puri Klod Village, Bali, ran smoothly according to plan, and an increase in knowledge and skills was found among the target group. The targets were enthusiastic, as evidenced by the critical questions they asked the community service participants. Satisfaction with this community service activity was very good. This was evident from the responses stating that the material and practical guidance provided were in line with the needs of the targets. Aromatic back massage guidance was new information for pregnant women. The targets actively participated in the activity from start to finish, were cooperative, and were able to provide relevant feedback.

V. ACKNOWLEDGMENTS

The volunteers would like to express their deepest gratitude to the Director of the Denpasar Ministry of Health Polytechnic for providing support in the implementation of this community service. We would also like to thank the Head of Dangin Puri Klod Village and his staff for the facilities and time they provided us. Last but not least, we would like to thank the village midwife and the entire volunteer team who helped in the implementation.

REFERENCES

- [1] Unicef. Pekan Menyusui Sedunia: UNICEF dan WHO serukan dukungan yang lebih besar terhadap pemberian ASI di Indonesia seiring penurunan tingkat menyusui selama pandemi COVID-19 [Internet]. 2022. Available from: <https://www.unicef.org/indonesia/id/siaran-pers/pekan-menyusui-sedunia-unicef-dan-who-serukan-dukungan-yang-lebih-besar-terhadap>
- [2] Bali Provincial Health Service. Profil Kesehatan Provinsi Bali. Bali Prov Heal Serv. 2023;1–367.
- [3] Denpasar DKK. Profil Kesehatan Kota Denpasar Tahun 2023. Dinas Kesehatan Kota Denpasar. 2023. 72 p.
- [4] Kemenkes RI. Profil Kesehatan Indonesia 2021 [Internet]. Pusdatin.Kemkes.Go.Id. 2022. Kementerian Kesehatan Republik Indonesia. Available from: https://kemkes.go.id/app_asset/file_content_download/Profil-Kesehatan-Indonesia-2021.pdf
- [5] Awano M, Shimada K. Development and evaluation of a self care program on breastfeeding in Japan: A quasi-experimental study. *Int Breastfeed J*. 2010;5:1–10.
- [6] Suryani N. The Effect of Lactation Massage on Breast Milk Production in Postpartum Mothers at The PAMC Garut Clinic. *Nurs Case Insight J*. 2024;2(2):41–4.
- [7] Nurul Azizah RR and HM. The Comparison of The Effectiveness Back Massage with Clary Sage Essential Oil and Postpartum Exercise for Post Partum Uterus Involutio. *J Phys Conf Ser* [Internet]. 2018;1:2020–1. Available from: <https://iopscience.iop.org/article/10.1088/1742-6596/1114/1/012009>
- [8] Darmapatni MWG, Suindri NN, Sriasih NGK. Miyik-Miyikan Aromatherapy on Postpartum Back Massage Increases Baby Weight Gain. *J Heal Med Sci*. 2021;4(1).
- [9] Nufus H. Efektivitas Pijat Oksitosin Terhadap Produksi Asi. *J Borneo Cendekia*. 2019;3(2):223–7.

- [10] Fajria Maulida L, Sri Wahyuni E. Upaya Menurunkan Radikal Bebas Dengan Ekstrak Bunga Cempaka Pada Tikus Model Menopause. *Gaster*. 2018;16(1):6.
- [11] Liliana A, Hapsari ED, Nisman WA. Pengaruh konseling laktasi terhadap pengetahuan, kemampuan dan keberhasilan ibu dalam pemberian ASI. *Ber Kedokt Masy*. 2017;33(2):91.
- [12] Safitri A, Puspitasari DA. Upaya Peningkatan Pemberian Asi Eksklusif Dan Kebijakannya Di Indonesia. *Penelit Gizi dan Makanan The J Nutr Food Res*. 2019;41(1):13–20.
- [13] Samsiah S, Nursanti I. Pengaruh Pijat Oksitosin Untuk Meningkatkan Produksi Asi Di Ruang Nifas Rumah Sakit. *Indones J Nurs Pract Pract* [Internet]. 2020;4(1):25–30. Available from: <https://jurnal.umj.ac.id/index.php/ijnsp/article/view/14625>
- [14] Saputri IN, Ginting DY, Zendato IC. Pengaruh Pijat Oksitosin Terhadap Produksi Asipada Ibu Postpartum experimental with the One Group Pre and Post Test Design . *The population in. J Kebidanan Kestra*. 2019;2(1):68–73.