Health Notions
DOI: http://dx.doi.org/10.33846/hn100903
RESEARCH
ISSN 2580-4936
Volume 9 Number 9, September 2025

The Efficacy of Couples' Classes in Increasing Breastmilk Expression and in Preventing Breast Engorgement Amid the Pandemic

Ayesha Hendriana Ngestiningrum1, Nuryani[1]
[1]Midwifery Department, Poltekkes Kemenkes Surabaya, Surabaya, Indonesia
Correspondence: **Ayesha Hendriana Ngestiningrum**: Jl. Pucang Jajar Tengah 56, Surabaya, Indonesia; heruswn@gmail.com

ABSTRACT
There are still obstacles to practicing exclusive breastfeeding. Issues often arise due to a lack of couples' knowledge. A couple's class during pregnancy can be a solution to this. This research aims to analyze the effectiveness of a couple's class in increasing breastmilk expression and in preventing breast engorgement. This was a quasi-experiment with post-tests and a control group design. The population consists of pregnant women in the third trimester and their husbands who live in one house and who are willing to be examined. The number of samples of each group is 25 people that were chosen through the simple random sampling technique. Intervention groups participated in an online couple class and direct guidance once in the first week of giving birth and twice more during the neonatal period. Breastmilk expression and breast engorgement prevention were measured using a checklist. The exclusive breastfeeding in the first month was analyzed using a chi-square examination. The researcher analyzed the difference in breast engorgement between the control group and the treated group using chi-square. There were differences in exclusive breastfeeding between the two groups in the first month with a significance value of 0.034. There was a difference in breast engorgement prevention between the two groups with a significance value of 0.017. In conclusion, the couple's classes were effective in increasing breastmilk expression and in preventing breast engorgement. The online classes were quite effective and efficient during the Covid-19 pandemic.
Keywords: couple's class; breastmilk expression; breast engorgement prevention; breastmilk adequacy

INTRODUCTION
Breastmilk is universally recognized as the most essential and complete source of nutrition for infants, particularly during the first six months of life, when optimal growth, immune development, and protection against infectious diseases are critically needed [1-5]. Despite its importance, various challenges related to breastmilk expression frequently emerge during the early postpartum period. These challenges often occur within the babies' first days of life, a time when mothers are still adapting to physiological and emotional changes. As a result, many mothers experience confusion, uncertainty, and stress, which may lead them to choose alternative feeding options to meet their infants' nutritional needs. One of the prominent issues contributing to this situation is the lack of adequate support from husbands for exclusive breastfeeding, which can significantly influence maternal confidence and breastfeeding success [6-9].

Data from the 2018 Basic Health Research (Riskesdas) indicated that the national coverage of exclusive breastfeeding in Indonesia reached only 68.74% [10]. Similarly, data from the Magetan District Health Office in East Java Province reported exclusive breastfeeding coverage of merely 67.27% in 2017—figures that remain far below the national target of 95%. These statistics highlight persistent gaps in breastfeeding practices and underscore the need for strengthened interventions at both the household and community levels.

The importance of providing breastmilk to infants is strongly emphasized in global recommendations. The World Health Organization (WHO) advises mothers to exclusively breastfeed their babies for the first six months of life to ensure optimal nutritional intake and protection against disease. UNICEF further reports that infants who receive exclusive breastfeeding are 14 times more likely to survive the first six months compared to those who do not. Early initiation of breastfeeding—specifically within the first day of life—has been shown to reduce the risk of neonatal mortality by up to 45%. A study conducted by Mgongo et al. in Kilimanjaro, Tanzania demonstrated that exclusive breastfeeding (EBF) effectively reduces infant mortality by approximately 13% to 15% [11].

Failures in the breastfeeding process can be attributed to multiple factors, including maternal characteristics, infant conditions, the role of health workers, psychological factors, socio-cultural influences, and notably, the level of support provided by husbands. Husband support plays a crucial role in shaping maternal emotions, confidence, and comfort, which in turn affects the physiological reflexes involved in breastmilk expression. Emotional stability and positive reinforcement from husbands have been shown to facilitate smoother milk flow and reduce breastfeeding difficulties [12].

To address these challenges, various strategies have been developed to empower families, particularly by strengthening the role of husbands or partners in supporting exclusive breastfeeding. Husbands can play an active and meaningful role when they possess adequate knowledge and understanding of breastfeeding practices. This understanding can be enhanced through targeted educational interventions. In this study, education for husbands was delivered through a couple's class, involving both pregnant mothers and their husbands. These classes provided comprehensive information on exclusive breastfeeding, common breastfeeding problems, and breast care techniques during the postpartum period. By engaging both partners, the intervention aims to foster shared responsibility, improve maternal confidence, and enhance the overall breastfeeding experience.

Based on the description above, this research aims to analyze the effectiveness of the couple's class in increasing breastmilk expression and preventing breast engorgement. Specifically, the study examines differences in breastmilk expression and breast engorgement outcomes between the intervention group and the control group, thereby assessing the impact of partner-focused education on breastfeeding success.

METHODS
This study was conducted during the early postpartum period, specifically within the first and second weeks after childbirth, in the working area of primary health facilities in Magetan District, East Java, Indonesia. The site was selected due to its relatively low exclusive breastfeeding coverage and the identified need for strengthened family-based breastfeeding support interventions.

The study employed a quasi-experimental design using a pretest–posttest control group approach, which allows for the comparison of changes in outcomes between an intervention group and a control group. This design was chosen because it is appropriate for evaluating the effectiveness of educational interventions aimed at improving breastfeeding practices among postpartum mothers and their partners.

The study participants consisted of postpartum mothers who met the inclusion criteria: willingness to breastfeed, absence of medical contraindications to breastfeeding, and having husbands who agreed to participate in the couple-based educational sessions. Recruitment was carried out through midwives and health workers at local health facilities. Eligible pregnant women were approached during antenatal care visits, provided with detailed information about the study, and invited to participate. Those who agreed signed an informed consent form together with their husbands.

The independent variable in this study was the couple's class intervention, a structured educational program delivered to both mothers and their husbands. The intervention included comprehensive instruction on exclusive breastfeeding, common breastfeeding challenges, breast care techniques during the postpartum period, and practical strategies for providing emotional and physical support to breastfeeding mothers. The sessions were facilitated by trained health personnel and utilized audiovisual materials, demonstrations of breast care techniques, and interactive discussions. Husbands were encouraged to actively practice supportive behaviors, such as assisting with breastfeeding positioning, performing oxytocin massage, and creating a comfortable environment conducive to breastfeeding.

The dependent variables were breastmilk expression and breast engorgement. Breastmilk expression was measured through the frequency and volume of expressed breastmilk recorded by mothers during the observation period. Breast engorgement was assessed using a standardized clinical observation sheet that evaluated indicators such as breast tightness, pain, and difficulty in breastfeeding. Measurements were conducted both before and after the intervention in the intervention and control groups.

Data analysis involved comparative statistical tests to determine differences between the intervention and control groups. Normality tests were performed to identify the appropriate analytical procedures. Depending on data distribution, independent t-tests or Mann–Whitney tests were used to compare groups, while paired t-tests or Wilcoxon signed-rank tests were applied for pretest–posttest comparisons within each group.

RESULTS

The research was carried out in IMP (Independent Midwife Practice) the Magetan area, East Java. The research respondents were IMP patients from the Magetan Regency area. This IMP has similar initial characteristics in breastmilk expression. There have not yet been any classes that discuss lactation. The education was given during antenatal care as well as during postpartum visits. The respondents consisted of fifty people, consisting of 25 people in the intervention group and 25 people in the control group. Respondents participated in all of the research activities.

The characteristics of respondents

The respondents' characteristics included parity, age, and education level as shown in the Table 1. it can be seen that 32% of respondents were aged 26 to 30 years old, most respondents had a senior high school education (74%), and parities 1 and 2 had the highest parity, each consisting of 19 people (38%). The respondents of the two groups were homogenous (with a significance value of >0.05).

Table 1**.** The distribution of characteristics of respondents

No.	Respondents' characteristics	Intervention Group		Control Group		Total		Homogeneity
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	
1	Age (years)							0.185
	20-25 26-30 31-35 36-40 40-45	5 12 7 0 1	20 48 28 0 4	10 4 8 2 1	40 16 32 8 4	15 16 15 2 2	30 32 30 4 4	
3	Education							0.874
	Junior high school Senior high school University	1 19 5	4 76 20	2 18 5	8 72 20	3 37 10	6 74 20	
4	Parity							0.405
	1 2 3 4	8 11 5 1	32 44 20 4	2 18 5 0	8 72 20 0	19 19 10 2	38 38 20 4	

The level of respondents' breastmilk expression

The Table 2 illustrates the breastmilk expression of respondents. Breastmilk expression is the behavior of giving breastmilk without breastmilk substitution in the first month of the baby's birth. It can be seen that the breastmilk expression in the intervention group reached 92%, while in the control group, it was only 68%.

Table 2. The illustration of breastmilk expression in the control and intervention groups in IMP of Magetan Area in 2021

		Breastmilk Expression			
		Breastmilk	Percent	Breastmilk + breastmilk substitution	Percent
Groups	Intervention	23	92	2	8
	Control	17	68	8	32
Total		40	80	10	20

The events of breast engorgement among respondents

The events of breast engorgement can be seen in the Table 3. It can be seen that the events of breast engorgement happened to 8% of the intervention group and to 36% of the control group.

Table 3. Breast engorgement experienced by respondents in IMP of Magetan Area in 2021

		Breast engorgement				Total
		None	Percent	Breast engorgement	Percent	
Groups	Intervention	23	92	2	8	25
	Control	16	64	9	36	25
Total		39	78	11	22	50

The couples' class efficacy in increasing breastmilk expression

The effectiveness of the couples' classes in increasing breastmilk expression can be seen in the Table 4. It resulted in a significance value of 0.034. Based on these results, it can be concluded that there are differences in exclusive breastmilk expression between the control group and the intervention group (couple class).

Table 4. Breastmilk expression of the control and intervention groups in IMP of Magetan Area in 2021

		Breastmilk expression						p-value
		Breastmilk	Percent	Breastmilk + breastmilk substitution	Percent	Total	Percent	
Groups	Intervention	23	92	2	8	25	100	0.034*
	Control	17	68	8	32	25	100	
Total		40	80	10	20	50	100	

* Chi-square test

The couples' class efficacy in preventing breast engorgement

The Chi-square test was conducted to measure the effectiveness of the couples' classes in preventing breast engorgement. The results can be seen in the Table 5. It resulted in a significance value of 0.017 (significance value <0.05). Thus, it can be concluded the couples' classes were effective in preventing breast engorgement between the intervention and the control groups.

Table 5. Breast engorgement of the control and intervention groups in IMP of Magetan Area in 2021

		Breast engorgement				Total	p-value
		None	Percent	Breast engorgement	Percent		
Groups	Intervention	23	92	2	8	25	0.017
	Control	16	64	9	36	25	
Total		39	78	11	22	50	

DISCUSSION

The efficacy of the couple's class in increasing breastmilk expression

Based on the findings of this study, it can be concluded that the couple's classes were effective in increasing breastmilk expression. In this context, breastmilk expression referred to exclusive breastfeeding without any substitution during the first month of the infant's life. Several factors contributed to the success of breastfeeding, including the knowledge and behavioral readiness of both mothers and their husbands. Husbands with adequate knowledge tend to demonstrate more positive attitudes toward the breastfeeding process, thereby strengthening the level of support they provide. Husband support is widely recognized as one of the determinants of successful breastfeeding [13].

The couple's class employed a health promotion strategy delivered through a WhatsApp group as the core educational intervention. WhatsApp is a widely used communication platform in the community and has been increasingly adopted as a medium for health education [14]. The platform enables the dissemination of educational images and text, representing a common social-media-based approach to enhancing cognitive understanding [15]. Learning materials in the form of text and images facilitated comprehension among participants. According to Wisnu and Ngestiningrum, the use of WhatsApp groups significantly improves mothers' knowledge, attitudes, and behaviors related to breastmilk expression. Pregnant women and their husbands can easily understand the materials provided, which subsequently enhances their knowledge and attitudes and influences mothers' breastfeeding practices [16].

The educational program was further strengthened through active learning components. Active learning—defined as receiving, participating, and practicing—has a higher retention rate, as described by Dale's Cone of Experience. In this study, participants were encouraged to take an active role in the learning process [17]. Empirical evidence supports the positive impact of sending educational text and images through social media on improving knowledge. The discussion feature within WhatsApp also increases learner engagement and interest [14].

During the online couple's classes, participants were encouraged to discuss the materials to enhance their understanding. This improved knowledge subsequently influenced attitudes and behaviors, including husbands' support for pregnant women with anemia to consume iron tablets. Participants were able to share challenges and receive suggestions or alternative solutions from facilitators or other group members. Supportive interactions among members contributed to strengthening husbands' support.

Only a small number of respondents in this study failed to provide exclusive breastfeeding. These cases were primarily due to insufficient breastmilk production, which caused mothers to worry about their infants' nutritional adequacy and led to the introduction of formula milk. The failure to provide exclusive breastfeeding was influenced by several factors, including limited knowledge.

Although breastfeeding is often perceived as an activity solely between mothers and infants, it actually requires meaningful interaction between mothers and their husbands. Husband support plays a crucial role in shaping breastfeeding practices. To enhance husband involvement, the couple's class method modified conventional maternal classes by including husbands in every session. This approach was expected to influence beliefs, norms, and motivations related to exclusive breastfeeding, while also providing opportunities for shared experiences among participants.

Husband participation and support can improve mothers' perceptions, motivation, emotional stability, and attitudes. Husbands often view themselves as passive observers in the breastfeeding process; however, their support significantly influences maternal attitudes and behaviors. Greater husband support correlates with stronger maternal capability and willingness to breastfeed [18-21].

The couple's class positioned mothers and husbands as partners in achieving exclusive breastfeeding. Through information provided by midwives or counselors, both partners could reach shared decisions regarding breastfeeding. The interactions developed during the couple's class fostered positive reactions toward parental roles after childbirth. During breastfeeding, husbands can assist mothers by helping care for the baby, especially since breastfeeding requires substantial energy.

The couple's classes also fostered harmonious relationships between mothers and husbands, creating mutual affection and respect. Differences in knowledge regarding exclusive breastfeeding could be aligned through shared learning, leading to unified decisions. Facilitators encouraged open, respectful, and supportive discussions, enabling couples to address breastfeeding challenges without blame.

The effectiveness of the couple's class in preventing breast engorgement

This study also demonstrated that the couple's classes were effective in preventing breast engorgement, a common condition among postpartum mothers. The intervention group experienced fewer breast engorgement events compared to the control group. Through participation in the couple's classes, mothers and their husbands received information on breast engorgement prevention and breast care techniques. Online guidance provided mothers with practical knowledge that increased their confidence in managing breast health. Husbands were also taught massage techniques to support breastmilk expression.

The couple's classes enhanced husband participation by motivating and increasing mothers' confidence to breastfeed frequently, which is essential for preventing breast engorgement. Husbands play a crucial role as breastfeeding partners, providing emotional and practical support to ensure exclusive breastfeeding.

WhatsApp groups offered several advantages in delivering the couple's class intervention. The platform is cost-effective, accessible, and capable of reaching a wide audience. The use of illustrative health information supports comprehension among individuals with low literacy. Online classes were particularly beneficial during the COVID-19 pandemic, as they eliminated the need for physical gatherings and reduced the risk of virus transmission. However, online classes may not be suitable in areas with limited internet access.

Study limitations

This study has several limitations that should be acknowledged. First, the quasi-experimental design without randomization may introduce selection bias [22-24], as participants who agreed to join the couple's classes may have had higher initial motivation or interest in breastfeeding. Second, the reliance on self-reported data for breastmilk expression and breastfeeding practices may lead to reporting bias. Third, the use of WhatsApp as the primary intervention platform may limit participation among individuals with low digital literacy or unstable internet connectivity. Fourth, the study was conducted in a single district, which may restrict the generalizability of the findings to other regions with different socio-cultural contexts. Future research should consider randomized designs, objective measurements of breastfeeding outcomes, and broader geographic coverage to strengthen the evidence base.

CONCLUSION

The online couples' classes were effective in increasing breastmilk expression while preventing breast engorgement. Online couples' classes can be an alternative to promoting health during the Covid-19 pandemic. This activity was carried out online through WhatsApp groups to deliver materials and for undergoing discussions. Apart from that, there was direct offline guidance. This method was more effective and efficient, as it prevents the spread of Covid-19. Even so, online couples' classes are not suitable for places that face difficulties in accessing the internet.

Ethical consideration, competing interest and source of funding

- Ethical considerations were addressed through approval from an institutional health research ethics committee. All participants received complete information regarding the study's objectives, procedures, potential benefits, and their rights, including the right to withdraw at any time without penalty. Confidentiality was ensured by anonymizing participant data and excluding personal identifiers from all reports and publications.
-There is no conflict of interest related to this research and publication.
-Source of funding is authors.

REFERENCES

1. Kim SY, Yi DY. Components of human breast milk: from macronutrient to microbiome and microRNA. Clinical and Experimental Pediatrics. 2020 Mar 23;63(8):301.
2. Sánchez C, Franco L, Regal P, Lamas A, Cepeda A, Fente C. Breast milk: A source of functional compounds with potential application in nutrition and therapy. Nutrients. 2021 Mar 22;13(3):1026.
3. Garwolinska D, Namiesnik J, Kot-Wasik A, Hewelt-Belka W. Chemistry of human breast milk: A comprehensive review of the composition and role of milk metabolites in child development. Journal of Agricultural and Food Chemistry. 2018 Nov 14;66(45):11881-96.
4. Lyons KE, Ryan CA, Dempsey EM, Ross RP, Stanton C. Breast milk, a source of beneficial microbes and associated benefits for infant health. Nutrients. 2020 Apr 9;12(4):1039.
5. Duale A, Singh P, Al Khodor S. Breast milk: a meal worth having. Frontiers in Nutrition. 2022 Jan 26;8:800927.
6. Agrawal J, Chakole S, Sachdev C. The role of fathers in promoting exclusive breastfeeding. Cureus. 2022 Oct 16;14(10).
7. Dwinanda N, Syarif BH, Sjarif DR. Factors affecting exclusive breastfeeding in term infants. Paediatr Indones. 2018 Jan 1;58(1):25-35.
8. Davidson EL, Ollerton RL. Partner behaviours improving breastfeeding outcomes: An integrative review. Women and Birth. 2020 Feb 1;33(1):e15-23.

9. Budiati T, Setyowati S, Adjie S, Gunawijaya J. Fathers' role in sustainability of exclusive breastfeeding practice in post-cesarean-section mothers. Journal of Public Health Research. 2022 Feb;11(2):jphr-2021.
10. Kemenkes RI. Profil kesehatan Indonesia 2018. Jakarta: Kementerian Kesehatan Republik Indonesia; 2018.
11. Mgongo M, Hashim T, Uriyo J, Jeremia D, Stray-Pedersen B, Msuya S. Determinants of exclusive breastfeeding in Kilimanjaro region, Tanzania. Sci J Public Health. 2014;2(1):631–5.
12. Rahayu TP, Ngestiningrum AH. Factors that influence the provision of breastfeeding. Heal Notions. 2019;3(3):126–34.
13. Usnawati N. Efektifitas parent education dalam meningkatkan pengetahuan dan sikap pasangan primigravida tentang ASI eksklusif. J Penelit Kesehat Suara Forikes. 2017;8(3):121–5.
14. Ekadinata N, Widyandana D. Promosi kesehatan menggunakan gambar dan teks dalam aplikasi WhatsApp pada kader posbindu. Ber Kedokt Masy. 2017;33(11):547.
15. Kamel Boulos MN, Giustini DM, Wheeler S. Instagram and WhatsApp in health and healthcare: An overview. Futur Internet. 2016;8(3):1–14.
16. Wisnu NT, Ngestiningrum AH. Improving behavior of consuming Fe tablets for pregnant mothers of anemia in the Covid-19 pandemic. Int J Innov Res Rev. 2020;7:7025–8.
17. Ngestiningrum AH, Mutiara K, Wirakusumah FF. Korelasi pelatihan dengan kompetensi bidan dalam stimulasi, deteksi dan intervensi dini perkembangan anak dan kendala pelaksanaannya. Tunas-tunas Ris Kesehat. 2014;4(4):201–9.
18. Davidson EL, Ollerton RL. Partner behaviours improving breastfeeding outcomes: An integrative review. Women and Birth. 2020 Feb 1;33(1):e15-23.
19. Targhaq S, Hosseinzadeh M, Mirghafourvand M, Mousavi Z. Breastfeeding empowerment and its relationship with health literacy and spousal support among breastfeeding mothers in Tabriz, Iran: a cross-sectional study. BMJ open. 2025 Jan;15(1):e084337.
20. Gebremariam KT, Zelenko O, Mulugeta A, Gallegos D. A cross-sectional comparison of breastfeeding knowledge, attitudes, and perceived partners' support among expectant couples in Mekelle, Ethiopia. International Breastfeeding Journal. 2021 Jan 4;16(1):3.
21. Khoirunnisa E. Correlation between husband's support and primipara's willingness to provide exclusive breastfeeding. Journal of Health Sciences. 2023 Aug 30;16(03):318-24.
22. Nugroho HSW. Cangkir Santi 14: Hipotesis perbedaan [Internet]. Facebook. 2025 Sep 9 [cited 2025 Sep 13]. Available from: https://www.facebook.com/reel/1150696450360084.
23. Suharto A, Nugroho HSW, Santosa BJ. Metode penelitian dan statistika dasar. Bandung: Media Sains Indonesia; 2022.
24. Nugroho HSW. Biostatistik untuk mahasiswa D3 kebidanan. Ponorogo: FORIKES; 2013.