

## Telelactation Counseling Outcomes Among Midwifery Students: An International Collaborative Community Service Program to Improve Exclusive Breastfeeding Support

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### ABSTRACT

The Collaborative Community Service Excellence Program entitled “Telelactation Counseling Outcomes Among Midwifery Students: Collaborative Community Service with MAHSA University to Improve Exclusive Breastfeeding in Postpartum Mothers” was developed to address the increasing need for innovative breastfeeding support strategies and digital health integration in maternal healthcare services. This program aimed to enhance midwifery students’ competencies in telelactation counseling while strengthening international academic collaboration between Universitas Galuh, Indonesia, and MAHSA University, Malaysia. The program involved 40 participants consisting of 36 undergraduate midwifery students from Universitas Galuh and 4 students from the Advanced Diploma in Midwifery Program of MAHSA University. The implementation was conducted through three stages, namely the Pre-Counseling Phase, Synchronous Teleconference Counseling, and Post-Counseling Monitoring. Learning activities included academic sharing, mentoring, collaborative discussions, simulation-based practice, and evaluation sessions. The results demonstrated a significant improvement in participants’ knowledge regarding telelactation counseling, exclusive breastfeeding support, and digital health applications. The proportion of participants with good knowledge increased from 20.0% in the pre-test to 75.0% in the post-test, while the mean knowledge score improved from  $65.40 \pm 12.35$  to  $84.75 \pm 8.21$  ( $p < 0.001$ ). In addition, the program enhanced intercultural communication, expanded institutional networking, and promoted sustainable international collaboration. In conclusion, the program effectively improved participants’ competencies in telelactation counseling and contributed to the dissemination of innovative telehealth approaches to support exclusive breastfeeding and maternal-child healthcare services.

**Keywords:** telelactation; community service; lactation counseling; exclusive breastfeeding; international collaboration

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### INTRODUCTION

Exclusive breastfeeding remains a major global public health priority because of its substantial benefits for infant growth, immunity, cognitive development, and maternal health(Couto et al., 2020; WHO, 2023). The World Health Organization (WHO) recommends exclusive breastfeeding during the first six months of life as one of the most effective interventions for improving maternal and child health outcomes (WHO, 2023). Despite these recommendations, the global prevalence of exclusive breastfeeding remains below the expected target, particularly in several Southeast Asian countries, including Indonesia and Malaysia (Machmud & Taqiyah, 2025; WHO, 2018). Various barriers continue to affect breastfeeding practices, such as limited access to breastfeeding support services, inadequate counseling, and insufficient continuity of postpartum care (Beyene et al., 2025; Purnamasari et al., 2025a).

One of the most important factors influencing successful breastfeeding is the availability of effective lactation counselling for pregnant women. Lactation counseling provides mothers with the information, motivation, and practical skills needed to overcome breastfeeding challenges during the postpartum period (Apriyani, 2026; Netri et al., 2025). However, access to quality counseling services remains limited, especially in communities where healthcare resources and professional support are constrained(Iamchareon & Maneesriwongul, 2025; Purnamasari et al., 2025a). Consequently, healthcare providers, including midwives, are expected to possess adequate competenc in providing evidence-based breastfeeding support(Norman et al., 2022; Zahra et al., 2015).

Previous studies have demonstrated the effectiveness of lactation counseling in improving breastfeeding outcome. Research conducted by the proposing team showed that lactation counseling significantly improved mothers' breastfeeding ability using the LATCH method approach (Purnamasari et al., 2025b). Other studies have also highlighted the positive impact of digital health interventions, including telehealth and tele-counseling models, on improving access to maternal healthcare services and enhancing continuity of care (Dewanti et al., 2024; Kohan et al., 2019; Purkiewicz et al., 2025). These findings indicate that integrating breastfeeding counseling with digital health technology may provide a promising strategy to address existing service gaps (Purkiewicz et al., 2025).

Although digital health technologies have rapidly expanded worldwide, the implementation of telelactation counseling in midwifery education remains limited (Dewanti et al., 2024). Most educational programs still emphasize conventional face-to-face counseling methods, while structured training in telehealth-based breastfeeding support is rarely incorporated into student learning experiences (Norman et al., 2022). This creates a gap between the theoretical knowledge and practical competencies required in contemporary healthcare settings.

The target partners of this program were midwifery students from MAHSA University, Malaysia. As future healthcare professionals, these students have a strategic role in promoting maternal and child health, particularly in supporting exclusive breastfeeding practices (Norman et al., 2022). A preliminary needs assessment through discussions with academic representatives and students indicated that although adequate learning facilities and digital platforms were available, structured telelactation counseling had not yet been systematically integrated into clinical learning activities. Approximately 70% of the students had never participated in telehealth-based lactation counseling, 65% reported low confidence in providing breastfeeding counseling through digital platforms, and more than 75% expressed a strong need for structured telelactation training. Furthermore, opportunities for international collaborative learning and practical exposure to technology-assisted maternal healthcare services are limited (Kohan et al., 2019; Purkiewicz et al., 2025).

To address these challenges, an international collaborative community service program was developed between Universitas Galuh, Indonesia, and MAHSA University, Malaysia. The program integrates evidence-based lactation counseling, digital health innovation, experiential learning, and international academic collaboration through a telelactation counseling model. Unlike previous approaches that primarily focused on conventional counseling methods, this programme introduces telelactation as an innovative educational and community service strategy that simultaneously strengthens student competencies, expands cross-cultural learning experiences, and promotes digital transformation in maternal healthcare services (Dewanti et al., 2024).

Therefore, this community service program aimed to improve the competencies of midwifery students in providing telelactation counseling, enhance support for exclusive breastfeeding practices among postpartum mothers, strengthen international collaboration between Universitas Galuh and MAHSA University, and promote the integration of digital health innovation in midwifery education and community service activities.

## METHOD

This community service program employed a participatory training and mentoring approach through an international collaboration between Universitas Galuh, Indonesia, and MAHSA University, Malaysia. The target participants were 40 students consisting of 36 undergraduate midwifery students from Universitas Galuh and four students from the Advanced Diploma in Midwifery Program of MAHSA University. The program was conducted from March to June 2026 and focused on strengthening participants' competencies in telelactation counseling and digital health applications in maternal healthcare services.

The implementation consisted of three sequential stages. The first stage was the Pre-Counseling Phase, conducted through an online Zoom Meeting on March 3, 2026. This stage included program socialization, partner coordination, needs assessment, introduction to exclusive breastfeeding concepts, telelactation counseling principles, communication ethics, and digital platform utilization. The second stage was Synchronous Teleconference Counseling, conducted on May 12, 2026, at the

Department of Nursing, Advanced Diploma in Midwifery, MAHSA University, Malaysia. The activities included academic sharing sessions, telelactation counseling training, case-based discussions, simulation-based learning, role-playing, collaborative group discussions, and teleconsultation practice. The third stage was Post-Counseling Monitoring, conducted via Zoom Meeting on June 3, 2026. This stage focused on monitoring, evaluation, participant reflection, identification of implementation challenges, and formulating recommendations for future collaboration.

The methods applied included community education, training, mentoring, simulation-based learning, and technology application through telelactation counseling. The educational materials covered exclusive breastfeeding, evidence-based lactation counseling, digital health literacy, telehealth applications, communication strategies, and telelactation implementation procedures. Participants actively engaged in counseling simulations and collaborative discussions under the supervision of lecturers from Universitas Galuh and MAHSA University.

Program effectiveness was evaluated using a pre- and post-test design. Knowledge of telelactation counseling, exclusive breastfeeding support, and digital health applications was assessed before and after the intervention. Data were descriptively analyzed using frequencies, percentages, means, and standard deviations. Changes in the knowledge scores were evaluated to determine the effectiveness of the educational intervention.

## RESULTS AND DISCUSSION

The Telelactation Counseling Program was successfully implemented through an international collaboration between Universitas Galuh, Indonesia and MAHSA University, Malaysia. The program involved 40 participants consisting of 36 undergraduate midwifery students from Universitas Galuh and four students from the Advanced Diploma in Midwifery Program of MAHSA University. The implementation was conducted through three main stages the Pre-Counseling Phase, Synchronous Teleconference Counseling, and Post-Counseling Monitoring. Table 1 presents the participants' demographic characteristics.

**Table 1. Characteristics of Participants (n = 40)**

Characteristic	Category	Frequency (n)	Percentage (%)
Institution	Universitas Galuh	36	90.0
	MAHSA University	4	10.0
Program of Study	Midwifery	40	100.0
Gender	Female	40	100.0
<b>Total</b>		<b>40</b>	<b>100.0</b>

Based on Table 1, the majority of participants were students from Universitas Galuh (90.0%), while 10.0% were from MAHSA University. All participants were

female students enrolled in health-related programs, predominantly midwifery programs. These findings indicate that the program successfully reached its primary target group and facilitated international participation in academic conferences.

The first stage of the program was conducted through an online Zoom Meeting on March 3, 2026. During this phase, participants received orientation regarding the objectives of the program, exclusive breastfeeding promotion, telelactation concepts, communication ethics, and digital platform utilization. This activity established a common understanding among the participants and strengthened their readiness for subsequent learning activities.



**Figure 1. Documentation of Pre-Counseling Phase via Zoom Meeting, 3 March 2026**

The second stage, Synchronous Teleconference Counseling, was conducted at MAHSA University on May 12, 2026. This phase represented the core implementation of the program and consisted of academic sharing sessions, telelactation counseling training, case-based discussions, simulation activities and collaborative learning experiences. Participants received comprehensive materials related to evidence-based lactation counseling, exclusive breastfeeding support, telehealth applications, and communication strategies for remote counseling services.



**Figure 2. Academic Sharing Session at MAHSA University, 12 May 2026**

One of the most valuable activities was the telelactation counseling simulation. Students worked collaboratively in mixed groups involving participants from both

institutions to analyze breastfeeding cases, identify maternal problems, formulate counseling plans, and conduct simulated teleconsultation. Through this process, students developed communication skills, critical thinking abilities, clinical reasoning competencies, and confidence in delivering digital health services.



**Figure 3. Telelactation Counseling Simulation Activities, 12 May 2026**

To evaluate program effectiveness, participants completed pre-test and post-test assessments regarding telelactation counseling, exclusive breastfeeding support, and digital health applications. The results demonstrated substantial improvements in participants knowledge following the intervention.

**Table 2. Comparison of Participants' Knowledge Before and After Program Implementation (n = 40)**

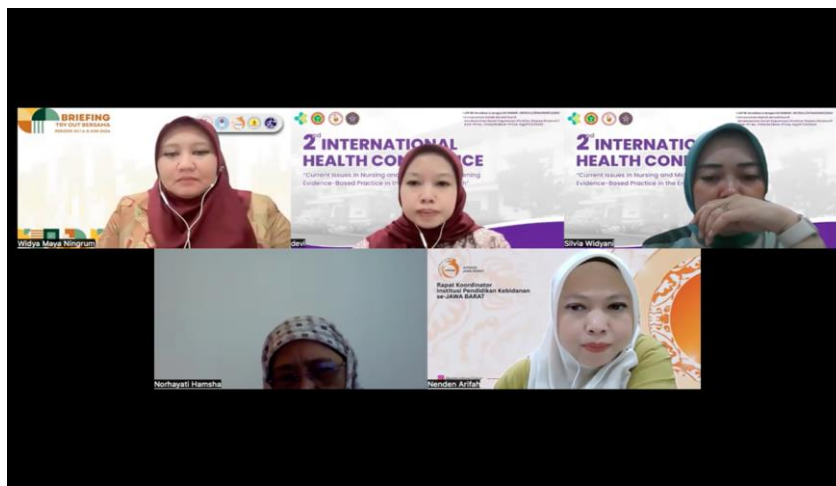
<b>Knowledge Category</b>	<b>Pre-Test n (%)</b>	<b>(Mean ± SD)</b>	<b>Post-Test n (%)</b>	<b>(Mean ± SD)</b>
Good	8 (20.0)	<b>65.40 ± 12.35</b>	30 (75.0)	<b>84.75 ± 8.21</b>
Moderate	20 (50.0)		9 (22.5)	
Poor	12 (30.0)		1 (2.5)	

The proportion of participants with good knowledge increased markedly from 20.0% before the intervention to 75.0% after the program. Conversely, the proportion of participants with poor knowledge decreased from 30.0% to 2.5%. Furthermore, the mean knowledge score increased from  $65.40 \pm 12.35$  to  $84.75 \pm 8.21$ , indicating a significant improvement. These findings demonstrate that the educational intervention effectively enhanced the participants' understanding of telelactation counseling and digital health applications.

The observed improvement may be attributed to the integration of several learning strategies, including academic sharing, mentoring, simulation-based learning, and collaborative international discussions. Previous studies have reported that lactation counseling significantly improves breastfeeding-related competence and maternal support outcomes. The findings of this program further extend existing

evidence by demonstrating that telelactation counseling can serve as an effective educational innovation for strengthening students' competencies in digital health care delivery.

The final stage of the program was Post-Counseling Monitoring, which was conducted through an online meeting on June 3, 2026. Participants reflected on their experiences, discussed the challenges encountered during the telelactation simulations, and formulated recommendations for future program development. Feedback from participants indicated increased confidence in providing breastfeeding counseling, enhanced digital health literacy, and greater awareness of the importance of exclusive breastfeeding support.



**Figure 4. Post-Counseling Monitoring Session with Ms. Nurhayati Hamsha, 3 June 2026**

Beyond knowledge improvement, the program generated broader impacts, including strengthened international networking, enhanced intercultural communication, and opportunities for future collaboration in education, research and community service. Participants gained valuable exposure to international maternal healthcare practices and developed the competencies required for modern healthcare systems. These outcomes support the growing body of evidence emphasizing the importance of integrating digital health innovations and international collaboration into healthcare education.

## CONCLUSION

The Telelactation Counseling Outcomes Program was successfully implemented through an international collaboration between Galuh University and MAHSA University. The program effectively improved the participants' knowledge and competencies in telelactation counseling, exclusive breastfeeding support, and digital health applications. Future programs should expand participant involvement, strengthen interdisciplinary collaboration, and further develop telehealth-based

educational models to ensure sustainable impact on maternal and child health services.

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