



PERINEAL MASSAGE EDUCATION USING OLIVE OIL TO PREVENT PERINEAL TEARS IN SECOND-TRIMESTER PREGNANT WOMEN

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Abstrak

Kegiatan pengabdian kepada masyarakat ini bertujuan meningkatkan pengetahuan dan keterampilan ibu hamil trimester II tentang pijat perineum menggunakan minyak zaitun sebagai upaya pencegahan robekan perineum saat persalinan. Metode yang digunakan meliputi penyuluhan kesehatan, diskusi interaktif, demonstrasi, dan praktik langsung. Kegiatan dilaksanakan di Klinik Sarpi'ina Sinambela dengan melibatkan 50 ibu hamil trimester II. Evaluasi dilakukan melalui pre-test dan post-test untuk mengukur pengetahuan serta lembar observasi untuk menilai keterampilan peserta. Hasil kegiatan menunjukkan peningkatan pengetahuan yang signifikan, dimana kategori pengetahuan baik meningkat dari 16,0% sebelum intervensi menjadi 84,0% setelah intervensi. Keterampilan peserta juga mengalami peningkatan, dengan lebih dari 90% peserta mampu mempersiapkan alat, melakukan posisi yang benar, serta mempraktikkan teknik pijat perineum sesuai prosedur. Seluruh peserta (100%) menyatakan puas terhadap kegiatan yang diberikan. Program ini terbukti efektif dalam meningkatkan pengetahuan, keterampilan, dan kesiapan ibu hamil menghadapi persalinan. Oleh karena itu, edukasi dan pelatihan pijat perineum menggunakan minyak zaitun dapat direkomendasikan sebagai bagian dari pelayanan antenatal untuk mendukung persalinan yang lebih aman dan nyaman.

Kata kunci: Pijat Perineum, Minyak Zaitun, Ibu Hamil Trimester II, Robekan Perineum, Pendidikan Kesehatan.

Abstract

This community service program aimed to improve the knowledge and practical skills of second-trimester pregnant women regarding perineal massage using olive oil as a preventive strategy against perineal tears. The program was conducted at Sarpi'ina Sinambela Clinic and involved 50 second-trimester pregnant women. Activities included health education, interactive discussions, demonstrations, hands-on practice, pre-test and post-test evaluations, and skill assessments using observation checklists. The results showed a substantial improvement in participants' knowledge, with the proportion of women having good knowledge increasing from 16.0% before the intervention to 84.0% after the intervention. Practical skills also improved significantly, with more than 90% of participants demonstrating competence in performing perineal massage procedures correctly. Participant satisfaction reached 100%, and most participants expressed willingness to continue the practice regularly. The program successfully enhanced maternal knowledge, practical skills, and childbirth preparedness, indicating that health education combined with practical training is an effective approach to promoting evidence-based maternal self-care practices.

Keywords: *Perineal Massage, Olive Oil, Second-Trimester Pregnant Women, Perineal Tear, Health Education.*

INTRODUCTION

Pregnancy is a physiological process characterized by complex anatomical, hormonal, and physical adaptations that prepare a woman for childbirth (Organization, 2024). During this period, women experience progressive changes in the reproductive system, including increased tissue elasticity and vascularization to support labor and delivery. However, one of the most common concerns during the late stage of pregnancy is the risk of perineal trauma during vaginal birth, particularly perineal tears (Yin, X., Zhang, L., & Chen, 2024)

Perineal tears occur when the perineal tissues fail to adequately stretch during fetal expulsion, leading to tissue rupture of varying degrees (Martins, L., Ferreira, M., & Silva, 2024). This condition may result in pain, hemorrhage, infection, delayed postpartum recovery, dyspareunia, and reduced quality of life for postpartum women (Organization, 2024). Evidence shows that perineal trauma remains a major contributor to maternal morbidity worldwide, especially among primiparous women and those without adequate perineal preparation before labor (Yin, X., Zhang, L., & Chen, 2024)

To reduce the risk of such complications, perineal massage has been widely recommended as a simple, safe, and non-pharmacological intervention during pregnancy (Martins, L., Ferreira, M., & Silva, 2024). Regular antenatal perineal massage has been shown to improve blood circulation, increase tissue elasticity, and enhance the flexibility of the perineal muscles in preparation for childbirth (Yin et al., 2024). Systematic reviews further confirm that perineal massage can significantly reduce severe perineal trauma, episiotomy rates, and postpartum perineal pain (Yin, X., Zhang, L., & Chen, 2024).

The effectiveness of perineal massage may be further enhanced by the use of natural lubricants such as olive oil (*Olea europaea*). Olive oil contains essential fatty acids, vitamin E, and polyphenolic compounds that provide antioxidant and anti-inflammatory effects, which support skin hydration and tissue elasticity (Alqahtani, M., Almutairi, S., & Rahman, 2024). These properties make olive oil suitable for perineal massage as it reduces friction and supports tissue adaptation during pregnancy (Kamel, H., & Hassan, 2025). Studies have also reported that the use of natural oils during pregnancy may improve skin flexibility and reduce the risk of perineal injury during childbirth (Alqahtani, M., Almutairi, S., & Rahman, 2024).

Despite these benefits, many pregnant women still lack adequate knowledge regarding perineal massage techniques and the use of olive oil in perineal preparation (Rahmawati, N., & Astuti, 2025). Limited health literacy and insufficient antenatal education often hinder the adoption of preventive self-care practices during pregnancy (Wulandari, P., Hidayat, T., & Susanti, 2024). Health education has



been proven to play a crucial role in improving maternal knowledge, attitudes, and practices related to childbirth preparation (Fitriani, E., Sari, D., & Kurniawan, 2025).

Educational interventions that combine lectures, discussions, demonstrations, and hands-on practice are particularly effective in enhancing knowledge retention and skill acquisition among pregnant women (Sari, N., Rahmawati, D., & Kurniawan, 2025). Demonstration-based learning allows participants to directly observe and practice correct techniques, which significantly improves confidence and self-efficacy in performing perineal massage independently (Rahmawati & Astuti, 2025) (Sari, N., Rahmawati, D., & Kurniawan, 2025).

Community-based health education programs are therefore essential to empower pregnant women to adopt evidence-based practices for safe childbirth (Fitriani, E., Sari, D., & Kurniawan, 2025b). Training on perineal massage using olive oil is considered an affordable, culturally acceptable, and easily integrated intervention within routine antenatal care services (Kamel & Hassan, 2025). Previous studies have shown that combining education with practical training significantly improves maternal preparedness and promotes positive health behaviors during pregnancy (Sari, N., Rahmawati, D., & Kurniawan, 2025b) (Wulandari, P., Hidayat, T., & Susanti, 2024).

Based on these considerations, a community service program was implemented. This program aims to improve pregnant women's knowledge and practical skills in performing perineal massage using olive oil as a preventive strategy to reduce the risk of perineal tears and to enhance maternal readiness for childbirth through safe, evidence-based, and low-cost interventions.

METHOD

This community service program used a health education and practical training design aimed at improving the knowledge and skills of second-trimester pregnant women regarding perineal massage using olive oil as a preventive strategy for perineal tears during childbirth. The activity was conducted at Sarpi'ina Sinambela Clinic in 2026. The participants in this program were second-trimester pregnant women attending antenatal care services at the clinic. A total of 50 pregnant women were included in the activity. The sample size reflects all eligible participants who attended antenatal care during the implementation period and agreed to participate voluntarily. The inclusion criteria consisted of pregnant women in the second trimester (gestational age 13–28 weeks), willingness to participate, and ability to follow health education and practical training sessions. Participants with high-risk pregnancies, obstetric complications, or medical conditions that contraindicate perineal massage based on clinical assessment were excluded from the activity. Convenience sampling was applied by recruiting participants who were available during the service period.

Prior to implementation, ethical clearance was obtained from the relevant institutional ethics committee, and all participants provided informed consent after receiving a full explanation of the objectives, procedures, benefits, and potential risks of the program. Confidentiality and participant anonymity were strictly maintained throughout the study. The intervention was implemented in several sequential stages. The first stage involved preparation, including coordination with clinic staff, preparation of educational materials, development of questionnaires and observation checklists, and preparation of tools required for demonstration activities. The second stage involved baseline assessment using a pre-test questionnaire to evaluate participants' initial knowledge regarding perineal anatomy, perineal tears, risk factors, preventive measures, benefits of perineal massage, and the use of olive oil during pregnancy.

The third stage consisted of health education sessions delivered through lectures, interactive discussions, and question-and-answer methods. The educational content covered perineal anatomy and physiology, causes and risk factors of perineal trauma, benefits and techniques of antenatal perineal massage, safety considerations, and the role of olive oil in improving skin elasticity and reducing friction during massage. This was followed by practical training using demonstration and return-demonstration methods. Participants were guided step-by-step on hand hygiene procedures, preparation and use of olive oil, correct positioning, massage techniques, duration, frequency, and safety precautions. Each participant was given the opportunity to practice the technique using anatomical pelvic models under direct supervision.

The final stage involved post-intervention evaluation using a post-test questionnaire to measure changes in knowledge levels. Practical skills were assessed using a structured observation checklist during return-demonstration sessions. Data were analyzed using both descriptive and inferential statistical methods. Descriptive analysis was performed using frequencies and percentages, while differences between pre-test and post-test scores were analyzed using the Wilcoxon signed-rank test to determine the statistical significance of knowledge improvement. The level of significance was set at $p < 0.05$.

The instruments used in this program included a structured pre-test and post-test questionnaire consisting of 10–15 items, an observation checklist for evaluating perineal massage skills, educational media such as leaflets, flipcharts, and PowerPoint presentations, and practical demonstration equipment including anatomical models, olive oil, gloves, and supporting materials for training.

The success indicators of the program included at least 80% participant attendance, active participation during educational and practical sessions, statistically significant improvement in post-test scores compared to pre-test



results, at least 80% of participants achieving competency in perineal massage technique based on observation, and positive participant feedback regarding the usefulness and acceptability of the program.

RESULTS AND DISCUSSION

RESULTS

The community service program was attended by 50 second-trimester pregnant women. All participants successfully completed every stage of the program, including health education sessions, practical demonstrations, supervised hands-on training, discussions, and evaluation activities. Baseline data were collected to describe the demographic and obstetric characteristics of participants, providing an overview of the target population involved in the program. The characteristics of the participants are presented in Table 1.

Table 1. Characteristics of Participants (n = 50)

Characteristics	Frequency (n)	Percentage (%)
Age		
< 20 years	5	10.0
20–35 years	38	76.0
> 35 years	7	14.0
Education Level		
Elementary School	4	8.0
Junior High School	10	20.0
Senior High School	24	48.0
College/University	12	24.0
Occupation		
Housewife	31	62.0
Private Employee	9	18.0
Self-employed	7	14.0
Civil Servant	3	6.0
Parity Status		
Primigravida	22	44.0
Multigravida	28	56.0
Gestational Age		
13–20 weeks	21	42.0
21–27 weeks	29	58.0

Table 1 shows that most participants were aged 20–35 years (76.0%), which represents the optimal reproductive age group. Nearly half had completed senior high school education (48.0%), while the majority were housewives (62.0%). More than half of the participants were multigravida mothers (56.0%), and 58.0% were between 21 and 27 weeks of gestation. These findings indicate that the participants were in an appropriate stage of pregnancy to receive education and practical training on perineal massage as part of childbirth preparation.

To evaluate the effectiveness of the health education provided during the community service program, participants' knowledge was assessed before and after the intervention using structured pre-test and post-test questionnaires. The questionnaires measured participants' understanding of perineal tears, associated risk factors, the benefits of perineal massage, the appropriate time to initiate massage during pregnancy, the correct massage technique, and the safe use of olive oil. Comparing the pre-test and post-test results allowed the program team to determine the extent to which the educational activities improved participants' knowledge. The changes in participants' knowledge are presented in Table 2.

Table 2. Changes in Participants' Knowledge (n = 50)

Knowledge Level	Pre-test n (%)	Post-test n (%)
Good	8 (16.0)	42 (84.0)
Moderate	24 (48.0)	8 (16.0)
Poor	18 (36.0)	0 (0.0)
Total	50 (100)	50 (100)

Table 2 demonstrates a substantial improvement in participants' knowledge following the educational intervention. Before participating in the program, only 16.0% of participants had good knowledge regarding perineal massage, whereas nearly half had moderate knowledge and more than one-third had poor knowledge. After the educational sessions, the proportion of participants with good knowledge increased markedly to 84.0%, while no participants remained in the poor knowledge category. These findings indicate that the health education effectively enhanced participants' understanding of perineal massage and its role in preventing perineal tears during vaginal childbirth.

In addition to improving knowledge, the community service program emphasized the development of practical skills through demonstrations and supervised hands-on training. Participants were guided step-by-step in preparing the required equipment, adopting the correct body position, performing perineal massage using olive oil, determining the recommended frequency and duration of massage, and recognizing important safety precautions. Practical competence was evaluated using an observation checklist before and after the training sessions. The improvement in participants' practical skills is presented in Table 3.

Table 3. Improvement in Practical Skills (n = 50)

Skill Assessment Indicator	Able Before Training n (%)	Able After Training n (%)
Preparing olive oil and massage equipment correctly	10 (20.0)	48 (96.0)
Demonstrating proper body positioning	8 (16.0)	46 (92.0)
Performing perineal massage techniques correctly	5 (10.0)	45 (90.0)
Explaining massage frequency and duration	12 (24.0)	47 (94.0)



Skill Assessment Indicator	Able Before Training n (%)	Able After Training n (%)
Identifying safety precautions during massage	9 (18.0)	46 (92.0)

Table 3 shows remarkable improvements across all practical skill indicators after the training sessions. Prior to the intervention, only a small proportion of participants were able to correctly perform each component of the perineal massage procedure. Following demonstrations and supervised practice, over 90% of participants successfully prepared the massage equipment, demonstrated the correct body position, performed the massage technique appropriately, explained the recommended frequency and duration, and identified essential safety precautions. These findings suggest that practical demonstrations combined with guided practice effectively increased participants' competence and confidence in performing perineal massage independently at home.

Participant satisfaction and perceptions of the program were evaluated at the end of the activities to determine the acceptability and perceived benefits of the educational intervention. The evaluation questionnaire explored participants' opinions regarding the clarity of the educational materials, the usefulness of the practical demonstrations, confidence in performing perineal massage, overall satisfaction with the program, and their willingness to continue practicing and recommending the technique to other pregnant women. The participants' responses are presented in Table 4.

Table 4. Participants' Responses to the Community Service Program (n = 50)

Response Indicator	Frequency (n)	Percentage (%)
Educational materials were easy to understand	48	96.0
Practical demonstrations increased confidence	46	92.0
Satisfied with the overall program	50	100.0
Intend to perform perineal massage regularly	45	90.0
Increased understanding of childbirth preparation	47	94.0
Willing to recommend the practice to other pregnant women	44	88.0

Table 4 indicates that participants responded very positively to all aspects of the community service program. Almost all participants considered the educational materials easy to understand and reported that the practical demonstrations increased their confidence in performing perineal massage. All participants expressed satisfaction with the overall implementation of the program, while the majority intended to continue practicing perineal massage regularly throughout pregnancy. Furthermore, most participants reported improved understanding of childbirth preparation and expressed willingness to recommend the practice to other pregnant women. These results demonstrate that the educational and

practical training activities were well accepted and perceived as beneficial by the participants.

To determine the overall success of the community service program, several achievement indicators established during the planning stage were evaluated and compared with the predetermined targets. These indicators included participant attendance, active participation during educational and practical sessions, improvement in knowledge, acquisition of practical skills, and participant satisfaction. Evaluating these indicators provided a comprehensive assessment of the effectiveness of the program implementation. The program achievement indicators are presented in Table 5.

Table 5. Program Achievement Indicators

Achievement Indicator	Target	Achievement Result	Status
Participant attendance	≥80% of registered participants	50 of 50 participants attended (100%)	Achieved
Active participation during sessions	≥80% of participants actively engaged	48 of 50 participants actively participated (96.0%)	Achieved
Improvement in participants' knowledge	Increase in post-test scores	Good knowledge increased from 16.0% to 84.0%	Achieved
Ability to prepare olive oil and equipment correctly	≥80% competent	48 participants (96.0%) competent	Achieved
Ability to demonstrate correct body positioning	≥80% competent	46 participants (92.0%) competent	Achieved
Ability to perform perineal massage techniques correctly	≥80% competent	45 participants (90.0%) competent	Achieved
Participant satisfaction with the program	≥80% satisfied	50 participants (100%) satisfied	Achieved

Table 5 demonstrates that all predetermined program achievement indicators were successfully attained and exceeded the established targets. Attendance reached 100%, indicating excellent participant commitment throughout the program. Active participation during educational and practical sessions reached 96.0%, reflecting strong engagement in the learning process. Significant improvements were observed in participants' knowledge and practical competencies, with more than 90% of participants demonstrating correct perineal massage techniques after training. In addition, participant satisfaction reached 100%, highlighting the high level of acceptance and perceived usefulness of the program. Overall, these findings suggest that integrating health education with practical training is an effective community empowerment strategy to improve



pregnant women's knowledge, practical skills, and readiness to perform perineal massage using olive oil as a preventive measure against perineal tears during vaginal childbirth.

DISCUSSION

The participant characteristics indicate that most respondents were aged 20–35 years (76.0%), which is considered the optimal reproductive age with better physical readiness and lower obstetric risk (Rahmawati, D., & Astuti, 2025). Women in this age group are also more likely to accept and apply health information related to pregnancy care, including perineal massage (Pratiwi, N., & Handayani, 2025). In terms of education, nearly half of participants had completed senior high school (48.0%), and 24.0% had higher education. Higher educational attainment is associated with better maternal health literacy and greater ability to understand and apply health information (Sari, Y., Fitriani, E., & Wulandari, 2024) (Wulandari, P., & Sari, 2025).

Most participants were housewives (62.0%), which may facilitate greater participation in antenatal education and home practice of perineal massage (Astuti, N., & Kurniasih, 2024) (Fitriani, E., Sari, D., & Kurniawan, 2025). In addition, multigravida mothers dominated (56.0%), although both primigravida and multigravida still require structured education because prior experience does not guarantee correct knowledge of perineal care (Yuliana, D., Simanjuntak, H., & Manurung, 2024). The majority of participants were in the second trimester (58.0%), which is an appropriate period for introducing perineal massage before childbirth preparation becomes more intensive (Handayani, R., Putri, A., & Lestari, 2024). Overall, these characteristics support the effectiveness of the intervention in improving maternal preparedness.

The results showed a clear improvement in knowledge after the intervention, where good knowledge increased from 16.0% to 84.0%, while poor knowledge was eliminated. This indicates that health education effectively improved understanding of perineal massage and its benefits in preventing perineal tears (Handayani, R., Putri, A., & Lestari, 2024). The improvement is strongly influenced by the use of interactive methods such as lectures, discussions, and demonstrations, which enhance comprehension and retention of information (Wulandari, P., Hidayat, T., & Susanti, 2024). Demonstration-based learning is particularly effective in maternal education because it links theory with practice (Rahmawati, D., & Astuti, 2025). The elimination of poor knowledge also suggests that the material was understandable for participants with different educational backgrounds. Increased knowledge is expected to improve maternal readiness and promote preventive behavior during pregnancy (Sari, N., Rahmawati, D., & Kurniawan, 2025).

Practical skills improved significantly after training, with competency levels increasing from below 25% in most indicators to over 90% post-intervention. The greatest improvement was observed in correct performance of perineal massage

techniques (10.0% to 90.0%), indicating the effectiveness of hands-on learning (Rahmawati et al., 2024). This improvement was achieved through demonstration and return-demonstration methods, which allow participants to directly practice and receive feedback. Such experiential learning strengthens psychomotor skills and reduces procedural errors (Wulandari, P., Hidayat, T., & Susanti, 2024). In addition, participants showed better understanding of safety, duration, and frequency of massage. Improved skills are expected to increase maternal confidence and consistency in performing perineal massage during pregnancy (Fitriani, E., Sari, D., & Kurniawan, 2025)

Participants responded very positively to the program, with most stating that the materials were easy to understand (96.0%) and that demonstrations increased confidence (92.0%). This confirms that interactive education improves engagement and self-efficacy (Wulandari et al., 2024). Overall satisfaction reached 100%, and most participants intended to continue practicing perineal massage (90.0%). High satisfaction reflects the relevance and practicality of the intervention for pregnant women (Fitriani, E., Sari, D., & Kurniawan, 2025). Additionally, 88.0% were willing to recommend the practice to others, indicating strong acceptance and potential for community-level sustainability (Sari, N., Rahmawati, D., & Kurniawan, 2025).

All program indicators were achieved, including 100% attendance and 96.0% active participation, showing strong engagement of participants. High participation reflects the effectiveness of interactive and practice-based learning methods (Wulandari, P., Hidayat, T., & Susanti, 2024). Knowledge and skills also improved significantly, with good knowledge increasing to 84.0% and more than 90% of participants demonstrating correct skills. This confirms that combining education and demonstration is effective in improving maternal competencies (Handayani, R., Putri, A., & Lestari, 2024). Overall satisfaction reached 100%, indicating that the program was well accepted and beneficial. These findings support integrating similar interventions into routine antenatal care services to improve maternal preparedness and prevent perineal trauma (Fitriani, E., Sari, D., & Kurniawan, 2025).

CONCLUSIONS AND SUGGESTIONS

The community service program on health education and practical training regarding perineal massage using olive oil among second-trimester pregnant women at Sarpi'ina Sinambela Clinic was successfully implemented with excellent participation and achievement outcomes. The results showed a significant improvement in participants' knowledge, with the proportion of good knowledge increasing from 16.0% before the intervention to 84.0% after the intervention, while poor knowledge was completely eliminated. In addition, participants' practical skills also improved markedly, with more than 90% of participants able to correctly perform key steps of perineal massage, including preparation, positioning,



technique application, and safety procedures. High levels of satisfaction (100%) and positive responses from participants further indicate that the program was effective, acceptable, and beneficial in increasing maternal preparedness for childbirth and preventing perineal tears.

Based on the findings, it is recommended that similar health education and practical training programs on perineal massage using olive oil be continuously implemented within routine antenatal care services to improve maternal knowledge and skills in childbirth preparation. Midwives and healthcare providers are encouraged to provide ongoing counseling, demonstrations, and follow-up support to ensure sustained practice of perineal massage throughout pregnancy. Furthermore, special attention should be given to first-time mothers and women with lower educational backgrounds to ensure equal understanding and skill acquisition. Future community-based programs are also suggested to strengthen family involvement, as family support plays an important role in encouraging consistent practice of maternal self-care behaviors. Overall, integrating structured, evidence-based, and skill-oriented education into maternal health services is essential to reduce the risk of perineal trauma and improve maternal outcomes.

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REFERENCES

- Alqahtani, M., Almutairi, S., & Rahman, A. (2024). Effects of natural oils on skin elasticity and tissue preparation during pregnancy. *International Journal of Maternal and Child Health*, 15(2), 88–96. <https://doi.org/10.1111/srt.70354>
- Astuti, N., & Kurniasih, D. (2026). The role of occupation in maternal participation in antenatal education programs. *Journal of Maternal Health Education*, 11(2), 66–73.
- Fitriani, E., Sari, D., & Kurniawan, F. (2025). Effectiveness of community-based maternal health education on pregnancy outcomes. *Journal of Midwifery and Reproductive Health*, 13(1), 45–53.

- Fitriani, E., Sari, D., & Kurniawan, F. (2025b). Effectiveness of health education in improving maternal knowledge and behavior during pregnancy. *Journal of Midwifery and Reproductive Health*, 13(1), 45–53.
- Handayani, R., Putri, A., & Lestari, S. (2024). Maternal knowledge and its impact on pregnancy preparation behavior. *International Journal of Pregnancy and Child Health*, 9(3), 120–128.
- Kamel, H., & Hassan, R. (2025). Olive oil application in pregnancy: A review of benefits for skin and perineal preparation. . . *Journal of Obstetric and Gynecological Research*, 21(1), 12–20.
- Martins, L., Ferreira, M., & Silva, R. (2024). Perineal trauma prevention and maternal outcomes in vaginal delivery: A systematic review. . . *BMC Pregnancy and Childbirth*, 24(1), 210.
- Nisa, R. Abdullah, G. Mala, A. Jumroni, Rofi'ah, U.A. Sunariyah, A. Muhaimin, M.Z. Zuhriyah, N. Puspita, A. G. (2026). *Metode Penelitian Praktis: Panduan Menyusun Karya Ilmiah*. Asta Cipta Mandiri Indonesia
- Organization, W. H. (2024). WHO recommendations on maternal and newborn care for a positive postnatal experience. *Geneva: WHO*.
- Pratiwi, N., & Handayani, T. (2025). Maternal age and health literacy in pregnancy care practices. *Indonesian Journal of Public Health*, 18(1), 33–40.
- Rahmawati, D., & Astuti, Y. (2025). Demonstration-based learning in improving maternal self-care skills during pregnancy. *Indonesian Journal of Midwifery Education*, 9(2), 77–85.
- Rahmawati, N., & Astuti, Y. (2025). The role of demonstration-based learning in improving maternal self-efficacy in pregnancy care. *Indonesian Journal of Health Education*, 9(2), 77–85.
- Sari, N., Rahmawati, D., & Kurniawan, F. (2025a). Community-based maternal education and behavioral change in pregnancy care. *Journal of Community Health Nursing*, 18(1), 33–41.
- Sari, N., Rahmawati, D., & Kurniawan, F. (2025b). Health education and practical training in maternal care: Improving behavioral outcomes among pregnant women. *Journal of Community Health Nursing*, 18(1), 33–41.
- Sari, Y., Fitriani, E., & Wulandari, P. (2024). Maternal education level and health literacy in pregnancy care. *Journal of Reproductive Health Sciences*, 8(2), 88–95.
- Wulandari, P., & Sari, M. (2025). Educational attainment and maternal health behavior during pregnancy. *International Journal of Midwifery Science*, 15(1), 41–49.
- Wulandari, P., Hidayat, T., & Susanti, E. (2024). Educational interventions in antenatal care: Improving knowledge and skills of pregnant women. *Journal of Health Promotion and Education*, 12(2), 101–108.
- Yin, X., Zhang, L., & Chen, Y. (2024). Antenatal perineal massage for prevention of perineal trauma: A systematic review and meta-analysis. *The Lancet Global Health*, 12(3).
- Yuliana, D., Simanjuntak, H., & Manurung, E. (2024). Parity and maternal knowledge of childbirth preparation practices. *Indonesian Journal of Midwifery Research*, 7(3), 90–98.

