

Education on Normal and Caesarean Delivery Based on Leaflets and Animated Videos

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Keywords: Cesarean Section, Health Literacy, Participatory Action Research, Maternal Education.		Abstract. The cesarean section (CS) rate in Mataram City has reached 67.2%, far above the national average. This increase raises medical, social, and economic concerns, especially since many procedures are performed without clear medical indications. A key contributing factor is low health literacy among women of reproductive age, including limited understanding of childbirth options, fear of pain, misconceptions about safety, and lack of family support. This community service activity applied a Participatory Action Research (PAR) approach in four stages: (1) problem identification with health centers, cadres, and women of reproductive age; (2) development of educational media in the form of leaflets and animated videos; (3) implementation through interactive lectures and discussions with 30 participants at Yarsi Mataram; and (4) participatory reflection and evaluation using pre-post tests. the findings showed an increase in average knowledge scores from 72.33 to 91.33. Beyond knowledge, participants also reported reduced fear of normal delivery, greater confidence in making childbirth decisions, and stronger commitment to seek support from health workers and families. This activity demonstrates that targeted health education can effectively improve both knowledge and attitudes toward childbirth. Replication is recommended in other areas with high CS rates, with cadres and community leaders trained as facilitators to ensure sustainability and wider impact.	
Katakunci: Persalinan Sesar, Literasi Kesehatan, Participatory Action Research, Edukasi Ibu.		Abstrak. Tingkat persalinan sesar (CS) di Kota Mataram telah mencapai 67,2%, jauh di atas rata-rata nasional. Peningkatan ini menimbulkan kekhawatiran dari sisi medis, sosial, maupun ekonomi, terutama karena banyak prosedur dilakukan tanpa indikasi medis yang jelas. Salah satu faktor penyebab utama adalah rendahnya literasi kesehatan pada perempuan usia reproduktif, termasuk keterbatasan pemahaman tentang pilihan persalinan, rasa takut terhadap nyeri, kesalahpahaman tentang aspek keamanan, serta kurangnya dukungan dari keluarga. Kegiatan pengabdian kepada masyarakat ini menerapkan pendekatan Participatory Action Research (PAR) dalam empat tahapan: (1) identifikasi masalah bersama puskesmas, kader, dan	

perempuan usia reproduktif; (2) pengembangan media edukasi berupa leaflet dan video animasi; (3) implementasi melalui ceramah interaktif dan diskusi dengan 30 peserta di Yarsi Mataram; serta (4) refleksi partisipatif dan evaluasi menggunakan pre-post test. Hasil kegiatan menunjukkan adanya peningkatan skor rata-rata pengetahuan dari 72,33 menjadi 91,33.

Selain peningkatan pengetahuan, peserta juga melaporkan berkurangnya rasa takut terhadap persalinan normal, meningkatnya kepercayaan diri dalam mengambil keputusan persalinan, serta komitmen yang lebih kuat untuk mencari dukungan dari tenaga kesehatan maupun keluarga. Kegiatan ini membuktikan bahwa edukasi kesehatan yang terarah dapat secara efektif meningkatkan pengetahuan sekaligus sikap terhadap persalinan. Replikasi program serupa direkomendasikan di wilayah lain dengan angka CS yang tinggi, dengan melibatkan kader dan tokoh masyarakat sebagai fasilitator terlatih.

1 Introduction

Pregnancy and childbirth is one of the most important periods for a woman in her life cycle. This process or stage not only affects a woman's life personally, but also impacts society and future generations (Reiter M & Bertrand AP, 2018). Therefore, it is important to provide adequate support, education and resources to ensure this reproductive experience is positive and safe.

In recent decades, the trend of choosing a delivery method has shifted. The method of cesarean section (SC) has increased significantly in both developed and developing countries. Originally an alternative if normal childbirth could not be performed, SC is now often the main choice (WHO, 2021).

According to new research from the World Health Organization (WHO), caesarean section deliveries are on the rise globally, and the current situation includes 1 in 5 cesarean sections (21%) of all births. It is estimated that this rate will continue to rise over the next decade, with nearly one-third (29%) of all births likely to occur by caesarean section by 2030 (WHO, 2021).

Indonesia is among the countries with a high rate of cesarean section (CS) deliveries, and the numbers continue to rise. National surveys indicate that the proportion of CS deliveries has steadily

increased, while in Mataram City the figure is far above the national average, with most deliveries occurring through CS rather than normal birth. This trend highlights the urgency of addressing underlying factors influencing women's childbirth choices.(BKPK Kemenkes RI, 2024).

Table 1. Cesarean Section (CS) Delivery Rates in Indonesia and Mataram City

Location / Source	Year	CS Delivery (%)	Normal Delivery (%)
Indonesia (Risksdas)	2018	17.6	–
Indonesia (IHS)	2023	25.9	73.2
Mataram – Govt. Hospitals	2024	61.98	–
Mataram – Private Hospitals	2024	67.2	–

The data in Table 1 clearly shows that the rate of cesarean deliveries in Mataram City, both in public and private hospitals, is much higher than the national average. While Indonesia as a whole recorded 25.9% of deliveries by cesarean section, the proportion in Mataram exceeded 60%, indicating that cesarean deliveries have become more common than normal deliveries. This difference suggests that factors beyond medical indications may influence delivery decisions, such as low health literacy, fear of pain, and limited family or social support. Therefore, community-based educational interventions are urgently needed to improve knowledge, attitudes, and decision-making among women of reproductive age, ensuring that cesarean deliveries are chosen based on medical necessity rather than misconceptions or misinformation.

A study conducted in one of the health care facilities in Mataram City showed that 61.7% of respondents had low knowledge about delivery methods, 26% of them planned to deliver via SC despite their low knowledge, and 59% of the respondents in the study chose to follow the advice of obstetricians to perform SC (Arabyah, 2023). This is supported by a quantitative systematic review which showed that only a small proportion of women had a preference for SC delivery, although women thought they had made an autonomous decision, in reality they were just following the advice of their obstetrician (Loke et al., 2019a).

Further understanding of women's views is needed to develop interventions that better suit their needs and circumstances (Colomar et al., 2021).

The urgency of this community service lies in the fact that low health literacy not only affects individual decision-making but also creates broader public health implications. Misconceptions and elective preferences for cesarean sections increase the risk of unnecessary medical interventions, higher healthcare costs, and potential long-term complications for mothers and infants. Addressing this issue through targeted educational programs can help women of childbearing age make more informed decisions, reduce preventable CS cases, and foster a cultural shift toward valuing normal delivery when medically feasible.

Mataram was selected as the site for this community service because it represents one of the regions with cesarean delivery rates far exceeding the national average, reaching more than 60% in both government and private hospitals. This situation indicates not only medical challenges but also significant socio-cultural dynamics influencing childbirth choices. As the capital city of West Nusa Tenggara, Mataram also serves as a referral hub for surrounding areas, making it a strategic location to implement and evaluate health literacy interventions that can be replicated more widely across the province.

Some women, for example, consider SC as a way to avoid pain, maintain their figure, or avoid the trauma of normal childbirth, without realizing that SC also carries risks such as infection, bleeding, longer recovery, and future pregnancy complications (Colomar et al., 2021). This limited awareness is further reinforced by the influence of social norms, media portrayals that often frame CS as a “modern” or “safer” option, and health systems that sometimes fail to provide adequate patient education. For instance, a WHO (2021) report highlights that insufficient counseling during antenatal care is one factor driving unnecessary CS, while studies in Indonesia also note that communication barriers between health workers and patients contribute to misperceptions about delivery methods (Kemenkes RI, 2023).

This situation reflects not merely individual knowledge gaps but also the absence of systematic educational interventions. By systematic,

this refers to structured and sustainable efforts such as the integration of evidence-based childbirth education modules in hospitals and community health centers, national-level maternal health campaigns, and the use of digital applications or audiovisual media tailored to local culture. Without such interventions, women of reproductive age are left with fragmented and unbalanced information, which perpetuates misconceptions and elective CS decisions without medical indications (Ananna & Hossain, 2023).

Thus, the increase in cesarean section rates that are not based on true medical indications should not only be seen from a clinical perspective, but also as a manifestation of a health literacy crisis among women of childbearing age (Colomar et al., 2021).

Amidst the increasing trend of cesarean delivery, education about vaginal delivery is becoming increasingly important for women of childbearing age (Ananna & Hossain, 2023). Comprehensive education enables women to understand the benefits and risks of both types of delivery, so that they can make more informed decisions that suit their health conditions and personal preferences.

Education with counseling activities is a fairly effective method for increasing the knowledge of various target groups. The use of media in counseling has proven useful to facilitate the acceptance of material by the target (Sastrawan & Bahrudin, 2021).

2 Method

This community service activity was carried out using the *Participatory Action Research* (PAR) approach, which is a participatory research method that emphasizes active collaboration between service providers and target communities in designing, implementing, and evaluating interventions (Suwendi et al., 2022). This approach was chosen because it is relevant to empower groups of women of childbearing age (WUS) as active subjects, not just objects receiving education, in the process of improving reproductive health literacy, especially related to childbirth methods.

The activity was carried out in the Mataram City area, with the main target of women of childbearing age. The PAR process in this activity is divided into four main stages:



Diagram 1. Stages of Community Service

The community service activities in Mataram City began with a collaborative problem identification process. In April 2025, a service team was formed consisting of five members from two educational institutions, Poltekkes Kemenkes Mataram and Qamarul Huda Badaruddin Bagu University. Through focus group discussions involving women of childbearing age, posyandu cadres, and local health workers, the team explored perceptions, experiences, and information needs related to childbirth methods, particularly normal delivery and cesarean section. The findings revealed a high rate of cesarean section deliveries in both government and private hospitals, alongside limited understanding of the medical indications for cesarean procedures. This was compounded by myths in the community that positioned cesarean delivery as superior to normal childbirth. To address these issues, the team coordinated with the local health center to gain approval and logistical support, agreeing on schedules, socialization strategies, and the preparation of educational facilities. Based on these findings, educational content was then developed to be contextually and culturally relevant, taking the form of leaflets adapted to community literacy levels and short educational animated videos with Indonesian narration, produced between May 10 and 25, 2025.

The implementation stage combined both face-to-face and digital approaches to ensure wide and sustainable dissemination. A direct

educational session was conducted at Inkes Yarsi Mataram on July 13, 2025, involving 30 participants, where leaflets were distributed and explained interactively, supported by animated video screenings. Discussions encouraged participants to reflect on the risks and benefits of normal and cesarean deliveries, while fostering commitment to plan for normal childbirth in future pregnancies. At the same time, dissemination continued through WhatsApp groups and local posyandu platforms, allowing participants to access the materials repeatedly and engage in ongoing discussions. To sustain the program, a *Childbirth Literacy Ambassador* was appointed to promote education continuously. Finally, reflection and evaluation were carried out through a pre- and post-test questionnaire as well as an educational quiz with prizes, ensuring that participants' understanding of the materials was effectively measured. This participatory approach not only improved health literacy but also encouraged women of childbearing age to become active decision-makers regarding childbirth.

To provide a more systematic overview of the community service process using the Participatory Action Research (PAR) approach, the following table presents the stages of activities along with the outcomes achieved at each stage. This table outlines the sequence from planning to evaluation, serving as a reference for assessing the effectiveness and sustainability of the program.

Tabel 1. PAR Stages and Outcomes in Community Service

PAR Stage	Main Activities	Documentation
Problem Identification	FGD with WCA, cadres, and health workers to identify high C-section rate and childbirth myths.	

Media Planning	Designing leaflets and short animated videos on childbirth methods.	
Implementation	Education through face-to-face sessions (30 participants) and dissemination via WhatsApp/Posyandu with health ambassadors.	
Reflection & Evaluation	Pre-post test, quizzes, and participatory reflection	

3 Results

This educational activity was carried out using the lecture method and face-to-face discussions on July 13, 2025 at the Yarsi Mataram health center. This activity involved midwives, cadres and target participants totaling 30 people.

The results obtained from the implementation of this service are in the form of active participation and increased literacy from women of childbearing age regarding normal labor methods and cesarean section delivery.

Table 2. Characteristics of Education Participants (n = 30)

Characteristics	f	%
Age		
15-19	1	3,33
20-35	24	80
36-49	5	16,67
Parity		
- Primipara	12	40
- Multiparous	15	50
- Grandemultipara	3	10
Education Level		
- Low (no school - elementary school)	4	13,3
- Secondary (JUNIOR HIGH SCHOOL-HIGH SCHOOL)	19	63,3
- High (Bachelor degree)	7	23,3

Table 1 shows that the characteristics of reproductive age dominate the education participants with a percentage of 80%, and most of them are multiparous mothers or who have given birth more than once, and the level of secondary education with the highest percentage of 63.3%.

Table 3. Frequency Distribution of Participants' Knowledge before and after education

Knowledge level	Before education		After education	
	f	%	f	%
Good	12	40	28	93,3
Fair	14	46,6	2	6,7
Less	4	13,4	-	-
Total	30	100	30	100

Table 2 shows the knowledge of participants before education as much as 46.6% had sufficient knowledge and after education the majority (93.3%) of participants had good knowledge about labor methods.

The implementation of this educational activity not only increased participants' knowledge but also brought about positive behavioral changes. After receiving education, many women expressed reduced fear of normal childbirth, showed greater openness to discussing delivery options with health workers, and demonstrated stronger confidence in making decisions based on medical indications rather than social influence. Participants also reported a willingness to share the information with peers and family members, indicating the potential for broader community impact. These findings suggest that improving literacy through simple media and participatory methods can gradually shift attitudes and behaviors toward safer and more rational choices in childbirth.

Table 3. Test Results of Differences in Average Knowledge of Participants about childbirth methods before and after education (n = 30)

Knowledge	Min	Max	SD	Mean	Range	P Value
Before	40	90	16,12	72,33	50	0,001
After	60	100	10,74	91,33	40	

Table 3 shows the average knowledge of participants before being given education 72.33 and after being given education increased to 91.33. Based on the results of the Wilcoxon test, there is an effect of education on increasing the literacy of women of childbearing age regarding reproductive health about childbirth methods (P Value = 0.001).

After participatory reflection and evaluation of this activity, the results showed an increase in participants' understanding of the advantages and risks of each method of childbirth and the emergence of critical discussions among participants about their rights in decision making during childbirth. Suggestions and feedback from participants were also collected to improve the educational materials for sustainable use by health cadres.

We selected and certified an active and communicative WUS as a "Childbirth Literacy Ambassador" in her community, Mrs. FH from Grand Muslim posyandu. This childbirth literacy ambassador was then given the trust to educate 5 other women with the same media, namely leaflets and animated videos with a storytelling approach based on her own

experience whose activities were monitored by the service providers. The activity was carried out on July 22, 2025 at the residents' homes.

4 Discussion

The service activity carried out in Mataram City was attended by 30 women of childbearing age who were purposively selected from several health center areas representing urban and peri-urban settings. The participants were chosen based on their reproductive status, namely being in the age range of 20–40 years and having previous childbirth experience, either normal or cesarean. This purposive selection aimed to capture diverse perspectives regarding childbirth methods and ensure the relevance of the educational intervention. The activity produced positive outcomes, especially in improving understanding of childbirth planning for the next pregnancy, while also addressing the shifting trends in women's preference for delivery methods.

Labor is a natural process that marks the end of pregnancy and the beginning of a new life for the baby. Normal delivery or spontaneous vaginal delivery from a medical perspective is the safest, most efficient delivery method for most pregnant women, especially those without any health risks. However, in recent decades, the rate of *cesarean* delivery has increased significantly and is often performed without proper medical indication, also known as *unnecessary caesarean section*. This phenomenon encourages the importance of education and promotion regarding the benefits of normal labor (PP POGI, 2022).

Women of childbearing age (WCA) are defined as women aged 15–49 years, starting from the onset of menstruation until menopause, regardless of marital status, who still have the potential to become pregnant (Mukaromah et al., 2022). This group is particularly important as the main target of childbirth education because they are in a reproductive phase where decisions related to pregnancy and delivery methods are highly relevant. Strengthening knowledge among WCA not only helps them prepare for safe and healthy childbirth but also contributes to reducing unnecessary cesarean sections and promoting informed decision-making in maternal health.

In accordance with the theory of Notoatmodjo (2014) states that a person's level of knowledge is influenced by education, experience, sources of information, cultural and socio-economic environment. Therefore, the team conducted a pre-test first.

Through the leaflets distributed, information about the benefits and risks of normal labor and cesarean section is conveyed in a concise and easy-to-understand manner. The leaflet covers aspects of the definition, types and benefits as well as risks of normal and cesarean delivery, benefits for the mother and baby, and steps that need to be taken to safely undergo normal delivery.

The animated video produced provides an interesting and interactive visual approach, making it easier to convey information to the audience. With its short duration and concise message, the video helps women of childbearing age understand the process of normal childbirth and prepare better.

Comprehensive education on the risks and benefits of normal delivery (per vaginam) and *cesarean* delivery (*sectio caesarea*) is essential for women of childbearing age as it enables them to make informed decisions that are in line with their preferences and health conditions. Lack of accurate and balanced information may lead women to choose cesarean delivery without clear medical indications, potentially increasing the risk of complications and health costs (Keag et al., 2018).

This activity received positive responses from participants. Many participants expressed that they felt more confident and gained more knowledge about childbirth methods after this education. The interactive discussion that followed the video also provided an opportunity for participants to ask questions and share their experiences.

After the education through lectures and discussions was given, then a post-test evaluation was carried out through distributing questionnaires to WUS to evaluate and assess knowledge about the promotion of normal labor, its risks and benefits compared to cesarean delivery, where the values obtained showed positive results in increasing the literacy of women of childbearing age.

The results of this service are in line with education using animated videos that have been carried out by Widyastuti, 2025 with the theme of video-based childbirth preparation education for third trimester pregnant women, where educated participants showed a significant increase in knowledge after intervention with the results of the Wilcoxon Test $p < 0.05$ (Widyastuti et al., 2025). Similarly, a service conducted at a PMB in Tanjung Pinang City in October 2024 with using leaflet media to reduce the level of anxiety of mothers in facing labor, showed positive results in the form of a significant increase in pre-test and post-test scores (Sulistiyowati & Yuriati, 2025).

A study in Riau Province compared the effects of using educational videos, leaflets, and routine education on mothers' knowledge of puerperal danger signs. The results showed that educational videos were the most effective compared to leaflets and routine verbal education with a p value of <0.001 (Wahyu & Mayangsari, 2025).

Education can improve maternal and infant health by promoting safe and evidence-based delivery practices. Educated women tend to be more compliant with medical recommendations and more proactive in seeking appropriate care during pregnancy and labor (Loke et al., 2019).

The final reflection highlights that this program had a significant impact, particularly in improving women's understanding of childbirth methods and encouraging them to be more critical in making decisions for future pregnancies. Beyond increasing health literacy, a collective commitment was established through the appointment of a Childbirth Literacy Ambassador, ensuring the sustainability of information dissemination. Another tangible impact was the shift in perception from myths about the superiority of cesarean delivery toward a more rational understanding, showing that the program not only enhanced knowledge but also transformed participants' mindsets and attitudes.

5 Conclusion

Educational activities using leaflets and animated videos for women of childbearing age (WUS) in Mataram City proved effective in improving reproductive health literacy, as reflected by a significant increase in

knowledge scores from pre-test to post-test and more active participation in discussions about safe and medically appropriate delivery methods. These results indicate that simple and culturally relevant media can successfully enhance awareness, critical thinking, and rational decision-making related to childbirth. To strengthen the impact, similar activities should be replicated in other communities with high elective cesarean rates and low health literacy, while the developed media should be integrated into routine health education programs such as posyandu, pregnancy classes, and puskesmas waiting rooms. For sustainability, health cadres and women leaders need to be trained as facilitators, supported by regular monitoring and continuous development of additional content tailored to community needs.

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