Pregnancy Class Program in West Java Province: a literature review

Dinta Rahmawaty[1]*, Maria Natalia Laro[1], Vivi Rosalin Rajagukguk[1], Windu Syawalina Wahyuningsih[1]

[1]Department of Biostatistics, Epidemiology, and Population Health, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

*Correspondence:
dintarahmawaty@mail.ugm.ac.id

Abstract

Purpose: This study aims to analyze the implementation of the Pregnancy Class Program in West Java Province and develop policy recommendations to enhance maternal health outcomes. **Method:** A literature review was conducted using journal databases including ResearchGate, ScienceDirect, and Google Scholar. Articles published between 2018 and 2024 were retrieved using keywords such as "evaluation," "implementation," "policy," "pregnancy class," "prenatal education," and "West Java." From 58 identified articles, six studies that met the inclusion criteria were selected and thematically analyzed. **Results:** The review identified several challenges in implementing pregnancy classes in West Java, including low participation rates, limited partner and family involvement, and barriers faced by working mothers. Digital innovations, such as video-based education and online classes, have effectively increased maternal knowledge and participation. Furthermore, family-oriented approaches and prenatal yoga sessions had a positive impact on maternal preparedness and confidence. **Conclusion:** The pregnancy class program holds significant potential to improve maternal and neonatal outcomes in West Java. However, to maximize the effectiveness of its online educational sessions and offline interactive activities, such as prenatal yoga, is recommended. Additionally, to maximize its effectiveness, high-quality video content, continuous training for healthcare workers, and sufficient funding should be integrated to enhance the program's reach and impact.

Keywords: maternal health; pregnancy class; prenatal education

INTRODUCTION

The Indonesian government continues to improve access to healthcare services, especially for vulnerable groups such as pregnant women, mothers in labor, postpartum mothers, and newborns. One key indicator of health development is the reduction of the maternal mortality rate (MMR) [1]. According to the 2015 Inter-Census Population Survey (SUPAS), Indonesia's MMR was 305 per 100,000 live births, which declined to 189 per 100,000 in 2022 [2]. While this is close to the 2024 National Medium-Term Development Plan (RPJMN) target of 183, it is still far from the Sustainable Development Goal (SDG) target of 70 per 100,000 by 2030.

In West Java Province, maternal deaths reached 792 cases in 2023, equivalent to 96.89 per 100,000 live births—an increase compared to the previous year [3]. The leading causes of maternal mortality include non-obstetric complications (24.49%), hypertension

(23.61%), hemorrhage (19.07%), other obstetric complications (5.81%), and other causes (21.34%). Most deaths occurred during the postpartum period (61%), followed by pregnancy (22.47%) and labor (15%).

One initiative to reduce MMR is the Pregnancy Class Program and the Childbirth Planning and Complication Prevention program. Pregnancy classes aim to increase mothers' knowledge and skills related to pregnancy, childbirth, postpartum care, and newborn care [4]. These classes target pregnant women between 20 and 32 weeks of gestation and are facilitated by healthcare providers using the Maternal and Child Health (MCH) Book and other learning materials.

Previous research has shown that these classes improve the early detection of complications [4]. However, participation remains suboptimal. Yuliani et al. (2023) noted that low attendance is an indirect factor contributing to maternal deaths [5]. In 2021, 8,990 (89.9%) community health centers in Indonesia offered these classes, but the average participation rate was still below 75%. In West Java, participation rates were 60.56% in 2020 and increased slightly to 65.78% in 2021 [6].

Several factors influence participation, including employment status, spousal support, maternal attitudes, and access to information [7,8]. Innovative methods, such as utilizing WhatsApp groups, facilitate the delivery of flexible details, particularly for working mothers. Partner support also plays a crucial role in building maternal confidence during emergencies [9]. However, challenges such as work schedules, transportation access, and facility limitations continue to hinder participation [10-12].

While previous studies have explored the factors influencing attendance in pregnancy classes—such as knowledge, attitudes, and the role of healthcare providers—few have comprehensively examined effective and context-specific implementation models. There is a lack of integration of digital platforms and family-based approaches in these programs. This study addresses the gap by analyzing six relevant studies from West Java, aiming to develop policy recommendations that support a more inclusive, adaptive, and effective Pregnancy Class Program.

METHODS

This study utilized a literature review approach to analyze the implementation of the Pregnancy Class Program in West Java Province. An effective literature review as a research method can establish a foundation for expanding knowledge and facilitating theory development [13]. The purpose was to identify key challenges, innovative practices, and potential improvements that could serve as the basis for policy recommendations. The literature search was conducted systematically using three electronic databases: ResearchGate, ScienceDirect, and Google Scholar. The search was conducted between April and May 2024, using a combination of keywords including: "evaluation", "implementation", "policy", "pregnancy class", "pregnancy education", "prenatal class", and "West Java". These keywords were selected to ensure a comprehensive identification of studies relevant to the objectives of this review [14].

The eligibility criteria in this review consisted of both inclusion and exclusion elements to ensure the selection of relevant and high-quality studies. Studies were included if they were published between 2018 and 2024, written in English or Indonesian, and focused on pregnant women residing in West Java Province. Eligible studies examined the planning, implementation, or evaluation of pregnancy class programs and reported outcomes such as changes in knowledge, attitudes, behaviors, or maternal and neonatal health indicators. All types of study designs, including observational, quasi-experimental, and qualitative research, were considered. Studies were excluded if they did not focus on the West Java context, did not address pregnancy class interventions, lacked measurable outcomes, were not available in full text, or were categorized as opinion pieces, editorials, or conference abstracts without peer review.

A total of 58 articles were initially identified through the database search (Figure 1). After screening titles and abstracts, articles that did not meet the inclusion criteria or were duplicates were excluded. A final selection of six articles was included for full-text review and thematic analysis based on their relevance to the research questions. Key data were extracted from the selected articles, including author(s), year of publication, study design, population, type of intervention, and main findings. Thematic analysis was then conducted to identify core themes related to the implementation and outcomes of pregnancy class programs. These themes included participation barriers, family support, use of digital media, and educational outcomes. Based on the results of the thematic analysis, a solution options table was developed to compare various program models. The comparison considered several criteria: effectiveness, feasibility,scalability,cost-efficiency,and overall priority.
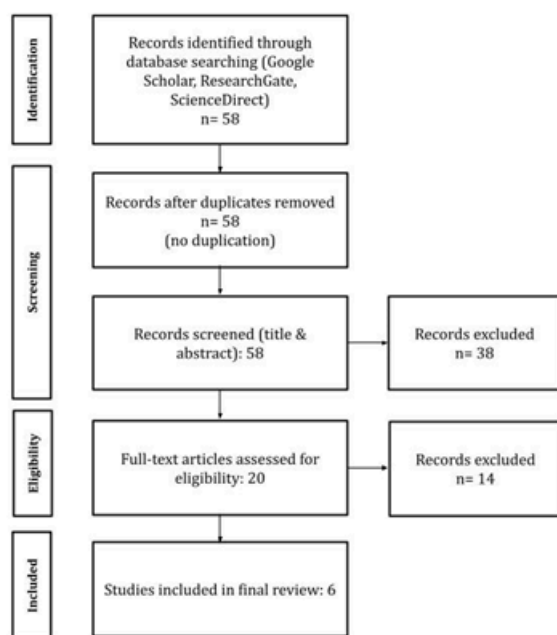
Figure 1. PRISMA Flowchart

RESULTS

In this section, we present a summary of the literature search results on various pregnancy class models in West Java, which is detailed in Table 1. These results include a review of existing pregnancy class models, evaluation of the models and findings, and implications for improving the coverage and quality of the Pregnancy Class Program. Several studies reviewed programs implemented in West Java and revealed suboptimal participation levels in these classes. The effectiveness of the classes is limited due to several influencing factors:

Lack of partner and family involvement

A significant factor impacting participation is the absence of partners and families during the classes. Encouraging partner and family involvement is critical to increasing attendance. This was supported by Marlina (2021) [15], who emphasized the need to prioritize this aspect to improve class visits, highlighted an innovation involving "family pregnant women's classes," where family members are included in educational processes to support pregnant women in making informed decisions about childbirth assistance [16]. Additionally, family support significantly influences pregnant women's health behaviors, including class attendance [17].

The benefits of such involvement are evident, as participation improves pregnant women's knowledge about pregnancy, delivery, postpartum care, and newborns, demonstrated by increased knowledge levels [18]. However, challenges persist, particularly regarding infrastructure. Observations and interviews revealed that inadequate facilities, such as cramped spaces and a lack of equipment like exercise mats for pregnancy workouts, limit the program's effectiveness. Budget constraints also hinder implementation. Farisni (2018) [19] reported that resource deficiencies, including inadequate tools (e.g., blackboards, exercise CDs) and insufficient dedicated spaces for classes, undermine program outcomes despite clear communication of objectives.

Participation barriers for working mothers

Many pregnant women cannot attend classes due to work commitments. Innovations such as video-based classes have shown promise, allowing women to engage with content conveniently. Studies indicate that video materials enhance knowledge, attitudes, and behaviors, including the choice of childbirth assistance [17]. Videos are particularly effective because they can be replayed, aiding understanding and preparation.

Online classes are another practical approach to addressing the needs of working mothers. Using audiovisual media for online pregnant women's classes has successfully increased knowledge about the prevention of pregnancy complications prevention. These online sessions can complement in-person classes [20]. Platforms like WhatsApp Groups (WAG) have been utilized as alternative educational tools, offering reinforcement after facility visits. Research indicates that WAG education improves hemoglobin levels in pregnant women, with significant changes observed across evaluations [17].

Low health literacy

Limited health literacy among pregnant women contributes to insufficient knowledge about pregnancy risks and complications. One solution is the implementation of Prenatal Classes conducted by professionals, targeting women with similar gestational ages. Participants reported improved readiness for delivery, particularly in managing fear and anxiety. Positive outcomes included better maternal preparedness, increased spousal support, and favorable childbirth experiences [21].

Prenatal yoga, often incorporated into these sessions, significantly reduces anxiety levels, systolic blood pressure, and fetal heart rates in primigravida mothers. Such practices provide an effective alternative for midwives to address maternal anxiety while enhancing the Pregnant Women's Class program to support maternal and fetal health [22]. These finding

Table 1. Summary of extracted research findings on pregnancy class models

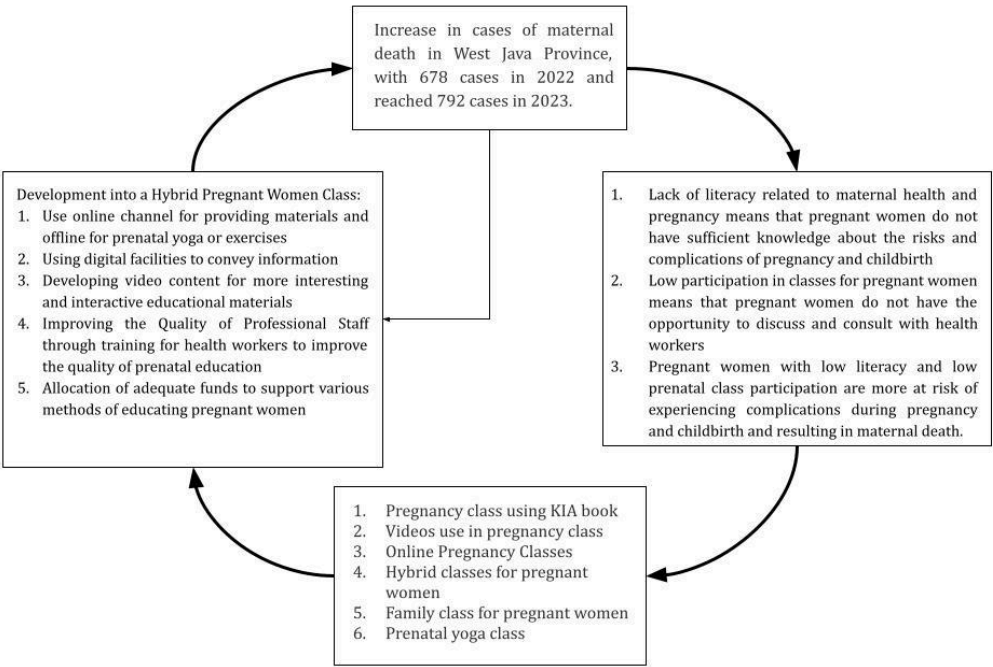| No	Title (Author, Year)	Design	Population	Results
1	Implementasi Kebijakan Kelas Ibu Hamil sebagai Bentuk Pemberdayaan Masyarakat dalam Upaya Penurunan Kematian Ibu di Kota Cimahi (Marlina,dkk, 2021)	Qualitative	Officials at the Health Service, Head of Community Health Center, Community Health Center staff, and pregnant women in Cimahi.	The implementation of the pregnancy class policy in Cimahi has not been effective, remains maternal mortality rate is still high. Participation of pregnant women in attending classes was not optimal, yet, with low family support.
2	Pengaruh Media Video pada Kelas Ibu Hamil terhadap Pengetahuan Sikap dan Perilaku Pemilihan Penolong Persalinan (Sari, 2019)	Quasi-experimental design with a randomized subjects posttest-only control group design approach.	Primiparous and multiparous third-trimester pregnant women at the Padasuka Community Health Center, Bandung.	Using video in pregnancy classes increased pregnant women's knowledge of selecting a birth attendants. The treatment group receiving video intervention had better knowledge than the control group using standard MCH books.
3	Metode kelas ibu hamil dalam meningkatkan pengetahuan pencegahan komplikasi kehamilan (Atmaja, 2023)	Quasi-experimental pretest and posttest with control group.	Pregnant women at the Majasem and Sitopeng health centers in Cirebon City.	Pregnant women's knowledge about pregnancy complications increased after attending classes, especially in the group that took online classes.
4	Pendampingan kelas ibu hamil dalam memberikan motivasi antenatal care sebagai upaya untuk meningkatkan kesehatan ibu dan janin di masa pandemi covid-19 (Rofiasari, dkk, 2020)	Community-based research in the form of online and offline interactive counseling based on online using information technology.	All pregnant women who have check-ups at the Independent Midwife Practice Clinic of Anyan Mulyani, SST., MM., M.Keb., Bandung.	Assistance in pregnancy classes increased pregnant women's knowledge about pregnancy, childbirth, postpartum, and newborns in classes for pregnant women, as evidenced by an increase in knowledge of pregnant women by 85.7%.
5	The Effectiveness of Education Through "Pregnant Mother Family Class" on the Selection of Birth Attendants (Nurfurqoni et al, 2023)	Quasi-Experiment	Pregnant women in the third trimester who live close to family (biological parents, in-laws, or husband) in Bogor	There is an increase in the selection of health workers as birth attendants. Besides that, the family class program is effective for increasing understanding and awareness about the importance of selecting trained health personnel for labor..
6	Women's experiences of the prenatal group class in Indonesia (Harahap & Afiyanti, 2019)	Phenomenology (Qualitative)	Pregnant women who attended prenatal group classes in Bekasi.	Pregnant women who joined group prenatal classes enhanced their preparation, reduced physical discomfort, and led to positive childbirth experiences.

Figure 2. Policy cycle analysis to develop recommendations for the pregnancy class policy in West Java

underscore the need for innovative strategies, adequate resources, and increased family involvement to improve the Pregnant Women's Class program's effectiveness in West Java.

DISCUSSION

Based on the findings from the literature review regarding the pregnant women's class program, to gain a deeper understanding of the dimensions of the problems faced, researcher identified the underlying root of the problem and selected options to develop solution recommendations in the Pregnancy Class policy in West Java Province using the policy cycle shown in Figure 2. Several program options to enhance the participation of pregnant women in pregnancy classes are as follows:

Pregnancy class using the KIA book

The KIA (Kesehatan Ibu dan Anak) Book is an Indonesian Maternal and Child Health book that serves as a comprehensive handbook designed to consolidate documentation into a single source [23]. But pregnant women often view the KIA book as something to be stored and brought to healthcare visits, but many are unaware it should be read and applied (24). Whereas other studies have demonstrated a connection between pregnant women's knowledge and attitudes regarding pregnancy danger signs with the benefits of the KIA book [25]. Although the KIA Book has been usually used as the main reference in pregnancy classes, research suggests that its effectiveness is often surpassed by more interactive media, which have been proven to greatly enhance knowledge retention and comprehension in childbirth preparation [26].

Use of video in pregnancy classes

The use of videos as an educational method offers advantages such as flexible learning, replayable material, and attractive message delivery, which can enhance motivation to learn [17]. The use of video media has been widely developed since the outbreak of Covid-19 as an alternative educational medium that minimizes the risk of infection and is more comfortable for pregnant women. Research findings suggest that online video-based educational media is highly recommended as an alternative approach and suitable for use during a pandemic [27]. However, it is essential to produce high-quality videos and share them through easily accessible channels to reach effectiveness.

Online pregnancy classes

Online classes offer flexibility in terms of time and location and easy access to audiovisual content that can be read and watched repeatedly [20]. Participants can engage with materials anytime and anywhere, saving time and transportation costs [28]. However, further development of this method should focus on enhancing the quality of materials and tools provided.

Hybrid pregnancy classes

This approach combines the benefits of both online and offline methods by delivering materials online while conducting activities such as prenatal yoga offline. Limited direct interaction and potential distractions in online class can be addressed by providing offline meetings between online routines. Using a hybrid model in online learning can improve interaction by combining online and face-to-face elements to reach learning outcomes [29]. Challenges include managing time for pregnant women to attend classes and providing adequate facilities and resources, as well as coordinating online and offline activities effectively.

Family pregnancy classes

This method involves family members in the educational process, enhancing support for pregnant women in making decisions related to pregnancy and childbirth. Family engagement can foster a positive attitude in pregnant women and support their decision to choose a skilled birth attendant confidently [16]. To involve family members effectively, implement a family-oriented education program that includes group discussions, culturally relevant materials such as illustrated dramas, and an emphasis on the importance of family support and involvement in birth preparedness and decision-making [30]. However, it requires significant funding and scheduling coordination with family members to participate in pregnancy classes.

Prenatal yoga classes

Prenatal classes conducted by professionals provide comprehensive education in small groups, including regular check-ups and prenatal yoga exercises. Their strengths lie in delivering in-depth knowledge, promoting interaction, and offering more substantial support from husbands or family members [21]. The main limitations are the high costs and resource requirements and scheduling classes for mothers with

Table 2. Solution options table to develop recommendations on improving the pregnancy class in West Java

Solution	Effectiveness	Feasibility	Scalability	Cost efficiency	Overall priority	Rationale
Hybrid pregnancy classes	High	Medium	High	Medium	High	Combining the strengths of online flexibility and offline interaction, addressing participation barriers.
Video content for education	High	High	High	High	High	Enhances knowledge retention with scalable and cost-effective delivery.
Online-only pregnancy classes	Medium	High	High	High	Medium	Flexible and accessible, but lacks interactive elements that improve engagement.
Family involvement models	High	Medium	Medium	Medium	Medium	Encourages familial support but requires additional coordination and resources.
Using the KIA book	Medium	High	Medium	High	Medium	The KIA Book provides structured information but has limited engagement. It should be integrated into hybrid classes or digital content to increase utilization and effectiveness.
Prenatal yoga classes (offline)	Medium	Low	Low	Low	Low	Effective for physical preparation but limited by high resource needs and accessibility challenges.

The recommendations were developed using a systematic comparison of solution options table. This approach, as outlined by Bardach (2012) and Dunn (2016), ensures that each alternative is evaluated against defined criteria, including effectiveness, feasibility, and scalability. This structured process enables transparent and evidence-based decision-making, prioritizing interventions that align with program goals and resource constraints.

similar pregnancy stages. Key factors for success include increasing the participation and involvement of professional midwives.

Each method has strengths and challenges based on the analysis of various pregnancy class models. Combining online and offline methods and improving technological accessibility could be key strategies to increase participation and program effectiveness. The recommendations were developed by systematically comparing potential solutions through a solution options table (see Table 2). The recommendations have been synthesized and outlined as a policy brief (see Appendix).

The findings of this review have important implications for public health programming. By strengthening pregnancy classes through hybrid and family-based models, health authorities can increase maternal knowledge, support behavior change, and potentially reduce maternal mortality. Integrating digital tools and enhancing the capacity of health workers can also promote more equitable access to antenatal education, particularly for women in underserved or remote areas.

However, this study has several limitations. It is based on a narrative literature review, which does not include meta-analysis or quality assessment of the included studies. The number of studies reviewed was limited to six, all focused on the West Java region, which may reduce the generalizability of findings to other contexts. Additionally, potential publication bias and the absence of grey literature may have influenced the comprehensiveness of the review.

CONCLUSION

This review examined the implementation of the Pregnancy Class Program in West Java Province. The results show that, although the program is widely available, participation remains low due to several challenges, including limited support from families, low health literacy, and time constraints faced by working mothers. Traditional learning methods using the Maternal and Child Health (MCH) Book are ineffective in increasing knowledge or encouraging active participation. However, newer approaches such as video-based learning, online classes, and family-focused sessions have shown promise in improving maternal knowledge and preparedness.

To strengthen the program, it is recommended to apply a hybrid model that combines online education for delivering information with offline sessions for practical activities like prenatal yoga. This should be supported by easily accessible digital materials,

enhanced training for healthcare workers, and mobile apps or messaging platforms to provide reminders and follow-up. Involving families more actively and providing enough resources will also be key to success. These efforts can enhance the program's effectiveness and help mitigate maternal health risks in West Java.

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Appendix. Policy brief for improving the pregnancy class program in West Java Province

Policy Brief: Enhancing Pregnancy Class Programs in West Java

Issue

Maternal mortality in West Java remains a critical issue, with a maternal mortality rate of 96.89 per 100,000 live births in 2023. Despite efforts like Pregnancy Classes, low participation rates (65.78% in 2021) and implementation challenges hinder their effectiveness.

Methodology

The development of recommendations for improving the Pregnancy Class Program in West Java began with a literature review. The review evaluated existing research on pregnancy education programs, particularly in the West Java region, from 2018 to 2024. Following the literature review, a solution options table was developed to systematically evaluate potential interventions based on effectiveness, feasibility, scalability, and cost-efficiency.

Solution options and findings

Solution	Effectiveness	Feasibility	Scalability	Cost-efficiency	Overall priority
Hybrid pregnancy classes	High	Medium	High	Medium	High
Video content for education	High	High	High	High	High
Online-only pregnancy classes	Medium	High	High	High	Medium
Family involvement models	High	Medium	Medium	Medium	Medium
Using the KIA book	Medium	High	High	High	Medium (Merged)
Prenatal yoga classes (offline)	Medium	Low	Low	Low	Low (Merged)

Recommendations
1. Hybrid Delivery Model
   Online Sessions to deliver theoretical materials and offline Activities to Conduct interactive sessions or activities.
2. Utilization of Digital Tools
   Distribute information through popular channels like WhatsApp, and provide reminders for class schedules.
3. High-Quality Educational Content
   Create engaging video content focusing on practical knowledge for pregnancy and childbirth.
4. Strengthening Human Resources
   Train healthcare professionals in interactive teaching methods to improve delivery and engagement.
5. Funding Allocation
   Secure funding for necessary resources, including digital infrastructure, materials, and trained facilitators.
6. Involving Families
   Incorporate family-focused sessions to enhance spousal and familial support for pregnant women.

Conclusion

The recommendations outlined in this policy brief are designed to address the challenges identified through the literature review. The hybrid approach, supported by digital media and family involvement, is expected to enhance participation, improve maternal knowledge, and ultimately reduce maternal mortality in West Java. These solutions offer a comprehensive and scalable path forward for strengthening the Pregnancy Class Program.