

Prenatal Exercise Training and Education on Anemia and Iron-Folic Acid (IFA) Supplements

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ABSTRACT

This Community Service activity aimed to increase pregnant women's knowledge regarding anemia and iron-folic acid supplements, as well as to improve their skills in performing prenatal exercises safely. The activity took place at the Melati 1 Integrated Health Post (Posyandu) in Kadu Village, Jatigede District, Sumedang Regency, West Java, involving 15 pregnant women. The methods employed included health education, discussions and Q&A sessions, demonstrations, and hands-on practice of prenatal exercises. The educational material covered the definition and causes of anemia, signs and symptoms, the impact of the condition, prevention strategies, the benefits of iron-folic acid supplements, proper consumption methods, and the importance of adherence to the supplement regimen. The results showed that all participants engaged well with the program and actively participated in the education, discussion, and exercise sessions.

INTRODUCTION

Pregnancy is a critical period requiring attention to the health of both the mother and the fetus. Throughout pregnancy, various physiological, metabolic, and psychological changes occur, increasing nutritional needs and necessitating continuous health monitoring. Meeting nutritional requirements, engaging in appropriate physical activity, attending regular prenatal check-ups, and preventing or managing health issues are essential for maintaining maternal and fetal health (Srivastava et al., 2025). Anemia is a common health issue encountered during pregnancy. It is primarily associated with the increased demand for iron to synthesize hemoglobin and support the expansion of maternal blood volume, as well as the growth requirements of the fetus and placenta. Failure to meet these demands can lead to maternal iron deficiency and anemia (Gandhi et al., 2017; Hartati & Deprianti, 2013). Because anemia during pregnancy can cause health consequences for both mother and baby, prevention and early detection must be integral components of antenatal care. The WHO recommends iron and folic acid supplementation during pregnancy as a key antenatal intervention to reduce the risk of maternal anemia and iron deficiency.

In Indonesia, efforts to prevent anemia among pregnant women include providing Iron-Folic Acid (IFA) tablets. The Ministry of Health recommends that pregnant women take these tablets regularly – specifically, one tablet daily, with a minimum of 90 tablets consumed throughout the pregnancy. However, providing IFA tablets alone is insufficient without adequate knowledge of their benefits, proper consumption methods, potential side effects, and the importance of adherence to the regimen (Lyoba et al., 2020; Srivastava et al., 2025). Beyond nutrition and anemia prevention, appropriate physical activity is crucial for maintaining a mother's fitness during pregnancy. Physical activity for pregnant women must be tailored to pregnancy status, gestational age, physical capabilities, and any risk factors or complications. Ministry of Health guidelines include physical activity, specifically prenatal exercise, as a component of classes for pregnant women. For those between 20 and 32 weeks of gestation, prenatal exercise may be performed provided the mother's condition and safety are taken into account (Baena-García et al., 2023; Roland et al., 2023).

Prenatal exercise is a form of physical activity designed to help maintain fitness and prepare mothers for childbirth. These exercises must be performed correctly and safely, with due regard for each participant's individual condition. The Ministry of Health has also published a module on prenatal exercise movements to serve as a learning resource for conducting these activities (Boparai et al., 2021; Chae et al., 2022). The Posyandu (Integrated Health Post) is a community-based health service facility that serves as a venue for education and community empowerment, including efforts to improve pregnant women's knowledge. Health education sessions at the Posyandu provide a platform to disseminate information on anemia, nutrition during pregnancy, adherence to blood-supplementing tablets (IFA), and safe physical activity during pregnancy.

Based on these considerations, a community service activity titled "Prenatal Exercise Training and Education on Anemia and Blood-Supplementing Tablets" was conducted at Posyandu Melati 1 in Kadu Village, Jatigede District, Sumedang Regency, West Java. This activity targeted 15 pregnant women and aimed to enhance their knowledge and skills in maintaining health during pregnancy. Activity Objective: To improve pregnant women's knowledge and skills in maintaining their health during pregnancy through prenatal exercise training and education on anemia and blood-supplementing tablets.

IMPLEMENTATION AND METHODS

The community service activity will be conducted through the following:

1. Health education regarding anemia during pregnancy.
2. Education on iron-folic acid (blood-boosting) tablets.
3. Discussion and Q&A session.
4. Demonstration of prenatal exercises.
5. Guided practice of prenatal exercises with participants.
6. Evaluation of participant understanding.

The educational methods will employ an interactive lecture approach, discussions, demonstrations, and hands-on practice. Materials include leaflets, posters, flip charts, Maternal and Child Health (MCH) handbooks, and audiovisual media. These materials align with the educational approach for prenatal classes recommended in Ministry of Health guidelines.

Target Audience

The activity targets 15 pregnant women residing in the service area of Posyandu Melati 1, Kadu Village, Jatigede District, Sumedang Regency, West Java. The activity will take place at Posyandu Melati 1, Kadu Village, Jatigede District, Sumedang Regency, West Java, on January 24, 2026

Implementation Stages

a. Stage 1. Preparation

The preparation stage includes:

- 1) Coordination with the Melati 1 Integrated Health Post (Posyandu).
- 2) Coordination with local health volunteers (kaders) and health workers.
- 3) Scheduling the activity.
- 4) Registering participants.
- 5) Developing educational materials.
- 6) Preparing educational media.
- 7) Preparing the venue.
- 8) Arranging for an exercise instructor/facilitator.

b. Stage 2. Implementation

The activity begins with participant registration and an opening session. Next, the facilitator presents information on anemia and Iron-Folic Acid (IFA) supplements using an interactive lecture method. Following the presentation, participants are given the opportunity to ask questions and discuss their experiences regarding pregnancy, IFA consumption, any health complaints, and obstacles to maintaining their health. The activity then proceeds to prenatal exercise training. The instructor demonstrates movements step by step, and participants follow along under the facilitator's supervision.

c. Stage 3. Evaluation

Evaluation is conducted through:

- 1) A question-and-answer session.
- 2) Observation of participant engagement.
- 3) Evaluation of participants' ability to perform the exercise movements.
- 4) Assessment of understanding regarding the material.
- 5) Participant feedback on the activity.

RESULTS AND DISCUSSION

Activity Implementation Results

The community service activity titled "Prenatal Exercise Training and Education on Anemia and Iron-Folic Acid Supplements" was conducted at the Melati 1 Integrated Health Post (Posyandu) in Kadu Village, Jatigede District, Sumedang Regency, West Java. Fifteen pregnant women participated in the event. The activity included health education sessions and prenatal exercise training. It was designed to be interactive, ensuring participants not only received theoretical information but also gained hands-on practical experience.

In the initial stage, participants were briefed on the activity's objectives and the material to be presented. An educational session on anemia during pregnancy followed, covering its definition, causes, risk factors, signs and symptoms, consequences, and preventive measures. The subsequent segment focused on Iron-Folic Acid (IFA) supplements. Participants learned about the roles of iron and folic acid during pregnancy, the importance of regular supplement intake, and the correct way to take them. In Indonesia, the Ministry of Health recommends that pregnant women take one IFA tablet daily, totaling a minimum of 90 tablets throughout the pregnancy. After the educational session, participants discussed anemia and IFA supplements and asked questions (Gomes et al., 2022; Putri et al., 2025). This discussion was crucial, as it allowed facilitators to gauge participants' understanding and identify issues they faced in daily life. The final part of the activity was prenatal exercise training. Facilitators demonstrated the movements step by step, and participants followed along. The exercises were conducted with careful attention to each participant's physical capabilities, avoiding movements that could pose risks to pregnant women (*Iron Folic Acid (IFA)* - Google Scholar, 2026; Siekmans et al., 2018).

Outcomes of Anemia Education

The anemia education session taught participants the importance of maintaining hemoglobin levels during pregnancy. Participants learned that the body's iron requirements increase during pregnancy and that iron deficiency is a primary cause of anemia. The WHO states that iron and folic acid supplementation during pregnancy is a public health intervention aimed at reducing the risk of maternal anemia and iron deficiency (James, 2021). The material also emphasized that anemia should not be identified solely based on reported symptoms; prenatal check-ups and indicated laboratory tests remain necessary to objectively assess the mother's condition. Through discussion, participants clarified information about anemia, including potential symptoms during pregnancy and the importance of consulting healthcare professionals.

Outcomes of Education on Iron-Folic Acid (IFA) Tablets

The education on Iron-Folic Acid (IFA) tablets emphasized that taking these supplements is part of the effort to prevent anemia during pregnancy. Participants understood iron's role in hemoglobin formation and the importance of adhering to the prescribed IFA regimen. The Ministry of Health advises pregnant women to take IFA tablets daily, with a minimum intake of 90 tablets throughout the pregnancy (Srivastava et al., 2025). The WHO also recommends routine iron and folic acid supplementation during pregnancy [9]. The session also addressed potential side effects associated with taking IFA tablets, such as nausea or gastrointestinal disturbances. Participants were advised to consult healthcare professionals if they experienced bothersome side effects or difficulties in taking the tablets.

Outcomes of Prenatal Exercise Training

Prenatal exercise training gave participants the opportunity to practice physical activities suitable for their stage of pregnancy. The session began with a warm-up, followed by core exercises and relaxation techniques. Ministry of Health guidelines include physical activity and prenatal exercise in prenatal classes. Activities are tailored to gestational age and the mother's physical condition; for example, prenatal exercise is conducted between the 20th and 32nd weeks of pregnancy, with a focus on participant safety. During the session, the facilitator demonstrates the movements and provides supervision. Participants are instructed not to overexert themselves and to stop the activity if they experience any abnormal symptoms. Thus, the exercise sessions aim not only to promote physical activity but also to educate participants on the importance of exercising safely during pregnancy (Xie et al., 2025).

Participant Participation

Participant participation is a key factor in the success of the activity. Fifteen pregnant women took part in the event, which included health education, discussions, and practical exercise sessions. Interactive methods allowed participants to play an active role in the learning process. The discussions and hands-on practice were intended to help participants relate the health information they received to their own conditions and experiences during pregnancy. If pre-tests and post-tests were used, the evaluation results can be presented as follows:

Table 1. Average Pre-test and Post-test Scores

Evaluation	Average Score	Remarks
Pre-test	55	Knowledge before the educational session
Post-test	90	Knowledge after the educational session
Increasing	35	Difference in scores

Data in Table 1 show a 35-point increase from the pre-test score to the post-test score.

Community service activities combining health education and physical activity offer a comprehensive approach to maternal health. Education regarding anemia and iron-folic acid (IFA) supplements focuses on health promotion and prevention, while exercise sessions provide hands-on experience with safe physical activities suitable for pregnancy. Anemia prevention relies not only on providing iron-folic acid supplements but also on maternal adherence, meeting nutritional needs, attending regular prenatal check-ups, and monitoring health status. The WHO includes iron and folic acid supplementation as part of antenatal care interventions to reduce anemia and iron deficiency.

From an educational perspective, community-level outreach—such as activities at Posyandu (Integrated Health Posts)—holds strategic value by bringing health information closer to pregnant women. These educational activities also create opportunities to strengthen relationships among pregnant women, community health volunteers, and healthcare professionals. Prenatal exercise must be conducted with caution. Because not all pregnant women share the same health status, physical activities must account for gestational age and medical conditions. Ministry of Health guidelines include physical activity and prenatal exercise as key components of "pregnant women's class" programs.

Thus, this initiative is expected not only to increase knowledge during the event but also to foster behavioral changes in daily life—specifically adherence to iron-folic acid supplementation, adoption of a nutritious diet, regular prenatal check-ups, and appropriate physical activity.

Documentation of the activity is provided in Figure 1 below:



Figure 1. Documentation of Activity

CONCLUSIONS AND RECOMMENDATIONS

A community service activity – comprising prenatal exercise training and education on anemia and iron-folic acid (IFA) supplements – was conducted at the Melati 1 Integrated Health Post (Posyandu) in Kadu Village, Jatigede District, Sumedang Regency, with 15 pregnant women participating. The event proceeded successfully. It helped participants understand the importance of preventing anemia, the benefits of taking iron-folic acid supplements, and the value of safe physical activity during pregnancy. Through educational sessions, discussions, demonstrations, and hands-on practice, participants actively engaged in the program. The activity aims to encourage pregnant women to adopt healthy lifestyle habits, take iron-folic acid supplements as recommended by healthcare professionals, attend regular prenatal check-ups, and perform prenatal exercises safely in accordance with their pregnancy conditions.

It is hoped that the community service activities – comprising prenatal exercise training and education on anemia and Iron-Folic Acid (IFA) supplementation – will be sustained through Posyandu programs and prenatal classes. Pregnant women are encouraged to take IFA supplements regularly as directed by healthcare professionals, maintain a nutritionally balanced diet, attend routine prenatal check-ups, and engage in safe physical activity or prenatal exercises suited to their pregnancy status. Posyandu volunteers and healthcare workers are expected to continue providing support, education, and monitoring regarding IFA supplement adherence and the health status of pregnant women. Future activities could incorporate more measurable evaluations – such as pre- and post-tests, monitoring of IFA supplement adherence, and hemoglobin level checks conducted in collaboration with healthcare professionals – to more objectively assess the impact of the program on improving the knowledge and health behaviors of pregnant women.

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