

AYAH SIAGA CEGAH ANEMIA: HUSBAND SUPPORT FOR IRON TABLET ADHERENCE AND FREE HEMOGLOBIN SCREENING AMONG PREGNANT WOMEN IN CIANJUR

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Abstract

Anemia in pregnancy remains a public health problem in Indonesia, and data from the Posyandu of Cipanas Health Center, Cianjur, show that its prevalence rose from 23.3% in 2024 to 26.9% in 2025. Family support, especially from husbands, is important for iron (Fe) tablet adherence and the use of hemoglobin (Hb) examination. This community service activity, “Ayah Siaga Cegah Anemia” (Alert Fathers Prevent Anemia), aimed to improve the knowledge and involvement of pregnant women and their husbands in preventing anemia. It was carried out in July–August 2026 with village midwives and Posyandu cadres. The activity comprised coordination, preparation of leaflets and a banner, health education on anemia, Fe tablet consumption and Hb examination, free Hb screening, discussion, and evaluation by pre-test, post-test, and a satisfaction survey. Thirty participants attended, which was 120% of the target of 25. The mean knowledge score increased from 61.33 to 80.13 (30.65%), the proportion of participants with good knowledge rose from 13.3% to 80.0%, and 93.3% improved their scores. Most participants were satisfied or very satisfied, and none was dissatisfied. Integrating education, husband involvement, and free Hb screening at the Posyandu is an acceptable approach that can be sustained through routine services.

Keywords: Anemia, Health Education, Husband Support, Iron Tablets, Pregnant Women

INTRODUCTION

Pregnancy is a physiological and natural process that involves conception, implantation, maternal adaptation to pregnancy, fetal maintenance, and hormonal changes that together prepare the mother for childbirth (Karami, 2022; Qiao, 2024). Nutrition is one of the main factors influencing pregnancy outcomes. Undernutrition before and during pregnancy can impair the function of the placenta, the main organ supplying nutrients to the fetus, and may lead to complications such as low birth weight (LBW), preterm birth, congenital anomalies, and maternal anemia (Abdilahi et al., 2024; Araujo Costa, 2023; Wang, 2025).

Anemia in pregnancy remains a serious public health problem worldwide and in Indonesia. The World Health Organization (WHO) reports that 41.8% of pregnant women worldwide are anemic, ranging from 31% in South America to 64% in southern Asia (WHO, 2020), and a recent meta-analysis suggests that about one in three pregnant women has hemoglobin deficiency that endangers the pregnancy and the fetus (Karami, 2022). WHO also notes that around 40% of maternal deaths in developing countries are associated with anemia in pregnancy, mostly caused by iron (Fe) deficiency and acute blood loss (Kristiningtyas, 2020).

In Indonesia, the Basic Health Research (Riskesdas) recorded an anemia prevalence of 48.9% among pregnant women in 2018, up from 37.1% in 2013 (Riskesdas, 2018). More recent national data show a prevalence of 27.4% in 2023, which is lower but still above the WHO public health threshold of 20% (Kemenkes RI, 2024). Anemia raises the risk of serious complications, including postpartum hemorrhage, preterm birth, and LBW, which are important causes of maternal and infant morbidity and mortality (Fente, 2025; Wang, 2025). Prepregnancy anemia has also been associated with anemia in children under five, which underlines the importance of nutrition interventions from the preconception period (Wirawan, 2022).

In West Java Province, the number of anemia cases among pregnant women exceeded 80,000 in 2019 and fell to about 63,246 in 2020 (Dinas Kesehatan Provinsi Jawa Barat, 2021). In Cianjur Regency, monthly nutrition reports show that the proportion of pregnant women with Hb < 11 g/dL decreased from 17.7% in 2018 to 12.58% in 2023 (Dinas Kesehatan Kabupaten Cianjur, 2023). At the Posyandu of Cipanas Health Center, however, the trend is the opposite: 28 of 120 pregnant women examined (23.3%) were anemic in 2024, and this rose to 35 of 130

(26.9%) in 2025. Most cases were mild anemia, but moderate anemia was also found, so the condition requires optimal attention and management.

The main problems among pregnant women at the partner Posyandu are therefore the high incidence of anemia, limited knowledge, low adherence to Fe tablet consumption, and suboptimal hemoglobin (Hb) examination. In addition, husbands' support in reminding their wives to take Fe tablets and in accompanying them to Hb examinations still needs to be improved.

To address these problems, the community service team implemented "Ayah Siaga Cegah Anemia" (Alert Fathers Prevent Anemia), which combines health education on anemia, free Hb examination, Fe tablet support, and strengthening of the husband's role. The objectives were to (1) increase the knowledge and awareness of pregnant women and their husbands about anemia prevention, (2) encourage husbands to remind and accompany pregnant women in taking Fe tablets and undergoing Hb examination, (3) support early detection of anemia through free Hb examination at the Posyandu, and (4) provide educational media that midwives and cadres can reuse. This article reports the implementation and results of the activity.

LITERATURE REVIEW

Anemia during pregnancy affects both the mother and the fetus. In the mother, it may lead to abortion, preterm delivery, prolonged labor due to uterine inertia, postpartum hemorrhage due to atony, shock, and intrapartum or postpartum infection. Rosadi et al. (2019) reported a relationship between maternal anemia and abortion, with 65.2% of anemic pregnant women experiencing abortion. Ambarika and Yalestyarini (2021) found a significant relationship between anemia and postpartum hemorrhage ($p = 0.045$), and Rosita et al. (2021) likewise identified anemia as a factor associated with a higher risk of postpartum hemorrhage. Anemic women tolerate blood loss during childbirth less well and are more susceptible to infection because of reduced immunity. In the fetus, anemia is associated with intrauterine growth restriction (IUGR), preterm birth, LBW, and a higher risk of neonatal death (Purwaningtyas & Prameswari, 2020).

Prevention of anemia in pregnancy relies on two complementary strategies. The first is regular consumption of Fe tablets as advised by health workers, which meets the increased iron requirement during pregnancy. The second is periodic Hb examination, which allows anemia to be detected early and followed up according to the mother's condition. Iron-rich foods and supporting nutrients, such as boiled eggs and beetroot, can complement Fe tablets as part of balanced-diet education, but they do not replace them. The Posyandu is a suitable venue for these strategies because it is close to the community and already serves pregnant women.

Adherence to Fe tablets does not depend on the pregnant woman alone. Family support, particularly from the husband as the closest person, can take the form of reminding her to take the tablets regularly, helping to provide nutritious food, accompanying her to antenatal care and Hb examinations, and motivating her to follow health workers' advice. Health education is a main promotion effort to raise knowledge, which is an important factor in shaping health behavior (Notoatmodjo, 2019). Information that is delivered systematically, in simple language, and supported by educational media helps people understand health messages and become aware of the recommended behavior.

Although the regency-level prevalence has declined, the Posyandu-level prevalence is rising, which indicates a need for approaches that reach families directly. This activity therefore places husbands, together with pregnant women, as the main audience and integrates education, free Hb examination, and family support into one Posyandu-based service.

METHOD

This community service activity used a health education approach with a pre-test and post-test evaluation. It was conducted at the Posyandu in the working area of Cipanas Health Center, Cianjur Regency, West Java, from July to August 2026. The partners were the village midwives and Posyandu cadres, who helped with coordination, participant registration, provision of the venue, invitation of participants, and assistance during education and Hb examination. The team consisted of a master's student in midwifery as the main implementer, a supervisor, and a facilitator.

The target audience was pregnant women together with their husbands or companions. The proposal set a minimum target of 25 participants, and 30 invitations were distributed through the village midwives and cadres. The activity followed eight stages: (1) coordination, preliminary survey, and permits; (2) preparation of educational materials and media; (3) invitation and confirmation of participants; (4) health education; (5) free Hb examination; (6) discussion and questions and answers; (7) evaluation using questionnaires and participant feedback; and (8) documentation and reporting.

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The education material covered the definition of anemia, its causes, signs and symptoms, and its impact on the mother and the fetus; the importance of Hb examination; the importance of Fe tablets and how to take them correctly (as advised by health workers, at night or after meals if nausea occurs, with water or a vitamin C drink, and not together with tea, coffee, or milk); prevention of anemia through routine antenatal care, Hb examination, regular Fe tablet consumption, and a balanced diet; and the role of the husband. The media were 30 leaflets and one banner written in simple, communicative language (Image 1).



Image 1. Ayah Siaga Cegah Anemia banner and educational media used in the activity

Knowledge was measured with a pre-test before and a post-test after the education session. The instrument contained 15 statements on anemia, Fe tablets, Hb examination, and the role of the husband, each answered as true, false, or do not know. A correct answer scored 1 and a wrong or “do not know” answer scored 0 (maximum 15). Scores were classified as good (76–100), fair (56–75), and poor (≤ 55). Participant satisfaction was measured with a survey covering the delivery of the material, the method, the media, the Hb examination service, the opportunity for discussion, and the benefits of the activity. The maximum score was 40, and satisfaction was classified as very satisfied (81–100%), satisfied (61–80%), fairly satisfied (41–60%), and less satisfied ($\leq 40\%$). Attendance was recorded on an attendance list.

Data were analyzed descriptively using frequencies, percentages, and mean scores. The change in knowledge was expressed as the difference in mean scores and its percentage of the pre-test mean, and as the proportion of participants whose score increased. The indicators of success were an increase in the mean knowledge score of at least 30%, improved knowledge in at least 80% of participants, and attendance that met the target.

RESULTS AND DISCUSSION

This section presents the implementation of the activity, the change in participants’ knowledge, and participant satisfaction, followed by a discussion of what these findings mean for preventing anemia in pregnancy at the Posyandu.

Implementation of the Activity

The activity was carried out according to the planned stages (Table 1). Thirty participants, consisting of pregnant women and their husbands or companions, attended on the day of implementation. This met the minimum target of 25 participants and equals 120% of the target. Two village midwives and two Posyandu cadres helped with coordination, assistance to participants, and field implementation. Thirty leaflets and one banner were printed, and 30 invitations were distributed through the village midwives and cadres. The free Hb examination was carried out with the involvement of health workers.

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Table 1. Stages of the activity

No.	Activity	Date	Remarks
1	Coordination, preliminary survey, and permits with the village head, RT/RW, village midwife, and cadres	25 July 2026	Completed as planned
2	Preparation of materials and media (leaflets, banner, questionnaires)	25 August 2026	30 leaflets and 1 banner printed
3	Invitation and confirmation of participants (pregnant women and husbands/companions)	25 August 2026	30 invitations distributed through village midwives and cadres
4	Education on anemia, Fe tablet adherence, Hb examination, and husband support	28 August 2026	Completed as planned
5	Free Hb examination for pregnant women	28 August 2026	Conducted with health workers
6	Discussion and questions and answers	28 August 2026	Conducted
7	Evaluation by questionnaire and participant feedback	30 August 2026	Conducted
8	Documentation and reporting	30 August 2026	Completed

A turnout of 120% of the target shows that the activity reached its intended audience and that the Posyandu, midwives, and cadres were able to mobilize both pregnant women and husbands. Image 2 shows an education session at the Posyandu.



Image 2. Education session for pregnant women and their families at the Posyandu

Improvement in Participants' Knowledge

Table 2 shows the distribution of knowledge categories among the 30 participants before and after the education session.

Table 2. Distribution of participants' knowledge before and after education (n = 30)

Knowledge category	Pre-test (n)	Pre-test (%)	Post-test (n)	Post-test (%)
Good (76–100)	4	13.3	24	80.0
Fair (56–75)	16	53.3	6	20.0
Poor (≤ 55)	10	33.3	0	0.0
Total	30	100.0	30	100.0

At the pre-test, only 4 participants (13.3%) had good knowledge. After education, 24 participants (80.0%) were in the good category. Participants with fair knowledge decreased from 16 (53.3%) to 6 (20.0%), and those with poor knowledge decreased from 10 (33.3%) to none. The mean knowledge score rose from 61.33 to 80.13, an increase of 18.80 points or 30.65%, which meets the target of at least 30%. In addition, 28 of 30 participants (93.3%) increased their scores, so the indicator of at least 80% of participants improving was also achieved.

This improvement is consistent with the concept of health promotion, in which education is used to raise knowledge and shape health behavior (Notoatmodjo, 2019). Information that was delivered systematically, in simple

language, and supported by leaflets and a banner probably helped participants understand the material and become more aware of the behavior recommended for preventing anemia. The shift of most participants from the fair and poor categories to the good category indicates that most of them were able to receive and understand the material.

Nevertheless, 6 participants (20.0%) remained in the fair category after education, so the gain was not equal for everyone. Differences in education level, previous experience, exposure to health information, ability to understand the material, and engagement during the session may explain this. Education on anemia prevention should therefore be repeated through Posyandu activities and antenatal services rather than delivered once.

Husband Involvement, Fe Tablets, and Free Hb Examination

The “Ayah Siaga” approach places the husband not only as a companion but also as someone who can remind the mother to take Fe tablets as advised, support antenatal visits, and encourage her to have her Hb checked. Adherence to Fe tablets needs support from the closest environment, so anemia prevention becomes a family responsibility rather than the responsibility of the pregnant woman alone. Including husbands among the participants gave them the same information as their wives and a shared basis for supporting them at home.

The free Hb examination gave pregnant women the chance to learn their own hemoglobin status and to receive relevant information from health workers, which can raise awareness of their health condition. Combining education with Hb examination meant that participants received both knowledge and a direct health service. The present evaluation focused on knowledge and satisfaction; changes in Fe tablet adherence and in Hb levels are not reported here and need to be followed up by midwives and cadres in routine Posyandu services.

Participant Satisfaction

Table 3 presents the satisfaction of the 30 participants with the activity.

Table 3. Distribution of participants' satisfaction with the activity (n = 30)

Satisfaction category	Participants (n)	Percentage (%)
Very satisfied (81–100%)	18	60.0
Satisfied (61–80%)	10	33.3
Fairly satisfied (41–60%)	2	6.7
Less satisfied ($\leq 40\%$)	0	0.0
Total	30	100.0

Most participants were positive about the activity: 18 (60.0%) were very satisfied, 10 (33.3%) were satisfied, and 2 (6.7%) were fairly satisfied. No participant was less satisfied. In total, 28 participants (93.3%) were satisfied or very satisfied, which indicates that the delivery of education, the Hb examination service, and the involvement of participants were well received. High satisfaction is also a supporting sign that the activity matched the needs of the target audience.

Implications, Sustainability, and Limitations

The leaflets and banner can be reused by midwives, cadres, and health workers in later counseling sessions, and the collaboration between the Health Center, midwives, cadres, pregnant women, and husbands can form a base for continued education, monitoring of Fe tablet consumption, and Hb examination. The findings have limits: the activity was a single session, knowledge was measured only shortly after education, and there was no comparison group. The results therefore show short-term improvement in knowledge and acceptance of the activity, not lasting behavior change or a reduction in anemia.

CONCLUSION

The “Ayah Siaga Cegah Anemia” activity at the Posyandu of Cipanas Health Center reached 120% of its participation target and improved participants' knowledge about anemia prevention: the mean score increased by 30.65%, the proportion with good knowledge rose from 13.3% to 80.0%, and 93.3% of participants improved. Most participants were satisfied or very satisfied. These results show that combining health education, the involvement of husbands, and free Hb examination is feasible and well accepted at the Posyandu level.

For future service, education on anemia prevention, free Hb examination, and Fe tablet distribution should be carried out routinely at the Posyandu with the support of midwives and cadres. Pregnant women are encouraged

to take Fe tablets as advised and to attend antenatal care regularly. A follow-up plan should also measure Fe tablet adherence, Hb levels, and husband support over a longer period.

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