



## Overcoming anemia in prospective brides and grooms as an effort to prevent stunting

Adriana Palimbo<sup>1\*</sup>, Ika Melinda Bamegawati<sup>2</sup>, Dede Mahdiyah<sup>3</sup>, Anita Herawati<sup>4</sup>,  
Luthfia Hidayati Rahman<sup>5</sup>, Yuni Riska Nur Fariana<sup>5</sup>, Arfiah<sup>6</sup>

<sup>1</sup>Department of Midwifery, Faculty of Health, Sari Mulia University, Banjarmasin, Indonesia

<sup>2</sup>Department of Midwife Profession, Faculty of Health, Sari Mulia University, Banjarmasin, Indonesia

<sup>3</sup>Department of Pharmacy, Faculty of Health, Sari Mulia University, Banjarmasin, Indonesia

<sup>4</sup>Department of Health Promotion, Faculty of Health, Sari Mulia University, Banjarmasin, Indonesia

<sup>5</sup>Department of Midwifery Diploma, Faculty of Health, Sari Mulia University, Banjarmasin, Indonesia

<sup>6</sup>Community Preceptor and Practitioners, Community Health Center of Pekauman, Banjarmasin, Indonesia

\*Corresponding author: [palimboadriana00@gmail.com](mailto:palimboadriana00@gmail.com)

### ARTICLE INFO

#### Article history:

Received 19 April 2024

Revised 01 June 2024

Accepted 14 June 2024

#### Keywords:

Stunting

Prevention

Knowledge of anaemia

Prospective bride

Blood supplement tablet

### ABSTRACT

**Background:** Before the wedding, the majority of brides to be, still lack knowledge about reproductive health in families. After marriage, pregnancies are often not planned properly. This can have negative impacts such as the risk of pregnancy complications, disability, and even death of the mother and baby.

**Case presentation:** In Banjarmasin, the number of prospective brides and grooms who suffer from anaemia is 7.9% and malnutrition is 11.2. Increasing a person's knowledge and attitudes regarding anaemia prevention by providing behavior and compliance in consuming iron supplement tablets or blood supplement tablets can reduce the risk of pregnancy complications and prevent stunting. Community handling was carried out together through the Midwifery Project implemented in January 2024 at the Pekauman Community Health Center. The instrument used leaflets, banners, and control cards to monitor the consumption of blood supplement tablets.

**Discussion:** Information and educational counseling and demonstrations were used as a learning model for seven pairs of prospective brides or grooms or a total of 14 subjects. This tool uses leaflets, banners, and control cards to monitor the consumption of blood supplement tablets.

**Conclusion:** This project has been proven to increase the bride and groom's knowledge about anaemia, its prevention and treatment, and increased compliance with taking blood supplement tablets regularly as recommended by health services.

This is an open-access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



## 1. Introduction

Prospective brides are a strategic target group in efforts to improve health before



pregnancy and are also the key actors in the reproductive process of the next generation. Before marriage, many prospective brides do not have enough knowledge and information about reproductive health in a family, so after marriage pregnancies are often not planned well and are not supported by optimal health status. This can of course have negative impacts such as the risk of disease transmission, pregnancy complications, disability, and even maternal and infant death (Rahmah et al., 2022; Rahmanda et al., 2023). Providing counseling, information, and education regarding reproductive health to prospective brides is very necessary to ensure that each prospective bride has sufficient knowledge in planning pregnancy and preparing for healthy families (Puspitasari et al., 2020; Teguh et al., 2021).

Anaemia is still a serious problem that continues throughout a woman's life cycle. Anaemia is a condition where the number of red blood cells or haemoglobin is less than normal. Anaemia is a condition where there is a decrease in haemoglobin concentration. Normal haemoglobin levels in men are 13-13,7 gr/dl, while in women it is 11,5-12 gr/dl (Lee and Plesa, 2022). Anaemia is caused by a lack of macro and micronutrients, namely protein, iron and folic acid. Women who suffer from anaemia during pregnancy are at high risk of giving birth to low birth weight (LBW) and have an increased risk of death for both mother and baby during the birth process. Lack of iron consumption is caused by several factors including lack of knowledge, food availability and wrong eating habits (Pramoni et al., 2023; Abu-Baker et al., 2021). The cause of high rate of anaemia in women of childbearing age is usually due to lack of knowledge about anaemia, deficiency of iron, folic acid, vitamin B12 and vitamin A. Signs and cases of anaemia in prospective brides can cause fatigue, decreased physical capacity, weak body, and reduced productivity, and condition will become more severe if a prospective bride is pregnant, gives birth and during postpartum period. According to Abaane et al., (2023); and Anlaaku & Anto, (2017), this global health issue has a multifaceted impact on maternal well-being and contributes significantly to maternal mortality. The factors influencing the prevalence, aetiology, and severity of anaemia are diverse, with socioeconomic status playing a crucial role. The World Health Organization (WHO) estimates that over 30% of the world's population is affected by anaemia, with it being a major contributor to maternal mortality, accounting for 20 to 40% of maternal deaths.

Cases of anemia in prospective bride and groom couples are common. However, collective treatment and application to the community is a solution that needs to be improved



to gain a better understanding of health. Ultimately, increasing public knowledge will help in preventing and reducing the risk of various diseases, including pregnancy complications and stunting.

## **2. Case presentation**

Prospective brides participating in health services in Banjarmasin City in 2022 are 1061 grooms (31.2%) and 3400 brides (100%). The incidence of brides with anaemia (7.9%) and malnutrition (11.2%). Data and information on prospective brides from three sub-districts at the Community Health Center of Pekauman show that 5.5% of brides suffer from chronic energy deficiency and 26% of cases of anaemia (Dinas Kesehatan Kota Banjarmasin, 2022). Increasing a person's knowledge and attitudes regarding anaemia prevention by providing behavior and compliance in consuming iron supplement tablets or blood supplement tablets can reduce the risk of pregnancy complications and prevent stunting. Community handling was carried out together to 14 pairs of prospective brides and grooms through the Midwifery Project implemented in January 2024. Handling of community cases is carried out through collaboration between a group of Sari Mulia University lecturers and Maternal and Child Health Service practitioners at the Community Health Center of Pekauman. The method used is a thematic meeting which includes providing information, education, and counselling (IEC) about pregnancy anemia, necessary nutrition, and compliance with the consumption of blood supplement tablets. A demonstration was also added to show how and when in real-time to take the blood supplement tablets. The supporting instruments use slides, leaflets, flip sheets, banners and control cards to monitor blood supplement tablet consumption. This project has received ethical approval from the Research Ethics Committee of Sari Mulia University.

## **3. Discussion**

### **Solutions offered**

One of the problems in the community is that prospective brides often ignore the symptoms and signs of anemia. Another thing is that knowledge of the public is still lacking in understanding and even realizing that it is important to prevent anaemia during the pre-conception period. Therefore, solutions implemented in this practice include providing IEC about anaemia to prospective brides using leaflets as well as discussions and providing control cards or reminders to drink blood supplement tablets. Where, through an educational approach, it can produce community behaviour that is needed to improve nutrition in 1000



first day of birth for anaemic brides and efforts to reduce stunting rates in South Kalimantan.

According to a community service study conducted by Palimbo et al., (2023), there was an increase in knowledge, attitudes and compliance of pregnant women and their husbands in carrying out blood supplement tablets control card activities in the working area of Salam Babaris Community Health Center, Tapin Regency. In line with research by Indrayoni & Megayanti, (2022), an educational approach to preventing anaemia will facilitate the initiation of beliefs, awareness and attitudes or behavioural tendencies, a person's experience in consuming blood supplement tablets. The initiation of behavior to consume blood supplement tablets based on knowledge and attitudes can take a relatively long time.

### Implementation stage

Table 1. Arrangement of events for the implementation stage for prospective

Activity	Intervention	Method/Media	Output
Open Activities	Officially opening event by Head of Kelayan Selatan Subdistrict; remarks by vice rector Sari Mulia University, and remarks deputy head of Community Health Center of Pekauman; Introduction to participants, practical students, supervisors and community service team	Host and moderator	Realization of readiness, commitment, & coordination of health program
Socialization	Explains the contents of counseling, objectives, activity stages and session closes with an assessment	Power-point slides, banners, and leaflets were shared to participants	Participants showed interest and initial understanding in knowing purpose of anaemia prevent program
Information, Counseling, Education (IEC)	Starting session presenting counseling and educational material about anaemia in pregnant women, prevent and treatment, increasing compliance with regular blood supplement tablets consumption, efforts to reduce cases of stunting; Invite participants to ask questions if	Lectures, questions and answers, discussions using PPT slides, flip sheets and blood supplement tablets control cards	Participants showed active participation in IEC presentation on anaemia and stunting through education on consuming blood supplement tablets



Activity	Intervention	Method/Media	Output
Demonstration	there is an explanation that they do not understand Demonstrate how to drink blood supplement tablets and practice filling out the blood supplement tablets consumption control card; Brides pay attention to how to take blood supplement tablets and grooms practice how to fill on blood supplement tablets control card by ticking column according to date or time given	Flip sheets and blood supplement tablets control cards; artificial tablet or placebo (harmless, not taken)	Participants practice skills in applying demonstration results they have obtained
Evaluation	Closing the activity through reflection with short questionnaire. Participants Answer "True or False" option from the questions listed below	Paper and pen	The level of knowledge participants was mostly good (80%)

Overcoming anemia, even preventing it from pre-conception period is certainly closely related to stunting. Strategic efforts to reduce stunting are included in a series of integrated national programs with maternal and child health services at community health centers both across health sector programs and across related sectors, supported by collaboration between health teams. And then, as shown by research, anaemia in pregnant women is also a determinant that is related and has a significant influence on each other's incidence of stunting.

According to the study results Lathifah et al., (2024), the nutritional status of pregnant women suffering from caloric energy deficiency was 84.2%, (p-value  $0.002 < 0.05$ ). Meanwhile, anaemia on the risk of stunting is 89.7% (p-value  $0.000 < 0.05$ ). This is in line with study by Hestiyana & Juliana, (2023), which has a significant correlation between history of CED and stunting (p-value  $0.000 < 0.05$ ) and there is also a correlation between history of anaemia and incidence of stunting (p-value  $0.000 < 0.05$ ). Anaemia and stunting are two key global health problems that often occur together, causing serious impacts on human growth and development, especially children, adolescents and women in the reproductive period. Two situations and conditions that are related to nutritional deficiencies, especially iron. Anaemia can worsen stunting because iron is very important in the growth and development of human



cells. This emphasizes the importance of implementing community service practices as downstream research results. The history of emergence anaemia is an ecosystem cycle that starts from adolescence, prospective brides, pre-conception, and pregnancy up to 1000 first day of birth.

### **Outcomes achieved**

1. Increasing knowledge of prospective brides about anemia, prevention and treatment.
2. Increased skills in demonstrating how to take blood supplement tablets regularly as recommended.
3. Increased understanding of the use of blood supplement tablet control cards.

### **Follow-up plan**

This Midwifery Project program can be continued and strengthened by providing training to health cadres about IEC anaemia and using control cards to monitor compliance with blood supplement tablet consumption as well as carrying out initial anaemia screening for women of childbearing age adolescents, and brides who are in Community Health Center of Pekauman working area. This activity is also intended to provide an active role for families and communities to recognize early signs of anaemia if it occurs in women of childbearing age and report it to midwives and other health teams. It is expected that providing reminder cards or blood supplement tablet-consuming regulators can make to bride and their families aware importance of regularly consuming iron supplement tablets.

### **4. Conclusion**

This program is a strategic health promotion effort to reduce the risk of pregnancy complications and prevent stunting by treating anemia in prospective brides and grooms. The method of organizing IEC can increase changes in knowledge and skills for participants. The health team at the community health center can apply a blood supplement table control card for prospective brides and grooms who suffer from anemia. This Midwifery Project activity can be an illustration of how health intervention practices in the community are in accordance with existing problems and needs.

### **5. Acknowledgements**



We would like to thank all leaders rectorate of Sari Mulia University and the Institute for Research and Community Service as funders in 2024 who have funded community service activities.

## 6. Conflict of interest

All authors declare no conflict of interest.

## 7. References

- Abaane, D. N., Adokiya, M. N., & Abiuro, G. A. (2023). Factors associated with anaemia in pregnancy: A retrospective cross-sectional study in the Bolgatanga Municipality, northern Ghana. *PloS one*, 18(5), e0286186. <https://doi.org/10.1371/journal.pone.0286186>
- Anlaakuu, P., & Anto, F. (2017). Anaemia in pregnancy and associated factors: a cross sectional study of antenatal attendants at the Sunyani Municipal Hospital, Ghana. *BMC research notes*, 10(1), 402. <https://doi.org/10.1186/s13104-017-2742-2>
- Abu-Baker, N. N., Eyadat, A. M., & Khamaiseh, A. M. (2021). The impact of nutrition education on knowledge, attitude, and practice regarding iron deficiency anaemia among female adolescent students in Jordan. *Heliyon*, 7(2), e06348. <https://doi.org/10.1016/j.heliyon.2021.e06348>
- Dinas Kesehatan Kota Banjarmasin. (2022). The health profiles of Banjarmasin City [in Indonesia]. <https://dinkes.banjarmasinkota.go.id/p/buku-profil-kesehatan-kota-banjarmasin.html>.
- Indrayoni, P., & Megayanti, S. D. (2022). Communication, Information and Education Iron Supplementation and Hemoglobin. *Jurnal Abdimas ITEKES Bali*, 1(1), 26–31. <https://doi.org/10.37294/jai.v1i1.400>
- Lathifah, N., Kusumawati, L., Palimbo, A., & Jannah, F. (2024). The correlations between the determinants of women's health during pregnancy to the incidence of stunting. *Health Sciences International Journal*, 2(1), 12-23. <https://hsij.anandafound.com/journal/article/view/17>
- Lee, D. T., & Plesa, M. L. (2022). Anemia. In *Family Medicine: Principles and Practice* (pp. 1815-1829). Cham: Springer International Publishing



- Palimbo, A., Azhimia, F., Nurngafiah, A., Puteri, D. I., Marlana, L., Faizah, M. N., Nawiza, R. A., Wahyuni, R., & Mulia, S. (2023). Strengthening the continuous integration model through multi-professional collaboration: Community midwifery project at Salam Babaris Health Center. *Integration Proceeding*, 1(1), 1–11. Retrieved from <https://ocs.unism.ac.id/index.php/integration/article/view/1089>
- Pramoni, N. G. A. K. D., Tanziha, I., Briawan, D., & Khomsan, A. (2022). The efficacy of combined nutrition education and nutritional supplementation on nutritional status of prospective brides to prevent stunting in newborns. *International Journal Of Community Medicine And Public Health*, 10(1), 134–141. <https://doi.org/10.18203/2394-6040.ijcmph20223537>
- Puspitasari, N., Sumarmi, S., & Sulistyorini, Y. (2020). Health Problems of Prospective Brides in Rural Area of East Java, Indonesia. *Indian Journal of Public Health Research & Development*, 11(1). <https://doi.org/10.37506/v11i1%2F2020%2Fijphrd%2F194033>
- Rahmah ,N., & Kurniawati, W. (2022). Relationship between Marriage Readiness and Pregnancy Planning among Prospective Brides. *Journal of Public Health Research*, 10(1\_suppl). <https://doi.org/10.4081/jphr.2021.2405>
- Rahmanda, J. M. F., Maryanah, & Mulyati, S. (2023). The Effectiveness of Premarital Health Counseling on the Attitude of Prospective Brides in Preparing for a Healthy Pregnancy. *International Journal of Science and Society*, 5(4), 551-559. <https://doi.org/10.54783/ijsoc.v5i4.816>
- Rusmina, Hestiyana, N., & Juliana, F. (2023). An Analysis History Pregnancy to Incident Stunting in Sungai Pinang Public Health Centre. *Integration Proceeding*, 1(1), 145–150. Retrieved from <https://ocs.unism.ac.id/index.php/integration/article/view/973>
- Teguh, M., Ida, R., Puspa, R., & Avilla, E. (2021, November). Health communication efforts to prevent stunting in the pandemic era in Trenggalek Regency. In *3rd Jogjakarta Communication Conference (JCC 2021)* (pp. 28-34). Atlantis Press. <https://doi:10.2991/assehr.k.211121.008>



