

Counseling On Iron Deficiency Anemia In Pregnant Women As An Effort To Prevent Stunting In Sukasirnarasa Village

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Abstract.

Stunting and anemia are quite serious public health problems, especially in areas with high poverty rates and limited access to health services. Several contributing factors include lack of knowledge about nutrition, unbalanced diets, and limited access to health services. One of the factors that contributes to stunting is anemia in pregnant women. Given these conditions, efforts are needed to increase public understanding of anemia and stunting and prevent stunting from pregnancy. These efforts were realized through health education activities carried out in September 2023 in Sukasirnarasa Village, Sumedang Regency, West Java. Participants were 10 posyandu cadres and pregnant women. The service activity was in the form of education about iron deficiency anemia. The success of this activity was evaluated through measuring achievement indicators using a pretest and posttest with a true-false test type. The evaluation results showed an increase in participant understanding by 15.7% after participating in the education. This increase indicates that health education activities regarding stunting prevention through anemia prevention in pregnant women have been successfully implemented and achieved the expected goals..

Keywords: Anemia; iron deficiency; stunting and counseling.

I. INTRODUCTION

Stunting is closely related to inadequate nutritional intake during a child's early growth period, including while still in the womb. Children who experience stunting are at risk of experiencing impaired physical growth and stunted brain development, which can affect intelligence and competitive ability. In addition, nutritional problems also increase susceptibility to infectious and non-communicable diseases, and can reduce productivity as adults [1][2]. Pregnant women who experience malnutrition or severe malnutrition have a seven times greater risk of giving birth to stunted children [3][4]. One of the nutritional problems in pregnant women is anemia, a condition in which hemoglobin levels in the first and third trimesters are less than 11.0 g/dl, and less than 10.5 g/dl in the second trimester [5][6]. Anemia occurs when the number of red blood cells or oxygen-carrying capacity is insufficient to meet physiological needs [7]. During pregnancy, anemia can cause serious complications to the death of the mother and fetus [8]. Other impacts of anemia include increased risk of premature birth, low birth weight, complications during delivery, chronic fatigue, shortness of breath, hypertension, palpitations, sleep disorders, preeclampsia, and the risk of bleeding before and during delivery which can result in maternal death [9][10]. In many countries, stunting and anemia remain significant public health problems, especially in areas with high poverty rates and limited access to quality health services. Factors such as lack of knowledge about nutrition, unbalanced diets, and limited access to health services are the main causes of this problem.

Based on data from the Ministry of Health in 2015, the national maternal mortality rate reached 305 per 100,000 people. This shows that the Millennium Development Goals (MDGs) target in 2015 has not been achieved, so in 2020 it will continue with the Sustainable Development Goals (SDGs) which target a reduction in maternal mortality to 70 per 100,000 people [11][12]. Anemia in pregnant women is still one of the health problems that receives attention in Indonesia [13], including in the city of Medan. This condition can have serious impacts on the health of the mother and fetus, such as increasing the risk of premature birth, low birth weight, and other pregnancy complications. Based on data from the Indonesian Ministry of Health, the prevalence of anemia in pregnant women in Indonesia is still relatively high, with varying figures in each

region. One of the main causes of anemia is low iron intake and the lack of knowledge of pregnant women about the importance of a healthy diet and consumption of iron supplements during pregnancy [17]. Education is one of the effective strategies in increasing awareness of pregnant women regarding the importance of preventing anemia. Proper education can help mothers understand the causes, symptoms, and how to prevent anemia by increasing consumption of iron-rich foods and compliance in taking iron tablets [18]. Research conducted by Rengganis et al.

(2023) showed that pregnant women who received education related to nutrition and health tended to be more aware of the importance of maintaining adequate nutritional intake so that they could reduce the risk of anemia during pregnancy. Efforts to increase understanding of anemia and stunting, as well as steps to prevent stunting, play an important role in improving community welfare. Appropriate research and prevention programs are needed to address this problem. By understanding the factors that cause stunting and anemia and identifying effective prevention strategies, we can create a healthier and more sustainable society. Knowledge is one of the factors that influences the formation of healthy behavior in society [19]. In theory, a person's knowledge will influence their attitudes and actions. Therefore, innovation is needed in the method of delivering information so that the public understands the dangers of anemia, stunting, and how to prevent it. One effort that can be made is through a health education program, which aims to influence behavioral changes, especially in terms of increasing knowledge [20]. As a form of real contribution, the UKI FK PkM Team implemented a health education program on Iron Deficiency Anemia for pregnant women in Sukasirnarasa Village, Rancakalong District, Sumedang Regency, West Java. This program aims to increase public understanding of anemia and stunting, as well as prevent stunting from pregnancy.

II. METHODS

This community service activity was carried out with the aim of providing education through health counseling on iron deficiency anemia in pregnant women. This counseling was held in September 2023, at the Sutra V Posyandu, Sukasirnarasa Village, Rancakalong District, Sumedang Regency, West Java. In this counseling, the media used included PowerPoint presentations (PPT), laptops, educational videos, and leaflets. This activity was held thanks to the collaboration between lecturers, students and the Sumedang Regency government, specifically Rancakalong District.

Lecturers and students acted as speakers, accompanied by representatives of midwives from the Sukasirnarasa Poskesdes. The targets of this health counseling were pregnant women in the Sukasirnarasa Village area, village health cadres, and 10 pregnant women's companions. To measure the effectiveness of the counseling, an evaluation technique was used in the form of a test. The test was carried out before the counseling (pretest) and after the counseling was completed (posttest). The form of questions used is a true-false test with the same number of 7 questions in the pretest and posttest. After data collection, the test results were corrected and given a score for each participant. The pretest and posttest scores were then compared and the average was calculated to determine changes in participants' understanding after attending the counseling.

III. RESULT AND DISCUSSION

Educational activities about anemia in pregnant women and the importance of consuming Fe tablets were carried out at Posyandu Sutra V, Sukasirnarasa Village, in September 2023. This activity aims to increase pregnant women's understanding of the risk factors for anemia, its impact on maternal and fetal health, and prevention efforts. During the activity, participants received interactive educational materials that included explanations about the importance of iron during pregnancy, sources of iron-rich foods, and the benefits of consuming Fe tablets recommended by health workers. The enthusiasm of pregnant women in participating in the educational session was very high. They not only listened attentively but were also actively involved in the discussion and question and answer session. Many participants asked questions about the dosage of Fe tablets, how to deal with side effects such as nausea and constipation, and alternative foods that can increase hemoglobin levels in the blood. This shows that pregnant women have a great interest in increasing awareness of their pregnancy health, especially in efforts to prevent anemia.



Fig 1. Counseling on Iron Deficiency Anemia in Pregnant Women

The counseling activity began with the distribution of pretest questions and ended with the distribution of posttest questions. Both types of questions were given to all health counseling participants. The form of the pretest and posttest questions was a true-false test consisting of 7 statements. These statements include: 1) Anemia is a condition in which the number of red blood cells is below normal; 2) Normal hemoglobin levels in pregnant women are 12 gr/dl; 3) Anemia is not related to stunting; 4) Pregnant women are advised to consume at least 60 iron-enriched tablets during pregnancy; 5) Fish is a food source rich in iron; 6) Stunting is a growth and development disorder in children due to malnutrition and long-term infection; and 7) Efforts to prevent stunting begin during pregnancy. The results of the pretest and posttest can be seen in Table 1 below.

Table 1. Pretest and Posttest Results of Health Education Participants on Iron Deficiency Anemia

Participant	Pre-test	Post-test	Score Difference	Interpretation
IH1	85.7	100	14.3	Increase
IH2	100	100	0	Stay on
IH3	57.1	85.7	28.6	Increase
IH4	100	100	0	Tetap
IH5	42.8	71.4	28.6	Increase
IH6	71.4	85.7	14.3	Increase
IH7	71.4	100	28.6	Increase
IH8	57.1	100	48.3	Increase
IH9	85.7	71.4	-14.3	Decrease
IH10	71.4	85.7	14.3	Increase

Based on Table 1, out of a total of 10 health counseling participants, 7 participants (70%) experienced an increase in test scores, 2 participants (20%) obtained the same score, and 1 participant (10%) actually experienced a decrease in score between pretest and posttest. Overall, the average pretest score was 74.3, while the average posttest score increased to 90. This shows an increase in the average score of 15.7% from pretest to posttest. The increase in scores for each participant and the overall average score indicate an increase in knowledge among counseling participants. With this positive change, it can be concluded that the counseling activity has succeeded in achieving its goal, namely increasing public understanding of anemia and stunting so as to prevent stunting from pregnancy. With better knowledge, pregnant women can take appropriate action during pregnancy to prevent anemia, which has the potential to cause stunting in children at birth and during growth and development. This is in line with Priya's view [17] which states that knowledge plays an important role in influencing a person's attitudes and behavior. When the knowledge possessed is good, then the attitude and behavior also tend to be positive. Conversely, if the knowledge is inadequate, it will have an impact on making inappropriate decisions and can be detrimental.

IV. CONCLUSION

Based on the explanation that has been explained, it can be concluded that the health education activities on preventing stunting through preventing anemia in pregnant women went well and can be considered successful. The success of this education activity is shown by the achievement of the main objective, namely increasing public understanding of anemia and stunting so that it can prevent stunting from pregnancy. This is reflected in the increase in knowledge of the education participants, which is 15.7% based on the comparison of the average pretest and posttest scores.

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REFERENCES

- [1] D. A. Widyaningrum, D. A., & Romadhon, "Riwayat Anemia Kehamilan Dengan Kejadian Stunting Pada Balita Di Desa Ketandan Dagangan Madiun," *J. Medica Majapahit*, Vol. 10, No. 2, Pp. 86–99, 2018
- [2] J. B. Salulinggi, A., Asmin, E., Titaley, C. R., Bension, "Hubungan Pengetahuan Dan Keptuhan Ibu Hamil Konsumsi Tablet Tambah Darah Dengan Kejadian Anemia Di Kecamatan Leitimur Selatan Dan Teluk Ambon," *J. Epidemiol. Kesehat. Komunitas*, Vol. 6, No. 1, Pp. 229–236, 2021..
- [3] Evani A, Kamila F, Rochmano Fp, Al-Muswah Ai, Syafitri An, Hikmawati I, Hasanah Nz, Rezeki S, Yh Af, Yunieswati10 W, Suryaalamshah11 Ii. Penyuluhan Gizi Untuk Meningkatkan Pengetahuan Mengenai Pencegahan Anemia Pada Ibu Hamil. *Jurnal Abmas Negeri (Jagri)* Vol. 2022 Dec;3(2).
- [4] Yunadi Fd, Faizal Ia, Septiyaningsih R. Pemberdayaan Kader Dalam Upaya Pencegahan Dan Penanggulangan Anemia Ibu Hamil. *Jurnal Pengabdian Masyarakat Al-Irsyad (Jpma)*. 2020 Dec 20;2(2):144-53.
- [5] A. B. Liyew, A. M., Tesema, G. A., Alamneh, T. S., Worku, M. G., Teshale, "Prevalence And Determinants Of Anemia Among Pregnant Women In East Africa; A Multi-Level Analysis Of Recent Demographic And Health Surveys," *Plos One*, Vol. 16, No. 4, P. E0250560, 2021, Doi: <https://doi.org/10.1371/journal.pone.0250560>
- [6] Wulandari A, Siwi Rp, Retnaningtyas E, Mukarromah A, Lende Fk. Edukasi Pencegahan Anemia Pada Ibu Hamil. *Jurnal Inovasi Dan Pengabdian Masyarakat Indonesia*. 2023 Oct 30;2(4):11-4.
- [7] Ashar M, Mulyana Yp, Triwulandari N, Alumi N, Kn Rp, Gangga11 Ej, Muarif12 F, Alin D. Penyuluhan Kesehatan: Cegah Stunting Dengan Bebas Anemia Pada Ibu Hamil Di Desa Donorojo. *Jurnal Abdimas Phb* Vol. 2023;6(4).
- [8] Nadia N, Ludiana L, Dewi Tk. Penerapan Penyuluhan Kesehatan Terhadap Pengetahuan Ibu Hamil Tentang Anemia Pada Kehamilan Diwilayah Kerja Puskesmas Yosomulyo Metro Tahun 2021. *Jurnal Cendikia Muda*. 2021 Dec 29;2(3):359-66.
- [9] Abas I, Ramadhan K, Manggasa Dd, Rantesigi N. Edukasi Pencegahan Anemia Pada Ibu Hamil: Anemia Prevention Education Among Pregnant. *Madago Community Empowerment For Health Journal*. 2021 Oct 31;1(1):26-31..
- [9] Simarmata, Vidi Posdo Ahapta; Suryanegara, Wiradi. The Knowledge Relationship Between Mothers Who Have Children Aged 2-5 Years About Anemia Toward Stunting Incidence. *Journal Of Drug Delivery And Therapeutics*, 2021, 11.4: 170-179.
- [10] Suryanegara, Wiradi, Et Al. Public Health Services Through The Active Participation Movement To Eliminate Stunting Towards A Healthy Indonesia. *International Journal Of Community Service*, 2025, 5.1: 37-42.
- [11] Simarmata, Vidi Posdo Ahapta; Patriawati, Keswari Aji. A Descriptive Study On Stunting In Toddlers & Contributing Factors In Cibungur Village, Sumedang District, Indonesia. *Journal Of Complementary And Alternative Medical Research*, 2024, 25.7: 58-72..
- [12] Sari F, Sinaga R, Sinuhaji Ln, Marliani M. Peningkatan Kesadaran Melalui Pendekatan Edukasi Dalam Pencegahan Anemia Pada Ibu Hamil Di Praktik Bidan Eka Kota Medan Tahun 2024. *Jurnal Pengabdian Kolaborasi Dan Inovasi Ipteks*. 2025 Feb 20;3(1):253-8..
- [13] Siagian, Carmen, Et Al. Supplementation Of Moringa (Moringa Oleifera) Leaf Capsules On Hemoglobin Levels In Women Of Reproductive Age With Iron Deficiency Anemia In Malaka Regency, Nusa Tenggara Timur, Indonesia. *Bali Medical Journal*, 2023, 12.3: 2383-2385.
- [14] Kemenkes, Hasil Riset Kesehatan Dasar (Riskesdas) Tahun 2018. Jakarta: Badan Penelitian Dan Pengembangan Kesehatan Kementerian Kesehatan Republik Indonesia., 2018.
- [15] Sormin, Elferida; Siagian, Carmen; Nadeak, Bernadetha. Analysis Of Iron (Fe) Content In Breast Milk Of Breastfeeding Mothers With Level Anemia Normal, Mild And Moderate..

- [16] L. Fakhriyah, Athiyya, N., Jubaidah, & Fitriani, “Penyuluhan Hipertensi Melalui Whatsapp Group Sebagai Upaya Pengendalian Hipertensi,” **J. Pengabd. Masyarakat Berkemajuan**, Vol. 4, No. 2, Pp. 435–442, 2021.
- [17] D. K. P. G. Priya, S. Asokan, R. Janani, “Effectiveness Of School Dental Health Education On The Oral Health Status And Knowledge Of Children: A Systematic Review,” **Indian J.Dent.Res.** Vol.30,No.3,Pp.437–449, 2019..
- [18] Pujiastutik Ye, Refina Rc, Firdausi A, Yuliana Et. Sosialisasi Anemia Kehamilan Pada Ibu Hamil Trimester Ii Dan Iii. **Journal Of Community Engagement In Health**. 2019 Sep 5;2(2):1-4.
- [19] Yuliawati E, Veriyani Ft. Penyuluhan Bahaya Anemia Pada Ibu Hamil. **Jurnal Altifani Penelitian Dan Pengabdian Kepada Masyarakat**. 2022 Jul 26;2(4):387-93.
- [20] Retnaningtyas E, Siwi Rp, Wulandari A, Fauzianty R, Muflikah L, Putri A, Suharti E, Wahyuni S. Upaya Peningkatan Pengetahuan Ibu Hamil Melalui Pendidikan Kesehatan Mengenai Anemia Kehamilan. **Panrannuangku Jurnal Pengabdian Masyarakat**. 2022;2(1):14-8.