ADHERENCE TO IRON CONSUMPTION IN PREGNANCY

Nur Alviatussyamsiah, Aulia Putri Sandy, Ferina [1)]
[1)]Bandung Midwifery Department, Bandung Health Polythecnic
[1)] Email : nur@student.poltekkesbandung.ac.id

Abstract, **Background:** Anemia during pregnancy has significant adverse effects for the mother and fetus which can lead to premature birth, postpartum hemorrhage, poor cognitive development, and low birth weight for the baby. Data shows that 53.4% of pregnant women in Africa, 36.1% in Ethiopia, and 37.1% in Indonesia are anemic. Iron supplementation given during pregnancy is an effective way to reduce the incidence of anemia in pregnant women. However, in practice pregnant women often do not adherence with the rules for consuming iron tablets. There are several factors that impact the adherence of pregnant women, including the level of education, family support, gestational age at the first pregnancy visit, and knowledge about anemia
Methods: This review article is a literature study from seven articles regarding adherence to iron consumption in pregnancy research journals from Ethiopia, Tanzania, Uganda, and Indonesia. Articles obtained by accessing sciencedirect, elsevier, pubmed, and google search engines with keywords compliance, anemia, iron supplementation, pregnancy.
Results: Based on the results of studies from several literatures, strengthening and promoting health education, increasing awareness by counseling and monitoring the administration of iron tablets in health facilities is very important to increase the level of adherence to iron supplementation in pregnant women.
Conclusion: Based on the results of studies from several literatures, strengthening and promoting health education, increasing awareness by counseling and monitoring the administration of iron tablets in health facilities is very important to increase the level of adherence to iron supplementation in pregnant women.

Key words: adherence, anemia, iron supplementation, pregnancy

Background

Anemia affects more than two billion people, 30-50% of whom come from developing countries. Pregnant women are a vulnerable group who are at high risk of developing anemia.[1] Anemia during pregnancy has significant adverse effects on both mother and fetus that can lead to premature birth, postpartum hemorrhage, poor cognitive development, and low birth weight. 53.4% of pregnant women in Africa, 36.1% in Ethiopia, 37.1% in Indonesia are anemic.[2]

In Uganda, anemia in pregnancy is estimated to affect about 33% of pregnancies. In Ethiopia anemia contributes to 18% of perinatal deaths, 19% of preterm births, and 12% of low birth weight. As for Tanzania, the burden of iron deficiency occurs in about 57% among pregnant women and 46% among breastfeeding mothers. Similarly, the prevalence of anemia among women of reproductive age between 15 and 49 years is 45% in Tanzania. Iron supplementation during pregnancy is a cost-effective strategy to reduce iron deficiency anemia among pregnant women in developing countries.

The World Health Organization (WHO) recommends giving women a standard dose of 60mg Iron + 400µg folic acid daily during pregnancy.[3] However, poor adherence to iron supplements has limited its effectiveness in reducing maternal anemia as evidenced by the high incidence of iron deficiency anemia. in Tanzania, Uganda, Ethiopia, and Indonesia.[4]

This article review aims to see a description of maternal compliance in consuming iron supplementation. So that health workers get information about how maternal adherence to iron consumption is to set strategies in order to increase maternal compliance in iron consumption so that the prevalence of iron deficiency anemia can

decrease. which in turn will encourage a decrease in the prevalence of anemia. [5]

Method

This article is a literature study of seven articles on adherence to iron consumpt ion in pregnancy research journals from Ethiopia, Tanzania, Uganda, and Indonesia. Articles obtained by accessing sciencedirect sites, elsevier, pubmed, and google search engines with keywords compliance, anemia, iron supplementation, and pregnancy.

Result and Discussion

Table 1. Article Characteristic

Author	Title	Journal and sample characteristic	Result
Lyobia, WB, et al., 2020	Adherence to Iron-Folic Acid Supplementation and Associated Factors among Pregnant Women in Kasulu Communities in North-Western Tanzania	Internasional Journal of Reproductive Medicine n = 320 Sample : pregnant woman and mothers of children age 0-6 months	Adherence to iron-folic acid supplementation during pregnancy was low. Strengthening systems for creating reminding mechanism, raising community awareness through educational programs to pregnant women and health providers could improve adherence to IFAS.
Nasir, B. B. Et al., 2020	Adherence to iron and folic acid supplementation and prevalence of anemia among pregnant women attending antenatal care clinic at Tikur Anbessa Specialized Hospital, Ethiopia	PLoS One Journal n = 250 Sample : pregnant woman who were selected using sistematic random sampling form antenatal care (ANC)	Counseling about IFAS and anemia prevention and promoting the benefits of early ANC visit are recommended to improve adherence to IFAS.
Triharini M, et al., 2018	Adherence to iron supplementation amongst pregnant mothers in Surabaya, Indonesia: Perceived benefits, barriers and family support	Internasional Journal of Nursing Sciences n = 102 Sample :pregnant woman who attended check-ups at the Puskesmas and received iron suplementation	Perceived benefits, perceived barriers and family support are related to adherence to iron supplementation; thus, developing good perceptions and family support should be properly promoted.
Kiwanuka TS, et. al, 2017	Adherence to iron supplements among women receiving antenatal care at Mulago National Referral Hospital, Uganda-cross-sectional study	BMC Research Notes n = 70 Sample : pregnant women	The factors that were independently associated with adherence were: attendance of ANC four times or more, having more than 2 weeks supply of iron supplements, prior health education and informal education of the women. There's a need to ensure adequate drug supplies in health facilities and provision of adequate information about the supplements especially the benefits, side effects and how mothers can cope with these
Fouelifack FY, et. al, 2019	Assessment of adherence to iron supplementation among pregnant women in the yaounde gynaeco-obstetric and paediatric hospital	PanAfrican Medical Journal n = 304 Sample : pregnant women	to improve adherence to antenatal iron supplementation, it is important to increase communication for behavior change and counseling before or during antenatal care. Forgetting being the main reason for non-adherence, women should keep their iron in a place of easy access.
Molla T, et. al, 2019	Factors associated with adherence to iron folate supplementation among pregnant women in West	BMC Research Notes n = 348 Sample : Pregnant women	preventing prenatal anemia, improving knowledge of women about anaemia and iron folate supple- mentation, and

	Dembia district, northwest Ethiopia: A cross sectional study		increasing ANC services are essential to increase adherence
Assefa, H, et. al., 2019	Magnitude and factors associated with adherence to iron and folic acid supplementation among pregnant women in Aykel town, Northwest Ethiopia	BMC Pregnancy and ChildBirth n = 418 Sample : pregnant women	knowledge about benefits of the supplement and not facing any problem in the health facilities during Iron and Folic Acid tablet collection were factors associated with Iron and Folic Acid supplementation adherence.

Low compliance is influenced by several factors, including the presence of side effects on the digestive system due to consuming iron such as nausea, vomiting, diarrhea, to constipation. In addition, inadequate tablet preparation (including limited resources to purchase tablets), inadequate patient counseling by health care providers regarding the use of tablets, poor use of prenatal health care services, lack of patient knowledge and/or fears about tablets and community beliefs, attitudes and practices that influence women's perceptions of the use of iron tablets.

There are several other factors that cause non-compliance in pregnant women including internal factors and external factors. One of the internal factors is the level of education and knowledge of pregnant women about anemia. Education level showed a significant relationship with adherence to iron supplementation during pregnancy. The fact that education will increase women's access to information through reading and understanding the benefits of iron supplementation and the possible consequences of anemia during pregnancy.[1 4]

In addition, time to start the ANC visit was associated with adherence to the iron supplementation program. This study revealed that women who initiate ANC visits in the first trimester are 3.7 times more likely to adhere to an iron supplementation program compared to those who initiate ANC visits in the second and third trimesters.[6] Pregnant women who initiate early ANC services may have more access to health care providers and better knowledge of the perceived risks and benefits of iron supplementation to prevent anemia during pregnancy.[6] Pregnant women who have had fewer than four ANC visits and are anemic during pregnancy, have poor knowledge about anemia and iron-folate supplementation. Therefore, prevention of prenatal anemia, increasing maternal knowledge about anemia and iron supplementation, as well as increasing the coverage of ANC services are very important to increase adherence to iron supplementation.[7]

Family support also affects compliance in taking iron supplements. Family support can be provided in the form of emotional, physical, instrumental and informational support. These include receiving advice regarding the use of iron tablets, receiving support or praise when taking iron tablets regularly, receiving help with household chores, facilitating nutritious food and reminding the schedule for taking iron supplements.[2]

Thus, the problem of non-adherence to iron supplement consumption can be overcome through effective counseling during antenatal care visits. Suggest strategies to remember their iron tablet consumption such as putting the tablet where it can be seen every day, linking it to natural events such as taking an iron tablet every sunrise or sunset, lunch or dinner. In addition, taking tablets together with other foods to minimize side effects can also increase adherence to iron supplementation.[8]

Conclusion

Strengthening and promoting health education, raising awareness and avoiding disappointing conditions in health facilities during administration of iron tablets are very important to increase and strengthen the low level of adherence to iron supplementation in pregnant women. In addition, it is important to intensify communication and counseling for behavioral changes before and during pregnancy thoroughly about the side effects and the importance of iron during pregnancy so as to increase adherence which is beneficial for the prevention of anemia and its complications. Then, pregnant women should be advised to store iron tablets in a place that is easily visible because forgetting is the main reason for skipping iron tablets consumption.

References

1. Lyoba WB, Mwakatoga JD, Festo C, Mrema J, Elisaria E. Adherence to Iron-Folic Acid Supplementation and Associated Factors among Pregnant Women in Kasulu Communities in North-Western Tanzania.

Int J Reprod Med. 2020;2020:1-11. doi:10.1155/2020/3127245

2. Triharini M, Nursalam, Sulistyono A, Adriani M, Armini NKA, Nastiti AA. Adherence to iron supplementation amongst pregnant mothers in Surabaya, Indonesia: Perceived benefits, barriers and family support. *Int J Nurs Sci*. 2018;5(3):243-248. doi:10.1016/j.ijnss.2018.07.002
3. World Health Organization. *Guideline: Daily Iron and Folic Acid Supplementation in Pregnant Women*.; 2012.
4. Kiwanuka TS, Ononge S, Kiondo P, Namusoke F. Adherence to iron supplements among women receiving antenatal care at Mulago National Referral Hospital, Uganda-cross-sectional study. *BMC Res Notes*. 2017;10(1):1-6. doi:10.1186/s13104-017-2834-z
5. Assefa H, Abebe SM, Sisay M. Magnitude and factors associated with adherence to Iron and folic acid supplementation among pregnant women in Aykel town, Northwest Ethiopia. *BMC Pregnancy Childbirth*. 2019;19(1):1-8. doi:10.1186/s12884-019-2422-4
6. Nasir BB, Fentie AM, Adisu MK. Adherence to iron and folic acid supplementation and prevalence of anemia among pregnant women attending antenatal care clinic at Tikur Anbessa Specialized Hospital, Ethiopia. *PLoS One*. 2020;15(5):1-11. doi:10.1371/journal.pone.0232625
7. Molla T, Guadu T, Muhammad EA, Hunegnaw MT. Factors associated with adherence to iron folate supplementation among pregnant women in West Dembia district, northwest Ethiopia: A cross sectional study. *BMC Res Notes*. 2019;12(1):1-6. doi:10.1186/s13104-019-4045-2
8. Fouelifack FY, Sama JD, Sone CE. Assessment of adherence to iron supplementation among pregnant women in the yaounde gynaeco-obstetric and paediatric hospital. *Pan Afr Med J*. 2019;34:1-8. Doi:10.11604/pamj.2019.34.211.16446