

Implementation and Evaluation of Iron Deficiency Anemia

Content in Prenatal Education Classes

Meredith Morris BSN, DNP Candidate and Jasmine Walker BSN, DNP Candidate

Faculty Advisors Dr. Kate Fouquier and Dr. Margaret Harvey

College of Nursing - The University of Tennessee Health Science Center - Memphis, TN

Purpose

The purpose of this quality improvement project is to provide and increase educational awareness and knowledge regarding iron deficiency anemia (IDA) in pregnant patients at an urban primary care clinic in Memphis, TN.

Specific Aims

- Decrease the number of individuals with IDA in pregnancy and occurrences of IDA-related complications during pregnancy.
- Introduce cost-effective approaches to decrease or eradicate IDA-related complications in pregnancy.



Fig 1. IDA control and prevention promotes healthier pregnancies

Background

- The World Health Organization (WHO) estimates the prevalence of anemia complicating pregnancies to be more than 40%. Pregnant women with IDA who reside in low- and middle-income countries are at a higher risk of low birth weight, preterm birth, perinatal mortality, and neonatal mortality.
- Memphis is known as an urban, predominantly Black city where studies have shown the prevalence of Black gravidas was >15% in the 1st trimester, around 20% in the 2nd trimester, and close to 50% in the 3rd trimester. Introducing IDA educational sessions can beneficially impact Memphis maternal and infant mortality rates as well as the number of complications and interventions related to IDA.

Methods

Study sites. We collaborated with the Midwives at Regional One Health Center's (ROH) Hollywood Primary Care Clinic in Memphis, TN.

Study Design. We will educate 25 participants using a correlational, quantitative research approach.

Inclusion Criteria. All women will consent to participate in the study in their 1st trimester (before 13 weeks gestation), be 18 or older, and have no known blood disorders or medical conditions that interfere with liver function.

Interventions. The participants will be administered a pretest before reviewing the IDA content. After completing the pretest, the researchers will review an IDA infographic during a 10-minute educational session with the participants. After reviewing the infographic, the participants will take the post-test (Fig. 2). The researchers will also provide each participant with a personal copy of the IDA infographic (Fig. 3).

Data Collection

- In addition to pre- and post-test scores, we will also obtain demographic data listed in the Excel table below (Fig. 4).
- Statistical analysis will be done using descriptive and basic inferential statistics using Excel and Intellectus®.

Subject ID	Median Pretest Score	Median Posttest Score	Age	Race	Para	Gravida	HTN	Diabetes	Iron deficiency Anemia	Prior Education on IDA & Pregnancy
1										
2										
3										

Fig 4. Demographic data collection

Implications for Practice

- We anticipate that the pre-test/post-test will show a significant correlation between IDA educational sessions and increased awareness. The results will show the benefits of education in increasing awareness to help prevent pregnant women in Memphis, TN, from developing IDA and related complications.

Prenatal Iron Deficiency Education and Pregnancy Pretest/Posttest

Rate the following:
Strongly Disagree (SD) Disagree (D) Not sure (NS) Agree (A) Strongly Agree (SA)

1. I know what iron deficiency anemia is
SD D NS A SA
2. I know what role iron plays in blood cell production
SD D NS A SA
3. I can describe the symptoms of iron deficiency anemia
SD D NS A SA
4. I know what lab tests are drawn to check for iron deficiency anemia
SD D NS A SA
5. I understand why iron supplements are important during pregnancy
SD D NS A SA
6. I am knowledgeable of resources available in obtaining iron supplements
SD D NS A SA

Fig 2. Iron deficiency posttest



Fig 3. IDA infographic

References

- Abujilban, S., Hatamleh R., & Al-Shuqerat, S. (2018). The impact of a planned health educational program on the compliance and knowledge of Jordanian pregnant women with anemia. *Women & Health, 59*(7), 748–759. <https://doi.org/10.1080/03630242.2018.1549644>
- Araban, M., Baharzadeh, K., & Karimy, M. (2017). Nutrition modification aimed at enhancing dietary iron and folic acid intake: An application of health belief model in practice. *European journal of public health, 27*(2), 287–292. <https://doi.org/10.1093/eurpub/ckw238>
- Darwish, A. M., Fouly, H. A., Saied, W. H., & Farah, E. (2018). Lactoferrin plus health education versus total Dose Infusion (TDI) of lowmolecular weight (LMW) iron dextran for treating iron deficiency anemia (IDA) in pregnancy: A randomized controlled trial. *The Journal of Maternal-Fetal & Neonatal Medicine, 32*(13), 2214–2220. <https://doi.org/10.1080/14767058.2018.1429396>
- Goonewardene, I. M., & Senadheera, D. I. (2017). Randomized control trial comparing effectiveness of weekly versus daily antenatal oral iron supplementation in preventing anemia during pregnancy. *Journal of Obstetrics and Gynaecology Research, 44*(3), 417–424. <https://doi.org/10.1111/jog.13546>
- Mahundi, P., Pillay, K., & Wiles, N. (2021). Barriers to optimal iron supplementation by pregnant women attending the Mutare City Clinic, Manicaland, Zimbabwe. *Africa Journal of Nursing & Midwifery, 23*(1), 1–17. <https://doi.org/10.25159/2520-5293/16948>
- McCormack, F., & Drolet, J. (2012). Socio-ecological factors affecting pregnant women's anemia status in Freetown, Sierra Leone. *American Journal of Health Education, 43*(6), 327–340. <http://www.aahperd.org.ezproxy.uthsc.edu/aahe/publications/ajhe/author-abstracts.cfm>
- Rahman, M. M., Abe, S. K., Rahman, M. S., Kanda, M., Narita, S., Bilano, V., Ota, E., Gilmour, S., & Shibuya, K. (2016). Maternal anemia and risk of adverse birth and health outcomes in low- and middle-income countries: Systematic review and meta-analysis 1,2. *The American Journal of Clinical Nutrition, 103*(2), 495–504. <https://doi.org/10.3945/ajcn.115.107896>
- Sunuwar, D. R., Sangroula, R. K., Shakya, N. S., Yadav, R., Chaudhary, N. K., & Pradhan, P. (2019). Effect of nutrition education on hemoglobin level in pregnant women: A quasiexperimental study. *PloS one, 14*(3), e0213982. <https://doi.org/10.1371/journal.pone.0213982>