

Adherence to Iron and Folic Acid Supplementation Among Pregnant Women Attending Antenatal Clinics: A Cross-Sectional Study

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Abstract

Background

Iron deficiency anaemia remains one of the most common nutritional disorders among pregnant women worldwide. Daily iron and folic acid supplementation (IFAS) is recommended to prevent maternal anaemia and improve pregnancy outcomes. However, adherence to supplementation continues to be a challenge despite national and international recommendations.

Objectives

To assess adherence to iron and folic acid supplementation among pregnant women attending antenatal clinics and to evaluate their knowledge and attitude regarding supplementation.

Methods

A quantitative descriptive cross-sectional study was conducted among 92 pregnant women attending antenatal clinics. Participants were selected using convenience sampling. Data were collected using a structured questionnaire comprising socio-demographic characteristics, adherence, knowledge, and attitude. Descriptive statistics including frequency and percentage were used for analysis.

Results

Among the 92 participants, **89.1%** demonstrated good adherence, while **10.9%** had poor adherence. Most participants possessed good knowledge (**72.8%**) and a positive attitude toward IFAS. Counselling by healthcare providers, regular ANC visits, and adequate tablet supply were associated with better adherence. Side effects and forgetfulness remained common barriers.

Conclusion

Overall adherence to IFAS was satisfactory. Continuous counselling, management of side effects, and reminder-based interventions are recommended to further improve compliance.

Keywords: Iron supplementation, Folic acid, Pregnancy, Antenatal care, Adherence, Maternal health

Introduction

Iron deficiency anaemia is a major public health concern during pregnancy and contributes significantly to maternal and neonatal morbidity and mortality. Pregnancy substantially increases iron requirements because of expansion of maternal blood volume and fetal growth. Inadequate iron intake may result in maternal anaemia, fatigue, preterm birth, low birth weight, and postpartum complications. Folic acid supplementation is equally essential because it prevents neural tube defects and supports rapid fetal growth.

The World Health Organization recommends daily iron and folic acid supplementation for all pregnant women. In India, supplementation is provided free of cost under national maternal health programmes. Despite these initiatives, adherence remains inconsistent due to gastrointestinal side effects, poor awareness, misconceptions, forgetfulness, inadequate counselling, and socioeconomic barriers.

Assessing adherence and identifying influencing factors are essential for strengthening antenatal care services and improving maternal health outcomes.

Objectives

Primary Objective

- To assess adherence to iron and folic acid supplementation among pregnant women attending antenatal clinics.

Secondary Objectives

- To assess knowledge regarding iron and folic acid supplementation.
- To assess attitude regarding iron and folic acid supplementation.

Materials and Methods

Study Design

- Quantitative descriptive cross-sectional study.

Study Setting

- Selected antenatal clinics.

Study Population

- Pregnant women attending antenatal clinics.

Sample Size

- 92 pregnant women.

Sampling Technique

- Non-probability convenience sampling.

Inclusion Criteria

- Pregnant women attending ANC clinics

- Receiving iron and folic acid tablets
- Willing to participate

Exclusion Criteria

- Seriously ill mothers
- Women unable to respond

Data Collection Tool

A structured questionnaire consisting of:

- Socio-demographic variables
- Obstetric variables
- Adherence questionnaire
- Knowledge questionnaire
- Attitude scale

Data Analysis

- Data were analyzed using descriptive statistics including frequencies and percentages.

Ethical Considerations

- Ethical approval was obtained from the Institutional Ethics Committee. Written informed consent was obtained from all participants before data collection. Confidentiality and anonymity were maintained throughout the study.

Results

Socio-demographic Characteristics

Among the 92 respondents:

- 48.9% were below 20 years of age.
- 35.9% were illiterate.
- 80.4% were homemakers.
- 47.8% were in the first trimester.
- 62.0% were primigravida.
- 65.2% had attended four ANC visits.

Adherence to IFAS

Good adherence was observed among **89.1%** of participants, whereas **10.9%** demonstrated poor adherence.

Most women:

- received counselling (93.5%)
- had adequate tablet supply (90.2%)
- understood the importance of supplementation (89.1%)

Major barriers included:

- forgetfulness
- irregular timing of tablet intake
- gastrointestinal side effects

Knowledge

Knowledge assessment revealed:

- Good knowledge – 72.8%
- Fair knowledge – 21.7%
- Poor knowledge – 5.4%

Most respondents knew the importance of folic acid, daily tablet intake, and prevention of maternal complications. Knowledge gaps existed regarding anaemia prevention and symptoms of iron deficiency.

Attitude

A highly positive attitude was observed.

Nearly all respondents agreed that:

- iron tablets prevent anaemia
- tablets benefit both mother and baby
- supplementation should continue throughout pregnancy
- benefits outweigh side effects

Discussion

- The present study demonstrated a high adherence rate (89.1%), which is higher than that reported in several previous studies. Effective antenatal counselling, adequate supplement availability, and frequent ANC visits may explain this finding.
- Knowledge regarding IFAS was generally satisfactory, suggesting that health education provided during ANC visits contributes positively to awareness. Nevertheless, gaps regarding anaemia prevention indicate the need for more focused education.
- Although attitudes toward supplementation were overwhelmingly positive, practical barriers such as forgetfulness and gastrointestinal side effects continue to reduce adherence among a small proportion of women.
- These findings support previous research highlighting counselling, maternal education, and regular ANC attendance as important predictors of adherence.

Conclusion

- The study concludes that pregnant women attending antenatal clinics demonstrated satisfactory adherence to iron and folic acid supplementation. Good knowledge, positive attitude, and regular antenatal counselling contributed to high compliance. However, side effects and forgetfulness remain barriers that require targeted interventions.
- Strengthening counselling services, ensuring uninterrupted tablet availability, and introducing reminder-based adherence strategies may further improve maternal health outcomes.

Recommendations

- Strengthen counselling during each ANC visit.
- Introduce reminder systems such as SMS or mobile applications.
- Improve management of gastrointestinal side effects.
- Conduct larger multicentre studies.
- Implement educational interventions to improve adherence.

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Conflict of Interest

- The authors declare no conflict of interest.

Funding

- No external funding was received for this study.

Ethical Approval

- Ethical approval was obtained from the Institutional Ethics Committee before commencement of the study, and written informed consent was obtained from all participants.

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