International Journal of Nursing Sciences 5 (2018) 243–248

HOSTED BY

Contents lists available at ScienceDirect

International Journal of Nursing Sciences

journal homepage: http://www.elsevier.com/journals/international-journal-of-nursing-sciences/2352-0132

Original Article

Adherence to iron supplementation amongst pregnant mothers in Surabaya, Indonesia: Perceived benefits, barriers and family support

Mira Triharini [a, b, *], Nursalam [a], Agus Sulistyono [c], Merryana Adriani [d], Ni Ketut Alit Armini [a], Aria Aulia Nastiti [a]

[a] Nursing Faculty, Universitas Airlangga, Surabaya, Indonesia
[b] Doctoral Student's Health Science of Public Health Faculty, Universitas Airlangga, Surabaya, Indonesia
[c] Dr. Soetomo General Hospital Surabaya, Indonesia
[d] Public Health Faculty, Universitas Airlangga, Surabaya, Indonesia

ARTICLE INFO

Article history:
Received 26 January 2018
Received in revised form
4 July 2018
Accepted 5 July 2018
Available online 5 July 2018

Keywords:
Adherence
Anaemia
Family support
Iron
Pregnancy

ABSTRACT

Background: Anaemia during pregnancy is a major nutritional problem that can cause preterm delivery and low birth weight. Adherence to iron supplementation can prevent anaemia during pregnancy. However, adherence to iron supplementation remains a problem in many countries.
Objective: This study aimed to identify the correlations of the perceived benefits and perceived barriers of and family support for iron supplementation with adherence to this practice amongst pregnant woman in Surabaya, Indonesia.
Methods: A cross-sectional study was carried out on 102 pregnant women who attended check-ups at the Puskesmas and received iron supplementation. Data were collected using questionnaires.
Results: Perceived benefits ($r = 0.334$, $P = 0.001$), perceived barriers ($r = -0.294$, $P = 0.003$) and family support ($r = 0.263$, $P = 0.008$) were noted to be correlated with adherence to iron supplementation amongst pregnant woman in Surabaya, Indonesia.
Conclusion: 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.

1. Introduction

The maternal mortality rate (MMR) in Indonesia is high. In 2007, the number of maternal deaths was 228 per 100,000 live births. This value increased to 305 per 100,000 live births in 2015. The most common cause of maternal death was bleeding (30.3%). Other causes were hypertension (27.1%) and infection (7.3%) [1]. Disorders experienced by pregnant women are associated with anaemia during pregnancy. Anaemia during pregnancy adversely impacts on pregnancy, childbirth and the post-partum period [2]. Anaemia during pregnancy is also harmful to infants and increases the risk of preterm delivery, low birth weight and perinatal mortality [3].

Anaemia in pregnancy is a condition defined by haemoglobin levels below 110 g/L in the first and third trimesters or a haemoglobin level below 105 g/L in the second trimester [4]. A total of 53.4% of the pregnant women in Africa [5], 36.1% in Ethiopia [6], 37.1% in Indonesia according to Riskesdas [7] and 25.3% in East Java [8] were anaemic. Secondary data show that in 2015, 16 of the 62 Puskesmas in Surabaya city were recorded with anaemia incidence rates amongst pregnant women of over 10% [9].

Various health-promotion efforts have been implemented by health workers in Indonesia to reduce the incidence of anaemia amongst pregnant women. Haemoglobin examination is performed in pregnant women in their first visits to the Puskesmas and is repeated in the third trimester amongst women at risk of anaemia for labour preparation. Health education has routinely instructed pregnant women on the importance of increasing iron intake through food and reducing the consumption of food that can inhibit iron absorption, such as phytate, phosphate and tannin [4].

The behaviour of pregnant women in preventing anaemia is influenced by many factors. Perceived benefits, perceived self-efficacy, interpersonal influences and commitment to a plan of action affect nutrition intake [10]. Some of the factors inhibiting the

* Corresponding author. Nursing Faculty, Universitas Airlangga, Surabaya, Kampus C Universitas Airlangga, Mulyorejo Sreet, Surabaya, 60115, Indonesia.
E-mail address: mira-t@fkp.unair.ac.id (M. Triharini).
Peer review under responsibility of Chinese Nursing Association.

https://doi.org/10.1016/j.ijnss.2018.07.002

adherence to iron supplementation relate to a misunderstanding of the benefits of iron supplementation and the unaffordable access to such supplementation [11]. The perceptions of anaemia in pregnancy also affect women's behaviours towards its prevention [12].

The side effects of the iron tablets decrease maternal compliance. Iron supplements may cause gastrointestinal discomfort, such as nausea after taking the supplements, and hence promote poor compliance [13]. A false perception on iron tablets affecting maternal behaviour also remains. Moreover, the fear of side effects that may harm the health of the infants affects adherence [14]. Families play a role in providing support for mothers in taking iron supplement tablets. Family support can be provided in the form of emotional, physical, instrumental and informational support [15].

To date, research has barely explored the influences of internal and external factors on pregnant women's adherence to iron supplementation. In this regard, this study aimed to identify the correlations of the perceived benefits, perceived barriers and family support with adherence to iron supplementation.

2. Materials and methods

2.1. Research design and setting

This descriptive cross-sectional study was conducted between November and December 2016 on 102 women. The population included pregnant women attending antenatal care at the Puskesmas Sidotopo Wetan and Tanah kali Kedinding in Surabaya, East Java, Indonesia.

2.2. Sample

A total of 102 women satisfied the inclusion criteria and comprised the sample population. The inclusion criteria covered the pregnant women who were receiving iron supplementation from Puskesmas. The exclusion criteria included the pregnant women with complications or severe concomitant diseases that require specific medical treatment.

2.3. Measurement tool

The data collection tool was a questionnaire on sociodemographic characteristics, perceived benefits, perceived barriers and adherence to iron supplementation. The sociodemographic characteristics questions asked about age, parity, education and income.

The questionnaires were developed by researchers with items based on the theory of prevention of maternal anaemia and the health-promotion model (HPM) [3,16]. Whilst preparing the questionnaire contents, the researchers were assisted by two experienced nurses in the field of maternity nursing. Translation was accomplished by a qualified translator from Indonesia and proofreader from United Kingdom. Before use in data collection, the compiled questionnaires were tested for validity and reliability on 17 pregnant women who attended antenatal care at the Community Health Centre of Tanah Kali Kedinding Surabaya.

The perceived benefit questions inquired about the benefits of iron supplementation for babies and mothers during pregnancy and delivery. The questionnaire consists of six questions. The Cronbach's α was 0.787. The six questions featured a Likert scale with the following options: strongly agree, slightly agree, slightly disagree and strongly disagree. The total scores for this section were in the range of 6–24, with higher scores indicating higher levels of perceived benefits.

The perceived barrier questions asked about boredom, side effects and forgetting. The questionnaire consisted of six questions with a Cronbach's α of 0.728. The six questions used a Likert scale with the following options: always, often, sometimes, rarely and never. The total scores for this section were in the range of 0–24, with lower scores indicating higher levels of perceived barriers.

The family support questions inquired about receiving advice from family on any issue related to taking iron tablets, receiving support or praise for taking iron tablets regularly, receiving help with household chores, receiving funds for nutritional food and receiving support in the form of checking in on the pregnancy regularly. The questionnaire consisted of five questions with a Cronbach's α of 0.762. The five questions used a Likert scale with the following options: always, often, sometimes, rarely and never. The total scores for this section were in the range 0–20, with lower scores indicating lower levels of family support.

The questions on adherence to iron supplementation focused on three items: regularity, time and absorption process. The questionnaire consisted of four questions with a Cronbach's α of 0.761. Each item was converted into a Likert scale with the following options: always, often, sometimes, rarely and never. The total scores for this section were in the range 0–16, with higher scores indicating higher levels of adherence to iron supplementation.

2.4. Data analysis

Spearman's rho values were used to determine the correlations of perceived benefits, perceived barriers and family support with adherence to iron supplementation. Descriptive statistics including frequencies, percentages, means and standard deviations were used to describe sociodemographic characteristics, perceived benefits, perceived barriers, family support and adherence to iron supplementation. In all statistical analyses, a P-value < 0.05 was considered significant. All data were analysed using the SPSS software.

3. Results

3.1. Sociodemographic characteristics

The mean age of the women in the study was 28.44 years (SD = 5.27 years). Most of the women ($n = 42$, 41.2%) were primigravids. More than three-quarters of the women ($n = 84$, 82.4%) finished secondary education. Two-thirds of the women ($n = 65$, 63.7%) possessed an income below 3 million rupiah per month (Table 1).

3.2. Perceived benefits

The majority of the participants strongly agreed that regular iron supplementation causes the foetus to grow normally ($n = 56$, 54.9%), does not tire mothers quickly ($n = 63$, 61.8%), promotes the pregnancy health ($n = 72$, 70.6%), ensures smooth labour ($n = 52$, 51.0%), reduces the risk of postnatal infection ($n = 49$, 48.0%) and

Table 1
Sociodemographic characteristics in participants ($n = 102$).

Variable	n (%)	Variable	n (%)
Age(yrs)		Education	
<25	23 (22.6)	Elementery	15 (14.7)
25–35	68 (66.7)	Secondary	84 (82.4)
>35	11 (10.8)	University	3 (2.9)
Parity		Income(Rupiah)	
1	42(41.2)	< 3 million	65(63.7)
2	16(15.7)	≥ 3 million	37(36.3)
3	12(11.8)		
4	2(2.0)		

*Note:*13,000 rupiah equal to 1 US $.