

Awareness and Practice of Reproductive age Group Women Regarding Anemia, Iron Rich Diet and its Impact on Hemoglobin Levels at a Tertiary Care Hospital

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Abstract

To assess the level of knowledge about the causes, prevention, and treatment of iron deficiency anaemia among women of childbearing age in Chennai, Tamil Nadu, India. The survey was performed by using semi structured pre-selected questionnaires at a tertiary care hospital Chennai, Tamilnadu from February 2021 to March 2021. The study included women between the ages of 18 and 45 who did not have any pre-existing medical or gynecological issues. Iron Deficiency Anemia (IDA) was diagnosed in 200 women. 64.5% of women (n=200) were aware of the term IDA, with the proportion decreasing by 8.5 percent in the 30-45 age group. The majority of the women were aware that iron is present in their diet and that it is important for their health. Women with children, as well as working women, had a better understanding of the IDA. In our analysis, we observed that sociodemographic factors such as education level, economic status, and iron consumption have a major impact on the haemoglobin condition of the current study. The knowledge of Iron Deficiency Anemia showed in study population have largest ratio in the age interval between 25-35 Years. When compared with homemakers the employed women showed statistically significant p-value <0.001, the awareness of IDA 80% in employed women. It was found that 59% of women who took regular iron supplements with food. Awareness of IDA is directly related to a society's educational and social status, and it has been found to increase over time with exploration and access to media and health care facilities. In terms of nutritional facts, younger women are more concerned about their own health and also more cautious about their expected infants than older women.

Keywords: Awareness, Prevention, IDA, Diet, Iron supplement.

Introduction

Anemia has become a major public health problem in both developed and developing countries, with serious consequences for human health as well as economic growth. (Nivedita & Shanthini, 2016). It is estimated that 42% in pregnant ladies aged 18–45 years and 30% in non-pregnant ladies, with Africa and Asia accounting for over 85% in high-risk groups of maternal deaths due to anemia. It is a major cause of the rise in incidence and death among pregnant women, especially in developing nations. (Choudhary et al., 2020). According to the World Health Organization (WHO), iron deficiency is the most common nutritional problem in the country, affecting 25% of the world's population, particularly women of reproductive age. (Rehan et al., 2015). During pregnancy, several cases of pregnant women diagnosed with iron deficiency have a poor outcome. It contributes significantly to maternal mortality. To prevent anaemia in maternity, the World Health Organization (WHO) recommends intermittent iron and vitamin B complex medications for sick women living in areas where the prevalence of anaemia is 20% or higher, and daily iron and vitamin B complex supplementation for pregnant women as part of postpartum care. (El-Zeftawy et al., 2018). The Indian government suggests 100 mg of elemental iron+500 ug of folic acid for prophylactic supplementation for at least 100 days beginning during the third trimester, and doubling this dose for anaemia treatment. (Rahman et al., 2019) Iron deficiency awareness and understanding among pregnant women are significantly low, and it may be a serious cause of gestational issues. So, right awareness and academic programs concerning the diet and its pattern throughout the gestation will scale back the prevalence rate of anemia. (Balasubramanian et al., 2016).

The following are the study's objectives:

1. To determine the level of IDA awareness among women of reproductive age.
2. To identify the correlation between iron deficiency and a dietary habit.
3. To assess the percentage of reproductive age group women having good awareness and practice regarding anaemia and iron rich foods.

Methods

Study Design and Participants:

The study was designed to be cross-sectional, and it was carried out at a tertiary care medical college and hospital in Chennai, Tamil Nadu. The study lasted 6 months, beginning with data collection and ending with analysis and discussion.

Methodology:

The descriptive survey method was used to select the participants. A woman having previous record of medical or surgical related problems was excluded in the study. (Srinivas & Mankeshwar et al., 2015). Assuming 95% confidence limit with a 5% allowable error, with the formula $(4pq/L^2)$, the sample size is, $N=198$. To account for non-response rate about 10% a total 208 subjects with inclusion criteria were chosen for the study. Before proceeding with the study, a pilot study testing was done and necessary changes were made in the study and pre tested, pre validated, semi structured questionnaires comprising demographic characteristics such as age, education, marital status, socioeconomic status, number of children and along with questions which were needed to determine the awareness and knowledge regarding anemia and the iron rich diet was distributed and collected. The confidentiality of the information shared and anonymity were maintained.

Data Collection:

The data collected was entered in Microsoft Office Excel sheet (MS Excel). Before collecting the data, an informed written consent was obtained. The women were informed that they could leave the study at any time without penalty or loss of benefit. (Kumar et al., 2019) Before beginning the study, the institutional ethical committee gave its approval. After completion of data collection, the frequencies of all variables were checked for completeness at regular intervals.

Analysis:

The data was then analysed using the SPSS software version 12. The quantitative methods were displayed using tables and figures. The Chi square test was used to predict the relationship between categorical variables. The P value was calculated at 95% confidence interval with significant levels $p < 0.05$.

Results

In our study we have surveyed 200 participants. The study sample of characteristics was shown in Table-1. From the results, awareness of IDA showed in the study population has the largest ratio in the age interval between 25-35 Years (90%, 60n). When compared with homemaker and employed women showed statistically significant p-value < 0.001 , the aware of IDA 80% in employed women (Table-1).

Table 1: Distribution of the examined women based on their demographic characteristics (N = 200).

Age group	Iron Deficiency Anemia (IDA)		P-value*
	Awareness (N%)	Non-awareness (N%)	

18-25	61(0.50%)	60(0.49%)	0.005
25-35	54(90%)	6(10%)	<0.001
35-45	14(73.6%)	5(0.26%)	0.004
Marital status			
Married	54(83.0%)	11(16.9%)	<0.001 0.05
Unmarried	76(56.2%)	59(43.7%)	
Occupation			
Employed	66(80.4%)	16(19.5%)	<0.001 0.02
Unemployed	47(52.2%)	43(47.7%)	

*chi square has been applied and p value <0.05 is calculated to be significant.

Table 2: Frequency of awareness of iron content in different food items

Variable	Yes no. (%)	No no. (%)	P-Value
Cereals	22	178	0.006
Mutton	94	106	0.003
Dates	13	187	0.004
Milk	108	92	0.05
Egg	55	145	0.20
Dry Fruits	97	103	0.002
Green leafy vegetables	172	28	<0.001
Jaggery	60	140	0.10
Chicken	15	185	0.203
Pulses	37	163	0.046

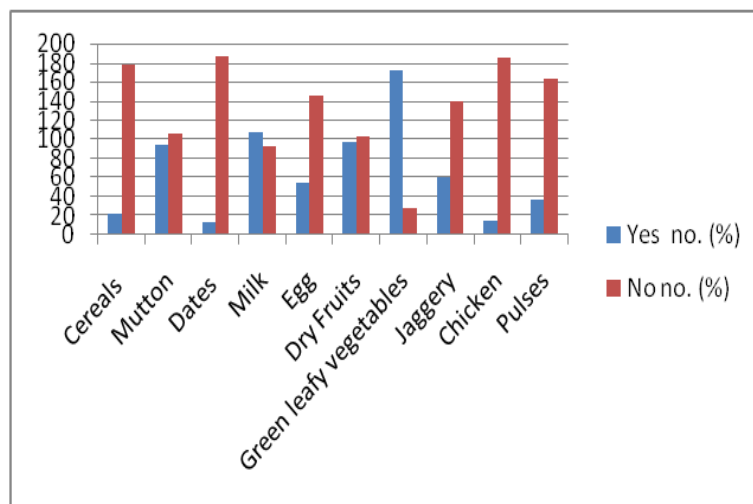


Figure 1: Awareness concerning iron content in different foods

Based on results, 84.5% of women of all ages were aware that iron is included in their diet. Although ladies with kids declared that 97.5% of them had felt weakness and fatigue

throughout maternity however solely 84.0% of those married ladies were responsive to the very fact that pregnant ladies required enhanced intake of iron. Despite the fact that 97.5% of women with children said they felt weakness and fatigue during pregnancy, only 84.0% of married women were aware that pregnant women needed more iron. Iron tablets were found to be beneficial by 94.0% of the women in the community; the remaining 6.0 percent did not believe that iron supplementation helped their health in any significant way. It was observed that 59% of the women who took regular iron supplements did so with food. To achieve the optimal results, 98.2 percent of them believed that the capsules should contain milk, meat, and green leafy vegetables, with a statistically significant p-value of 0.001 (Table 2).

Table 3: Percent distribution of the study participants based on their knowledge regarding IDA

Items	Correct Answer no. (%)	Incorrect Answer no. (%)
Definition of IDA	114 (57.0%)	86 (43.0%)
Signs and Symptoms of IDA	145 (72.5%)	55(25.5%)
Causes of IDA	152(76.0%)	48(24.0%)
Anemia is more prevalent in pregnant women	163(81.5%)	37(18.5%)
Complications of IDA on Mother and Fetus	177(88.5%)	23(11.5%)
Foods that contain high iron content	175(87.5%)	25(12.5%)

Illustrates the percent variation of the research participants based on their understanding and knowledge of IDA. It was found that 57.0%, 74.5%, 76.0%, 81.5%, 88.5% and 87.5% of the studied subjects had correct answer regarding Definition of IDA, Symptoms of IDA, Complications of IDA on Mother and Fetus, Foods that contain high iron content and ways of prevention and causes of IDA respectively. Only few of them had an incorrect answer about complication of IDA on mother and fetus and Foods that contain high iron content.

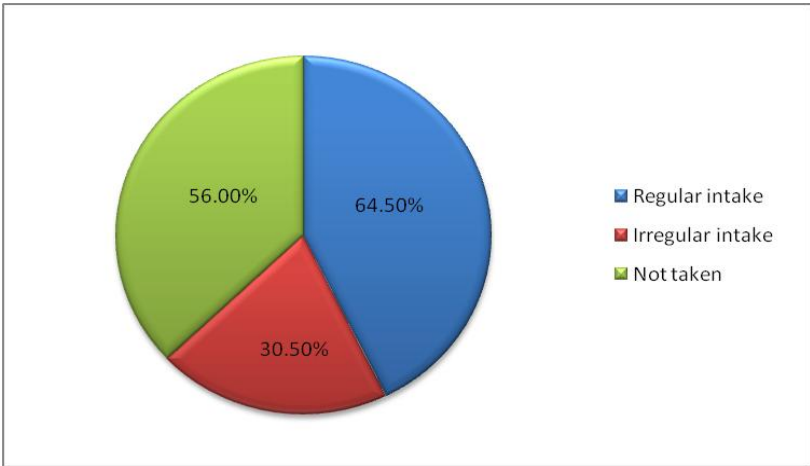


Figure 2: The study population was divided into three categories based on their iron intake.

According to the results of our study group (Figure 2), 64.5% of participants took iron tablets on a regular basis, 56.0% on an irregular basis, and 30.5% did not take iron supplements at all. The findings revealed that the research population was distributed according to literacy. (Figure 3), based on the percentage level primary education group of women have some awareness and knowledge about anemia and prevention.

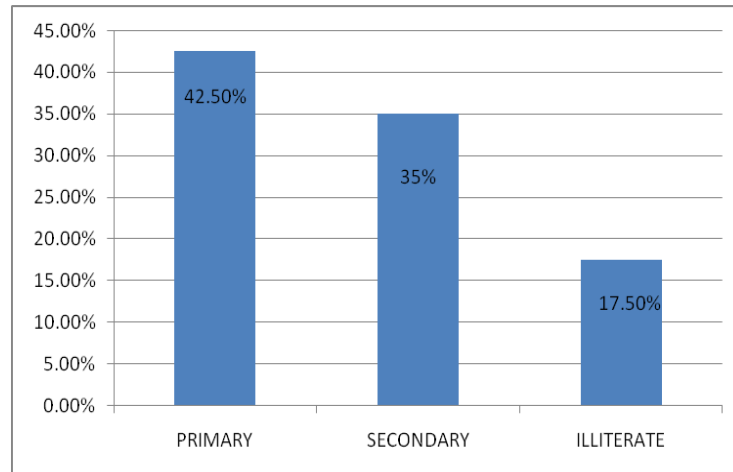


Figure 3: The study population's literacy rate and its correlation to anaemia

Table 4: Distribution of the survey respondents according to their attitude regarding prevention of IDA

Items	Yes		No	
	No	(%)	No	(%)
Severe anaemia can affect growth of fetus	169	84.5 %	22	11.0 %
Despite eating a balanced diet, pregnant women should take iron supplements.	168	84.0 %	32	16.0 %
Excessive consumption of tea / coffee leads to Iron deficiency anaemia	128	64.0 %	71	35.5 %
During pregnancy, it is critical to have regular prenatal checks and blood testing.	178	89.0 %	15	7.50 %
Anemia is prevented by promoting family planning approaches for spacing.	137	68.5 %	62	31.0 %
IDA can be prevented during pregnancy	118	59.0 %	81	40.5 %
Iron tablets are beneficial to both the mother and the infant.	188	94.0 %	11	5.50 %
Do you know your haemoglobin level presently	138	69.0 %	61	30.5 %

Table (4) shows the study participants were described based on their knowledge of IDA. It was found that 89 % agreed that IDA makes the pregnant woman perform regular checkups. Also, 84% agree that IDA can be prevented during pregnancy and iron is important in food. In addition, 40.5% of them strongly disagree with the statement “IDA during pregnancy is a serious problem”

Discussions

IDA is a main source of mortality for women of reproductive age, but few groups had the awareness and practice related to screening and management of this problem. (Ahamed & Hassanen, 2018). The purpose of this study was to raise awareness and knowledge of IDA prevention among pregnant women attending tertiary care health centers and hospitals in the Chennai area. According to Anthony et al., It is well established that the prevalence of anaemia in pregnancy is very high, and that pregnant women are not getting enough iron and other necessary nutrients from their diets to create high amounts of haemoglobin. (Arnabi et al., 2018) Because of the high iron level that cannot be satisfied only through dietary sources, pregnant women must take daily iron and folic acid supplements orally. It is recommended that the educational interpositions of women in reproductive age increasing efforts regarding the preconception counseling and adequate intake of iron-rich foods and folic acid supplementation and early detection can treat the anemia before childbirth. With regard to this issue, Rahman et al. findings showed that studied subjects getting information about IDA from health care workers. (Bansal et al., 2020) According to our current study, 50.7% of women who are aware of IDA understood that different foods include iron, 49.2% did not, and we discovered that only half of the women examined are aware that their diet contains iron. The most of these women were said to be professional, younger, and unmarried. Moreover, it was mentioned from Vinod Kumar et al., that the women of reproductive age have inadequate knowledge on IDA and its prevention. Thereby, raising knowledge within pregnant women about a high-iron diet, the significance of regular iron supplementation and anaemia problems during pregnancy through the adoption of a health education programme will reduce the prevalence of IDA and thus maternal death. These findings are also in line with the findings of at least one other study. They discovered that the mothers who gave birth at University Hospital needed basic knowledge about anaemia prevention and iron-rich food sources. who pointed out that the pregnant women in the study had just below awareness of IDA before to the intervention based on the behavior change. (Levy et al., 2005) Authors have noted a lack of understanding of anaemia, iron-rich foods, and the significance of iron supplementation during pregnancy. The latter was reported that pregnant women had a lack of awareness about anaemia and associated implications. In Our present findings it's found that during pregnancy less than half of the pregnant women had gastrointestinal disease. According to our results, more than two thirds of the study subjects had gastrointestinal disease during pregnancy and this has led to pregnant women at a risk for IDA. This is due to their decrease in iron absorption.

Conclusion

According to the results of our recent survey, the majority of the women who took part in it had a better understand of IDA. This study was taken up to create awareness among reproductive age group women particularly pregnant women regarding the importance of regular intake of iron tablets, diet in iron rich foods and reduce the maternal mortality and morbidity. This study was also chosen to see whether the Hemoglobin level particularly among pregnant women improved due to regular intake of iron and folic acid supplementation.

Limitations and Future Studies

- Present study to be conducted on larger number of samples and different setups.
- Antenatal clinics should provide educational materials to women to improve their awareness and practices about IDA.

Acknowledgements

Authors are grateful to Saveetha medical college and hospital to provide a platform to conduct the study was conducted.

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