TO ASSESS THE IMPACT OF KNOWLEDGE, ATTITUDE AND PRACTICE ON IRON DEFICIENCY ANEMIA STATUS AMONG FEMALES OF REPRODUCTIVE AGE GROUP IN URBAN AREAS OF DEHRADUN

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Abstract: Anemia may be brought on by a decrease in RBC synthesis, an increase in RBC oxidation, or blood loss. According to the RBC's size, haematologists classify anemia into macrocytic, normocytic, and microcytic subgroups. Iron can be found in the body in a number of places. A number of hematologic and biochemical indicators, including blood iron, total body iron (measured by ferritin), transport iron (measured by transferrin saturation), and others, are used to identify the severity of iron shortage. The initial phase of declining iron reserves is known as iron depletion when there is a shortage of iron. This study were conducted in the urban areas of district Dehradun. The subjects were selected on the basis of females of Reproductive age group. The women of reproductive age (18 to 49 years) were selected by Stratified random sampling .Total number of 200 subjects willing to participate in the study were identified. The self-modified KAP questions on Iron Deficiency anemia was interrogated to all the 200 subjects based on the inclusion and exclusion criteria of the study**.** Among 200 women age wise distribution of women showed that the most of the women were in the age group 18-28 years (27.5%) followed by 28-38 years (45%), 38-48years(32.5%). Out of 200 women, 65% had knowledge about anemia and 35%didn't know the term of anemia. Only 47.5% had knowledge about the symptoms of anemia and52.5%didn't know about the symptoms of anemia. 41.5% knew about the causes of anemiaand58.5 % did't know about it. 27.5% knew about ways to prevent anemia and 72.5%didn'tknow about it. Only 5% knew about beverages that decrease iron absorption when taken with meals 95% didn't know about it. 4% knew about foods that hinder iron absorption of taken during meals but 96% didn't know about it,11% were not likely about the self-awareness regarding anemia and 24% were not sure and 65% were likely about this. 16.5%were not serious regarding anemia and 42.5% were serious and 41% were not sure. 11.5%were not feel good to prepare meals with iron rich foods and 37 % were not sure and51.5%were good. 87% were not feel difficult to prepare meals with iron rich foods and8%wereso-so and 10 % were difficult. Only 1% were not feel confident in preparing meals with iron rich foods and 4.5% were so-so and 97.5 % were confident. 63.5 % liked the taste of iron rich foods but 3.5 % were not like the taste of iron rich foods, 56.5 %were consumed vegetarian food on previous day and 43.5% were consumed non-veg food. 74.5%wereknows about the iron rich foods and 25.5% did not. 26.5 % usually ate fresh citrus fruits but 73.5 % were not. 16.5 % ate fresh citrus fruits everyday and 83.5% were not. 5% consumed fresh citrus food before meal, 48.5%duringmeal and 46.5% after meal. Iron deficiency anemia, which affects females of reproductive age, is a severe health issue. Their knowledge, attitude, and behaviour toward these concerns must be improved, and educational intervention is an effective approach to do this. More work has to be done to increase women's knowledge of this in order to improve their present and future health.

KEY WORDS- Anemia, RBC, Blood, Hemoglobin, EPO.

INTRODUCTION

Anemia is defined as low red blood cell (RBC) counts or low hemoglobin (Hgb) levels in comparison to age-appropriate norms. RBC production may be reduced, RBC oxidation may be enhanced, or blood loss may be the cause of anemia. Hematologists divide anemia into macrocytic, normocytic, and microcytic subgroups based on the size of the RBC. The body has several locations where iron can be found. The levels of iron deficiency are determined by blood iron, total body iron (measured by ferritin), transport iron (measured by transferrin saturation), and other hematologic and biochemical indicators. When there is a shortage of iron, the first stage of reducing iron reserves is referred to as iron depletion. As these iron stores are further depleted and Hgb production is impaired, iron insufficiency (without anemia) occurs. Finally, iron deficiency anemia happens when there is not enough iron availability to keep Hgb levels at normal levels [1]. Red blood cell (RBC) synthesis is primarily stimulated by the hormone erythropoietin (EPO), which is produced in the kidney. EPO production is primarily stimulated by tissue hypoxia, and levels of EPO are often inversely correlated with hemoglobin levels. In other words, a person with low hemoglobin and anemia has elevated EPO levels. However, in anemic individuals with renal insufficiency, EPO levels are lower than anticipated. EPO levels are typically higher than they should be in anemia of chronic disease (AOCD), indicating a relative insufficiency of EPO [2].

Indian Scenario

India has a greater prevalence of anemia than other developing nations in all demographics. Anemia is thought to afflict 50% of people in India. More women than men are impacted by the issue, making it more serious. Anemia is thought to be a contributing factor in 20% to 40% of maternal fatalities in India, where 56% of Indian women are anemic. In India, a hemoglobin level of less than 12 g/dL in females is considered anemic, according to the National Consultation on Control of Nutritional Anemia. Hemoglobin levels between 10 and 11.9 g/dl are considered mild anemia, 7-9.9 g/dl are considered moderate anemia, and less than 7 g/dl is considered severe anemia in females. According to data from the National Nutrition Monitoring Bureau (NNMB), the Indian Council of Medical Research (ICMR), and the District Level Household Survey (DLHS), preschoolers, pregnant and lactating women, and adolescent girls all have a very high prevalence of anemia (between 80 and 90 percent). Anemia is especially dangerous for young children, pregnant women, and infants with low birth weights. So as to Beginning in childhood, anemia gets worse during puberty in girls, and worsens during pregnancy [3].

Teenage girls in India are at a higher risk of morbidity and death because they make up a significant portion of the country's population. The greatest number of physical, psychological, and behavioral changes occur during this defining phase of life. The onset of nutritional anemia is particularly susceptible during this stage of human development. Due to the increased need for iron for myoglobin and hemoglobin, as well as poor dietary practices and menstrual-related iron loss, adolescent girls are especially vulnerable to iron deficiency anemia [4].

According to the NFHS-III survey conducted in 2005–2006, India has one of the highest rates of anemia in the entire globe. The expense of healthcare facilities is excessive, the food is of terrible quality, and women are not given enough respect. The survey also showed that Assam is the state with the worst anemia rates, with 72% of married women suffering from the condition, followed by Haryana (69.7%) and Jharkhand (68.4%). One of the main explanations for this unfortunate situation was the prevalence of malaria in states like Assam. In India, anemia continues to be a key contributor to maternal mortality and low birth weight. Pregnant women with Hb less than 8 g/dl are in the higher income group and can experience moderate to severe anemia as well. This group is considered to be at high risk. Seven states, Himachal Pradesh and Haryana in the north, Tamil Nadu and Kerala in the south, Assam and Orissa in the east, and Madhya Pradesh in the centre of India, were looked into. 92% of breastfeeding women and 84% of pregnant women had anemia, with 9.2% and 7.3% of those having severe anemia, respectively. In Madhya Pradesh, Assam, and Haryana, the rates of severe anemia during pregnancy and lactation were respectively 39.2 and 27.3%, 14.4 and 8.6%, and 8.5 and 13.4%.According to ICMR statistics from the same districts, 90.1% of adolescent females had anemia (7.3% had severe anemia). According to the ICMR district nutrition study (1999–2000), anemia prevalence was 84.2%, with 13.1% of pregnant women having severe anemia. Therefore, these findings imply that anemia in women persists throughout their lives[5].

Materials and Methodology

Study design:

Study was observational and questionnaire based.

Study site:

The study was held in Dehradun

Study duration 6

months   **Sample**

size 200

Data collection

The data was collected by personal interviews using self modified questionnaire.

Inclusion criteria

1-Females of reproductive age (18 to 48 years) group. 2-
Willingness of the respondent

Exclusion criteria

1- Females below and above the selected age range 2-
Unwillingness of females.

Study Procedure

This study was conducted in the urban areas of district Dehradun. The subjects were selected on the basis of females of Reproductive age group. The women of reproductive age (18 to 49 years) were selected by Stratified random sampling .Total number of 200 subjects willing to participate in the study were identified. The self-modified KAP questions on Iron Deficiency anemia was interrogated to all the 200 subjects based on the inclusion and exclusion criteria of the study**.** Data collection tool was personal interview. Data collection instrument was self-developed questionnaire after extensive literature research. KAP questionnaire was developed according to our cultural setup, based upon the KAP tool used in many previous researches of the same nature. Questionnaire consisted of two parts: 1)socio demographic performa that included the variables: gender, age, number of siblings, family size, monthly family income, and parental education level. 2) Self-made KAP questionnaire. It included variables: knowledge, attitude, practices; assessed through various relevant questions in each section. Question format in both sections are closed ended and no open-ended question is included. Knowledge level was assessed through questions like: heard about iron deficiency anemia, identify symptoms of anemia, knows causes of anemia, knows about prevention of

Anemia, knows about iron rich foods, knows about foods that aid in iron absorption, knows about beverages that decrease iron absorption when taken with meals, and knows about foods that decrease iron absorption when taken during meals. Attitude level was assessed through questions like: self-awareness regarding anemia as health problem, attitude regarding seriousness of anemia as disease, feels good to prepare meals with iron rich foods, finds difficulty to prepare meals with iron rich foods, feels confident in preparing meals with iron rich foods, likes the taste of iron rich foods. Practice level was assessed through questions like: food groups consumed on previous day usually eats fresh citrus fruits, eats citrus fruits every day, time of consuming citrus fruits, usually consumes tea/coffee, and takes tea/coffee every day, time of taking tea/coffee. Respondents were assured about confidentiality of the data. The data was checked for completeness and consistency.

RESULTS AND DISCUSSION

Demographic Analysis:

The present study was a questionnaire-based study that includes 200 women in urban area of Dehradun. Among 200 women Table 1 showed age wise distribution of women showed that the most of the women were in the age group 18-28 years (27.5%) followed by 28-38 years (45%), 38-48 years (32.5%).

Table 1: Age wise distribution of women

Age (Years)	No. of women (%) (n=200)
18-28	45 (27.5)
28-38	90 (45.00)
38-48	65 (32.5)

Table 2: MARITAL STATUS WISE DISTRIBUTION OF WOMEN

Marital Status	No. of women (%) (n=200)
Married	102 (51)
Unmarried	98 (49)

Table 3: NO. OF SIBLINGS WISE DISTRIBUTION OF WOMEN

No. of Siblings	No. of women (%) (n=200)
No Children	73(36.5)
1-3	115(57.5)
More than 3	12(6)

Table 4: PARENTERAL EDUCATION WISE DISTRIBUTION OF WOMEN

Parenteral Education	No. of women (%) (n=200)
No formal education	6(3)
Class 10(High School)	14(7)
Class 12(Intermediate)	53(26.5)
Graduate	107(53.5)
Post-graduate	20(10)

TABLE 5: OCCUPATION WISE DISTRIBUTION OF WOMEN

Occupation	No. of women (%) (n=200)
Government employee	10(5)
Housewife	145(72.5)
Private employee	36(18)
Self employed	9(4.5)

TABLE 6: MONTHLY FAMILY INCOME (RS) WISE DISTRIBUTION OF WOMEN

Monthly family income (Rs)	No. of women (%) (n=200)
10000 - 20000	10(5)
20000 - 30000	27(13.5)
30000 - 40000	78(39)
40000 - 50000	80(40)
Above 50000	5(2.5)

Part-2 Assessment of knowledge regarding Anemia:

Assessment of knowledge regarding anemia was analyzed using six different questions as shown as in table 8. Out of 200 women, 65% had knowledge about anemia and 35% didn't know the term of anemia. Only 47.5% had knowledge about the symptoms of anemia and 52.5% didn't know about the symptoms of anemia. 41.5% knew about the causes of anemia and 58.5 % don't know about it. 27.5% know about ways to prevent anemia and 72.5% didn't know about it. Only 5% knew about beverages that decrease iron absorption when taken with meals 95% didn't know about it. And also 4% knew about foods that hinder iron absorption if taken during meals but 96% didn't know about it.

Table 8: Knowledge related question regarding Anemia

Q.No.	Questions	Yes (%)	No (%)
1-	Heard about iron deficiency anemia?	130(65)	70(35)
2-	Do you know about the symptoms of anemia?	95(47.5)	105(52.5)
3-	Do you know about the causes of anemia?	83(41.5)	117(58.5)
4-	Do you know about ways to prevent anemia?	55(27.5)	145(72.5)
5-	Do you know about beverages that decrease iron absorption when taken with meals?	10(5)	190(95)
6-	Do you Know about foods that hinder iron absorption if taken during meals?	8(4)	192(96)

Part-3 Assessment of attitude regarding anemia

Assessment of Attitude regarding anemia was analyzed using six different questions as shown as in table 9 to table 14. Out of 200   women, 11% were not likely about the self-awareness regarding anemia and 24% were not sure and 65% were likely about this. 16.5% were not serious regarding anemia and 42.5% were serious and 41% were not sure.11.5% were not feel good to prepare meals with iron rich foods and 37 % were not sure and 51.5 % were good. 87% were not feel difficult to prepare meals with iron rich foods and 8% were so-so and 10 % were difficult. Only 1% were not feel confident in preparing meals with iron rich foods and 4.5% were so-so and 97.5 % were confident. 63.5% liked the taste of iron rich foods but 3.5 % were not like the taste of iron rich foods.

Table 9 : Self-awareness regarding anemia

Q.No.	Question	Not likely (%)	Not sure (%)	Likely(%)
1-	Self-awareness regarding anemia	22(11)	48(24)	130(65)

Table 10 : Attitude regarding seriousness of anemia

Q.No.	Question	Not serious (%)	Serious (%)	Not sure (%)
2-	Attitude regarding seriousness of anemia	33(16.5)	85(42.5)	82(41)

Table 11 : Attitude regarding feels good to prepare meals with iron rich foods

Q.No.	Question	Not good (%)	Not sure (%)	Good (%)
3-	Feels good to prepare meals with iron rich	23(11.5)	74(37)	103(51.5)

Table 12 : Attitude regarding finds it difficult to prepare meals with iron rich foods

Q.No.	Question	Not difficult (%)	So-so (%)	Difficult (%)
4-	Finds it difficult to prepare meals with iron rich foods	174(87)	16(8)	10(5)

Table 13: **Attitude regarding feels confident in preparing meals with iron rich foods**

Q.No.	Question	Not confident	So-so (%)	confident (%)
5-	Feels confident in preparing meals with iron rich foods	2(1)	5(4.5)	195(97.5)

Table 14 : **Attitude regarding like the taste of iron rich food items**

Q.No.	Question	Like (%)	Dislike (%)
6-	Like the taste of iron rich food items	193(96.5)	7(3.5)

Part-4 Assessment of practice regarding anemia

Assessment of practice on anemia analysed using 5 different questions as shown in table 15 to table 19. Out of 200 women,56.5 % were consumed vegetarian food on previous day and 43.5% consumed non-veg food. 74.5% knew about the iron rich foods and 25.5% did not. 26.5 % usually ate fresh citrus fruits but 73.5 % were not. 16.5 % ate fresh citrus fruits every day and 83.5% were not. 5% consumed fresh citrus food before meal, 48.5% during meal and 46.5% after meal.

Table 15: Practice regarding foods consumed on previous day

Q.No.	Question	Veg (%)	Non- Veg (%)
1-	**Foods consumed on previous day**	113(56.5)	87(43.5)

Table 16: Knows about iron rich foods

Q.No.	Question	Yes (%)	No (%)
2-	**Knows about iron rich foods**	149(74.5)	51(25.5)

Table 17: Practice regarding usually eat fresh citrus fruits

Q.No.	Question	Yes (%)	No (%)
3-	**Usually eat fresh citrus fruits**	53(26.5)	147(73.5)

Table 18: Practice regarding eat fresh citrus fruits every day

Q.No.	Question	Yes (%)	No (%)
4-	**Eat fresh citrus fruits every day**	33(16.5)	167(83.5)

Table 19: Practice regarding time of consuming fresh citrus fruit

Q.No.	Question	Before meal (%)	During meal (%)	After meal (%)
5-	**Time of consuming fresh citrus fruit**	10(5)	97(48.5)	93(46.5)

In this discussion, the results were interpreted within the women urban areas of Dehradun in this I placed my study within the wider context of Knowledge, Attitude, and Practice in public health in India with the help of demographic analysis. The females in my study the level of anemia were higher in (28-38 years - 45%) age group as compared to (38-48 years – 32.5%) age group and very less number in (18-28 years – 27.5%) age group. According to previous studies Level of anemia were higher ($p<0.05$) in early adolescent (10 -13 Years) age group (81%) as compared to middle (58.3%) and late adolescent (17-19 years) age group girls (48.7%)[46]. In my study most of the women heard about the iron deficiency anemia, only 5% females knew about beverages that decrease iron absorption when taken with meals and 4% about foods that hinder iron absorption if taken during meals. A previous survey indicated that all respondents had heard of iron deficiency anemia and that the majority could name the main symptoms, causes, and ways to prevent it. 60% were aware of foods and drinks that improved or decreased iron absorption [6]. The 24% females in my study were not sure about self- awareness regarding anemia but most of the females were very serious regarding anemia. According to a previous study's average attitude score, respondents' attitudes regarding their own awareness of the ailment of anemia were positive in 79% of cases. In my study most of the females knew about iron rich foods, but in very less number of females consumed citrus food. In my study the relationship between practice level and Hg level the behaviour is not relevant to iron deficiency anemia. According to a previous study's findings on the relationship between Hb levels and practices level scores, 53% of participants demonstrated the behaviours most relevant to iron deficiency anemia[6].

Conclusion

Among females of reproductive age group, iron deficiency anemia is a serious health concern. It is necessary to enhance their understanding, attitude, and behaviour with regard to these issues, and educational intervention is a successful way to do this. In order to improve the current and future health of females of reproductive age group, more needs to be done to raise their knowledge of this. Health care personnel need to be informed about this age group's health issue and supported

in order to identify, address, and continuously assess this issue, particularly in a school context.

Refrences:

1. Wu AC, Lesperance L, Bernstein H. Screening for iron deficiency. Pediatrics in Review.

2002 May 1;23(5):171-8.

2. Turner J, Parsi M, Badireddy M. Anemia. InStatPearls [Internet] 2022 Jan 9. StatPearls Publishing.

3. DLHS on RCH. Available from: http://www.rchindia.org/nr_india.htm 2006, accessed on September 24, 2008.

4. JL Beard, J Nutr, 2000,130, 440S – 442S

5. G Toteja; P Singh, Report of an ICMR Task Force Study -District Nutrition Project, 2001, Part 1.

6. Shahzad S, Islam K, Azhar S, Fiza S, Ahmed W, Murtaza Z. Impact of knowledge, attitude and practice on iron deficiency anemia status among females of reproductive age group (20-21-year-old) studying in Government Home Economics College Lahore, Pakistan. International Archives of BioMedical and Clinical Research. 2017;3(4):31-6.