A STUDY ON KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS IRON DEFICIENCY ANEMIA AMONG ADOLESCENT GIRLS (10-19 YEARS) OF HAPUR, UTTAR PRADESH- A CROSS-SECTIONAL STUDY

Abstract

Iron deficiency anemia (IDA) is a significant public health concern, particularly among adolescent girls, due to their increased iron demands during the rapid growth and development phase. The present study aimed to assess the knowledge, attitudes, and practices related to iron deficiency anemia among adolescent girls aged 10-19 years in the Hapur district of Uttar Pradesh. This cross-sectional study was conducted which involved a representative sample of 50 adolescent girls (10-19 yrs) from various educational institutions and community settings. A structured questionnaire was designed to gather data on the participants' knowledge about iron deficiency anemia.The study also sought to understand the attitudes of the participants towards anemia and their perception of the importance of iron-rich diets and iron supplementation. Additionally, the practices related to dietary habits, consumption of iron supplements (if any), and awareness of available healthcare services for anemia were assessed. The findings reveal a concerning lack of awareness regarding iron deficiency anemia and its potential health implications among the target population. Attitude assessment further highlighted the challenges in adopting iron-rich dietary practices.The study revealed suboptimal dietary practices, with a considerable proportion of adolescent girls consuming diets lacking in iron-rich foods contributing to the prevalence of anemia. Therefore, it is

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necessary to address knowledge gaps, misconceptions, and dietary practices related to iron deficiency anemia among adolescent girls in Hapur, Uttar Pradesh.

Keywords: Iron deficiency anemia, adolescent girls, knowledge, attitude, practices

I. INTRODUCTION AND REVIEW OF LITERATURE

Anemia is a widespread nutritional issue globally, primarily caused by iron deficiency. It refers to a condition where the number and size of red blood cells (RBCs) or the concentration of hemoglobin (Hb) falls below certain levels, leading to a reduced capacity of the blood to transport oxygen in the body [1]. Although anemia can occur at any stage of life, it is more prevalent during adolescence due to the increased iron requirement caused by rapid growth and the loss of iron during menstruation, which amounts to 12.5–15 mg per month [2]. The prevalence of anemia among adolescents in developing and developed countries is reported to be 27% and 6%, respectively [3]. In developing countries, adolescent anemia isidentified as a significant nutritional problem, with India reporting a particularly high prevalence among adolescent girls compared to other developing nations [4,5].

Anemia has detrimental effects on cognitive performance, behaviour, and physical growth. It also impacts the immune system and increases susceptibility to infections, as well as affects the energy utilization by muscles, consequently impairing the physical capacity and work performance of adolescents [6]. Iron deficiency during puberty can lead to irreversible negative consequences for reproductive development throughout life and beyond [7]. Children born to undernourished adolescent girls have higher rates of low birth weight, prematurity, neonatal, and infant mortality. These undernourished girls are more likely to develop anemia and give birth to low birth-weight babies [8].

Knowledge plays a crucial role as a foundation for changes in attitude and practices to prevent anemia. Limited access to knowledge has been suggested as one of the underlying causes of the increased prevalence of anemia [9]. Greater nutrition-related knowledge, attitude, and practices (KAP) towards anemia have been associated with improved health behaviour, potentially helping prevent other health problems with shared risk factors, such as linear growth failure in adolescents [10,11]. Adolescents, especially girls, are often neglected and hard to reach population, and their specific needs are frequently overlooked [12]. Raising awareness and promoting correct attitudes and practices about anemia can help engage adolescents and address the lack of appropriate knowledge and attitude regarding healthy eating, leading to unhealthy eating behaviour [13]. Therefore, this study aims to assess the Knowledge, Attitude, and Practice (KAP) and health-seeking behaviour regarding anemia among adolescent school girls.

II. OBJECTIVES

1. To assess the knowledge of adolescent girls (10-19 years) in Hapur regarding iron deficiency anemia.
2. To examine the attitudes of adolescent girls towards iron-rich diets, nutritional supplements, and healthcare-seeking behaviour for anemia.
3. To analyse the current practices of adolescent girls related to iron intake, dietary habits, and adherence to preventive measures for anemia.

III. MATERIALS AND METHOD

A structured questionnaire was employed to adolescent girls (10-19 yrs) to assess their knowledge, attitude and practice towards iron deficiency anemia. A sample of 50 adolescent girls through simple randomised selection method were interviewed via questionnaire method. The survey was conducted using an oral questionnaire method. Questionnaires were distributed to all the girls after explaining to them the purpose of conducting the survey. They were also given a detailed explanation on how to fill the questionnaire and were assured about confidentiality of the contents. The data collected was on awareness about IDA.

Information was obtained by face to face talk with the respondents. The questionnaire included demographic profile, knowledge, attitude, and practices related to iron deficiency anemia. The responses were analysed using Microsoft excel and Google docs.

IV. RESULT AND DISCUSSION

1. Knowledge about Anemia:

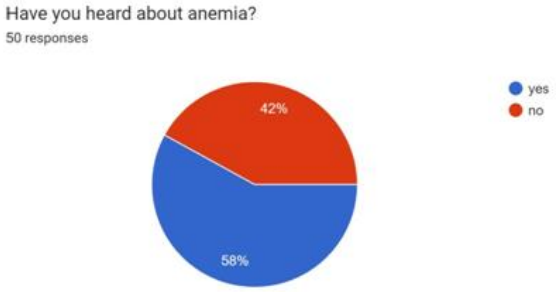

Figure 1

According to the data only 58% of the girls have heard about anemia whereas the rest 42% of girls are unaware of term anemia.

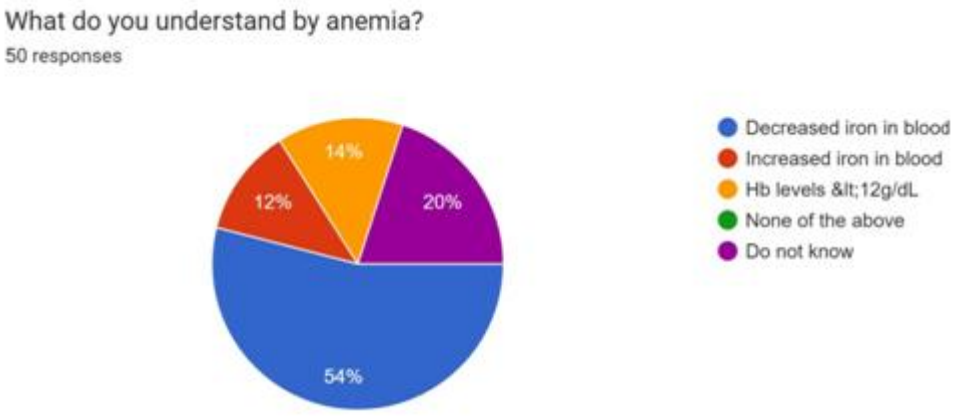

Figure 2

According to the survey, only 54% of the girls know that anemia is a disorder where blood iron levels are low. On the other hand 14% of them believe anemia is a condition where Hb levels are less than 12g/dL. On the contrary, 12% of the girls think anemia is due to increased iron levels in blood. whereas the rest 20% of the girls do not know about anemia.

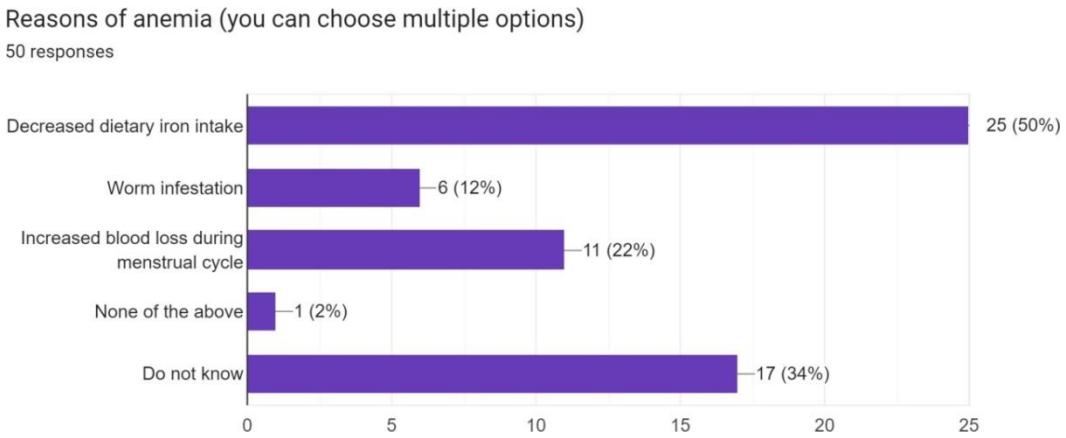

Figure 3

According to the data, 50% of the girls say anemia can be due to only decreased iron intake in diet, while 22% of them say it can only be due to increased blood loss during menstruation. On the other 12% girls say it can only be due to worm infestation. Whereas 2% of them believe none the above options can cause anemia, while the rest 34% of the girls don't know the reason that can cause anemia.

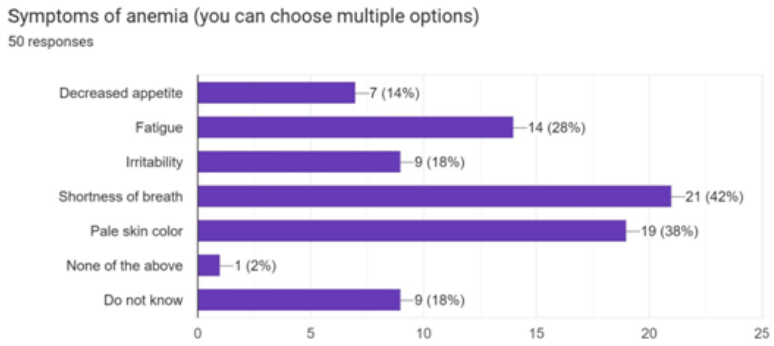

Figure 4

According to the survey, 42% of the girls say only shortness of breath is a symptom of anemia. Whereas other 38% and 28% of the girls say only pale skin colour and fatigue respectively can be symptoms of anemia. On the other hand, other 18% and 14% of the girls say its symptom is only irritability and decreased appetite. While the rest 18% of the girls did not know the symptoms of anemia.

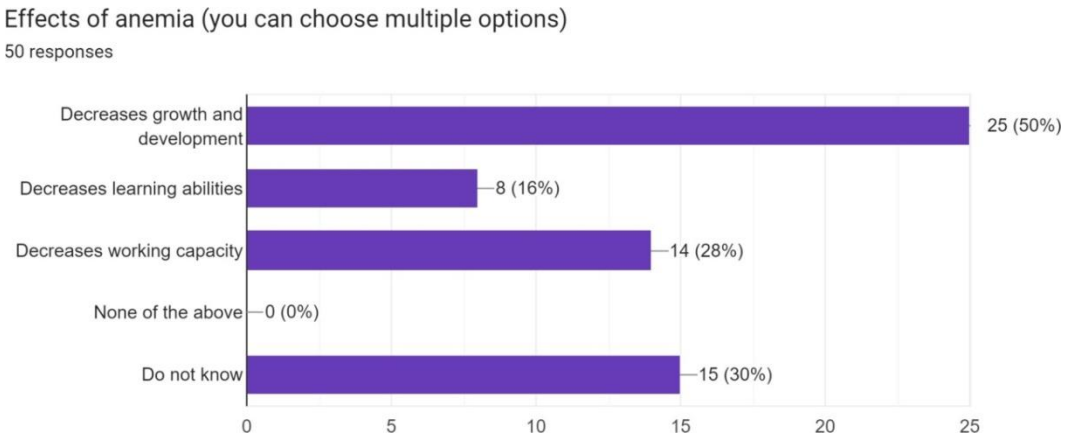

Figure 5

According to the data, 50% of the respondents say anemia can lead to decreased growth and development, whereas the other 28% and 18% of the respondents say it can lead to decreased working capacity and learning abilities respectively. While the rest 30% of the respondents do not know the ill effects of anemia.

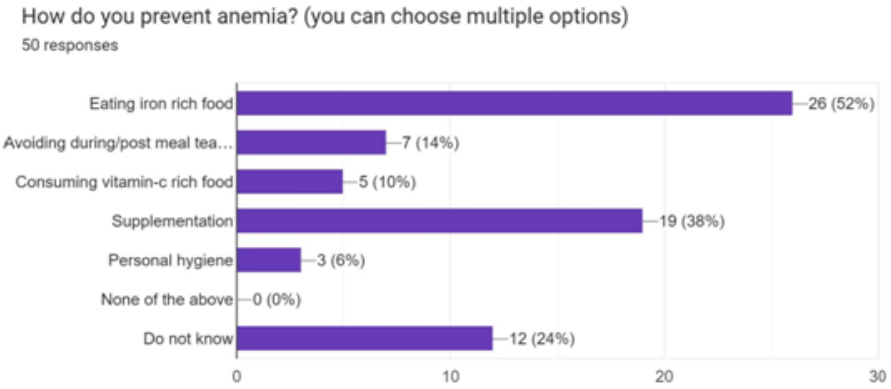

Figure 6

According to the survey, 52% of the girls say eating iron rich food is essential to prevent anemia. Whereas 38% of the girls say it can be prevented by taking supplements. On the other hand, another 14% say avoiding tea during and post meal can prevent anemia. While 10% and 3% of the girls say consuming vitamin C rich food and personal hygiene respectively is necessary to prevent anemia. And the rest 24% of the girls do not know about the necessary precautions for anemia.

According to the survey, only 60% of the girls know about iron folic acid supplementation whereas the rest 40% of them are unaware about the supplementation.

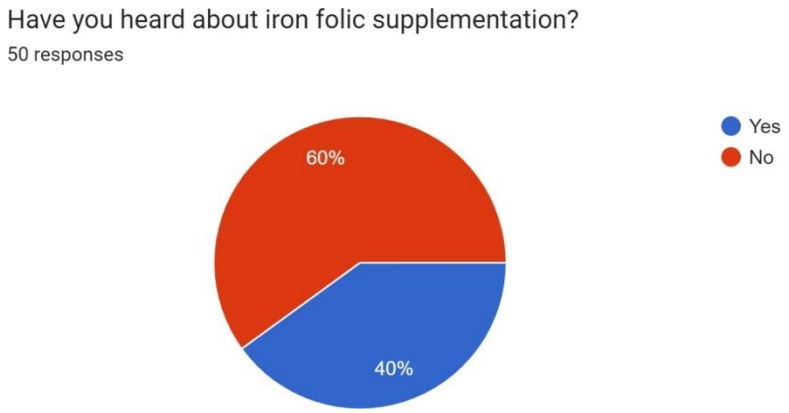

Figure 7

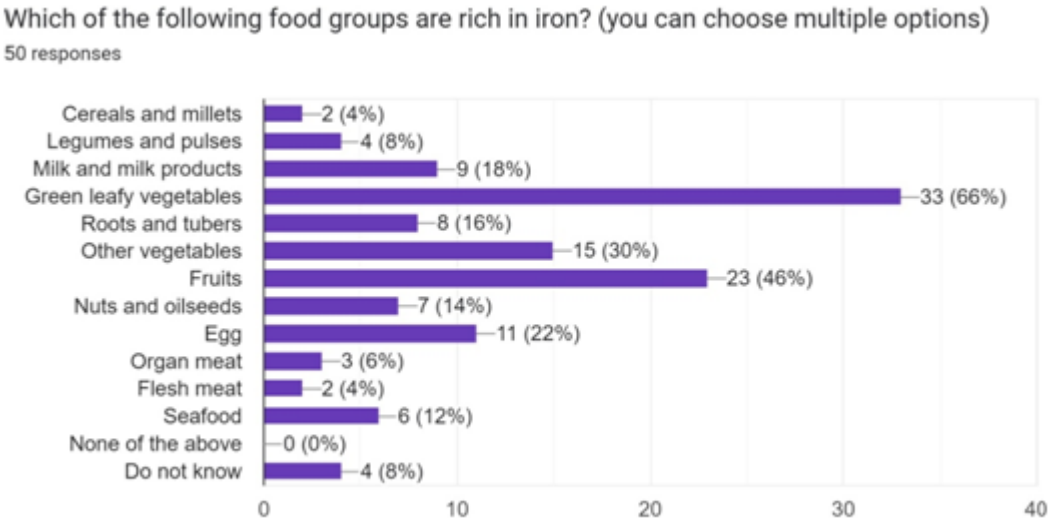

Figure 8

According to the data, out of all the girls, 74% of the girls are aware about the food groups that contain iron. Whereas rest 26% of the girls do not know about iron containing food.

According to the data, 46% of the girls know that tea can decrease iron absorption. Whereas 38% and 12% of the girls know that coffee and caffeinated drinks intake decreases iron absorption respectively. While 16% of the girls say fruit juices can decrease iron absorption. On the other hand 24% of the respondents are not aware about the food that can decrease iron absorption.

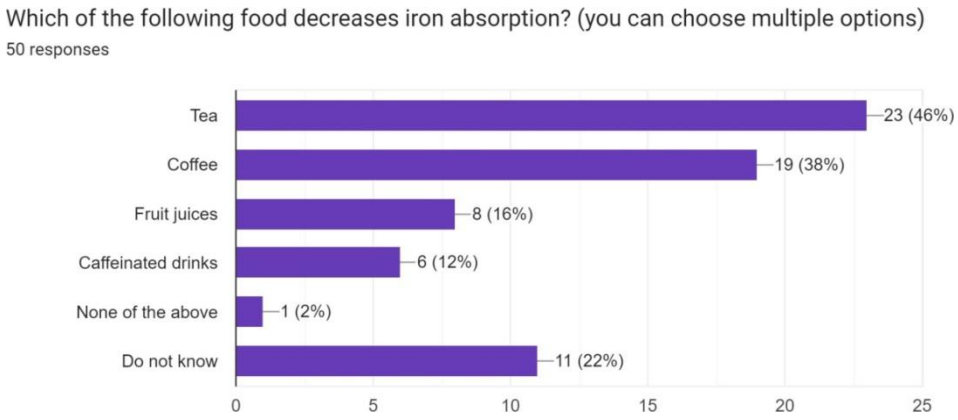

Figure 9

2. Attitude towards Anemia

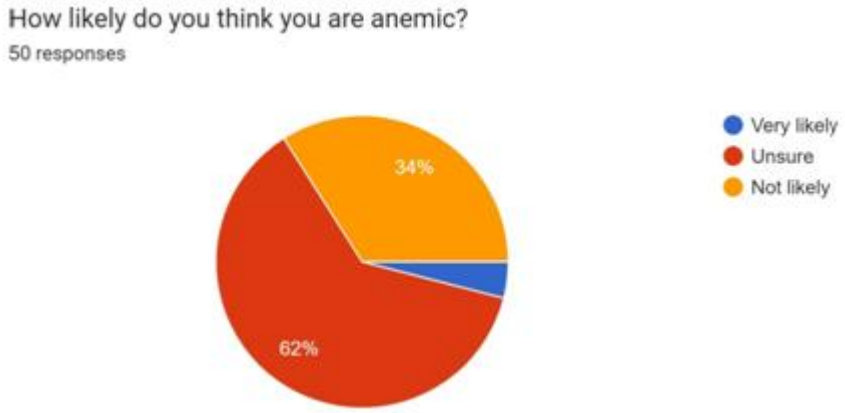

Figure 10

According to the survey, 34% of the girls believe that they are not likely to be anaemic. On the other hand, 4% of the girls believe that they are likely to be anaemic. Whereas the remaining 62% of the girls are unsure about their condition.

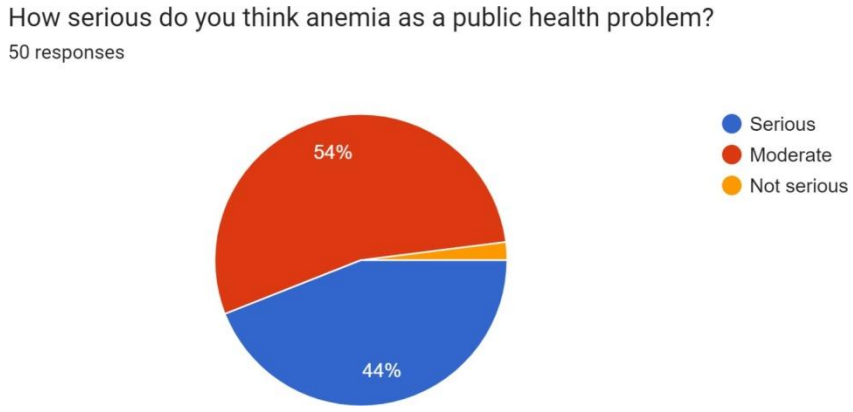

Figure 11

According to the survey, 44% of the girls believe that anemia is a serious health problem. On the other hand, 54% of the girls believe that anemia is a moderately serious health problem. Whereas the remaining 2% of the girls believe that anemia is not a serious health problem.

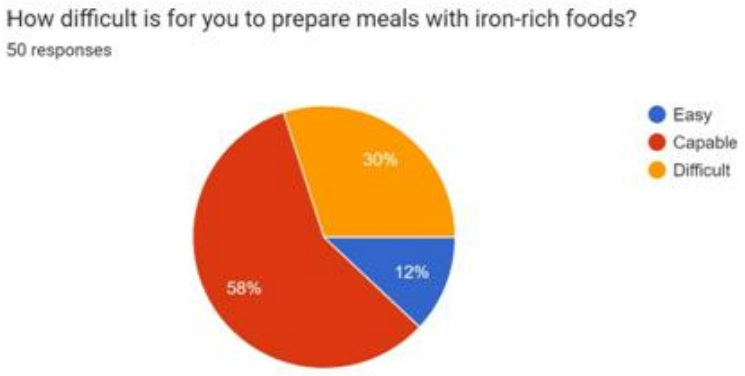

Figure 12

According to the survey, 12% of the girls find it easy to prepare meals with iron rich food in it. On the other hand, 58% of the girls say that they are capable of preparing meals with iron rich food in it. Whereas the remaining 30% of the girls find it difficult to prepare meals with iron rich food in it.

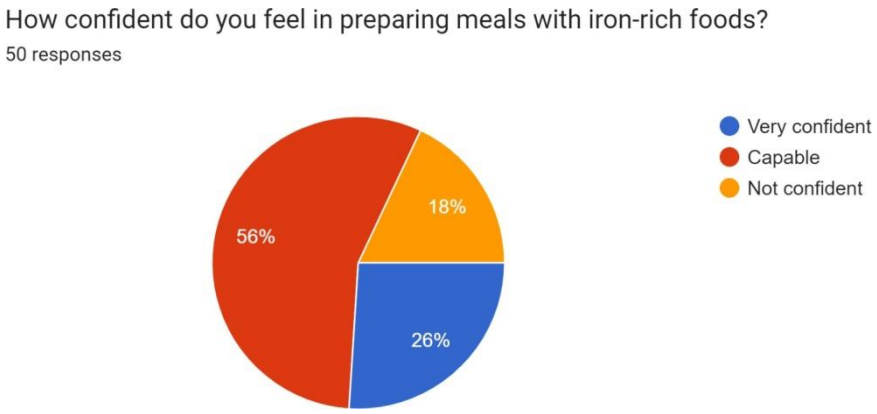

Figure 13

According to the survey, 26% of the girls feel very much confident in preparing meals with iron rich food in it. On the other hand, 56% of the girls feel that they are capable of preparing meals with iron rich food in it.. Whereas the remaining 18% of the girls do not feel confident enough in preparing meals with iron rich food in it.

3. Practice towards Anemia:

Figure 14

This food frequency questionnaire was comprising of food rich in iron and the food that inhibits iron absorption. Above graph depicts that very less portion of girls consumed iron rich food such as rajgira, murmure, whole wheat, black chana, dal and glvs in their regular diet. However other portion of girls included iron rich food in their diet but its frequency was insufficient to meet daily iron requirements. On the other hand, consumption of food that interferes with iron bioavailability such as coffee/tea, milk and junk food was high. Thus according to the data, dietary intake of iron rich food among adolescent girls was suboptimal.

According to Ray W. et al (2021), vitamin C enhances iron absorption. Therefore, it is best to take vitamin C during meals along with iron containing food. While survey data shows, out of 50 girls, only 12 of them consume vitamin c rich foods during meals whereas 24 of them consume it before meal and remaining 14 girls consume vitamin c rich food after meal.

Lazrak M. et al (2021), consumption of tea or coffee along or after meal decreases the bioavailability of iron. Therefore, it is best to consume tea/coffee before a meal. And survey data shows, out of 50 girls, 34 of them consume tea/coffee before meals. Whereas 14 of them consume tea/coffee during meal and 12 of them after the meal.

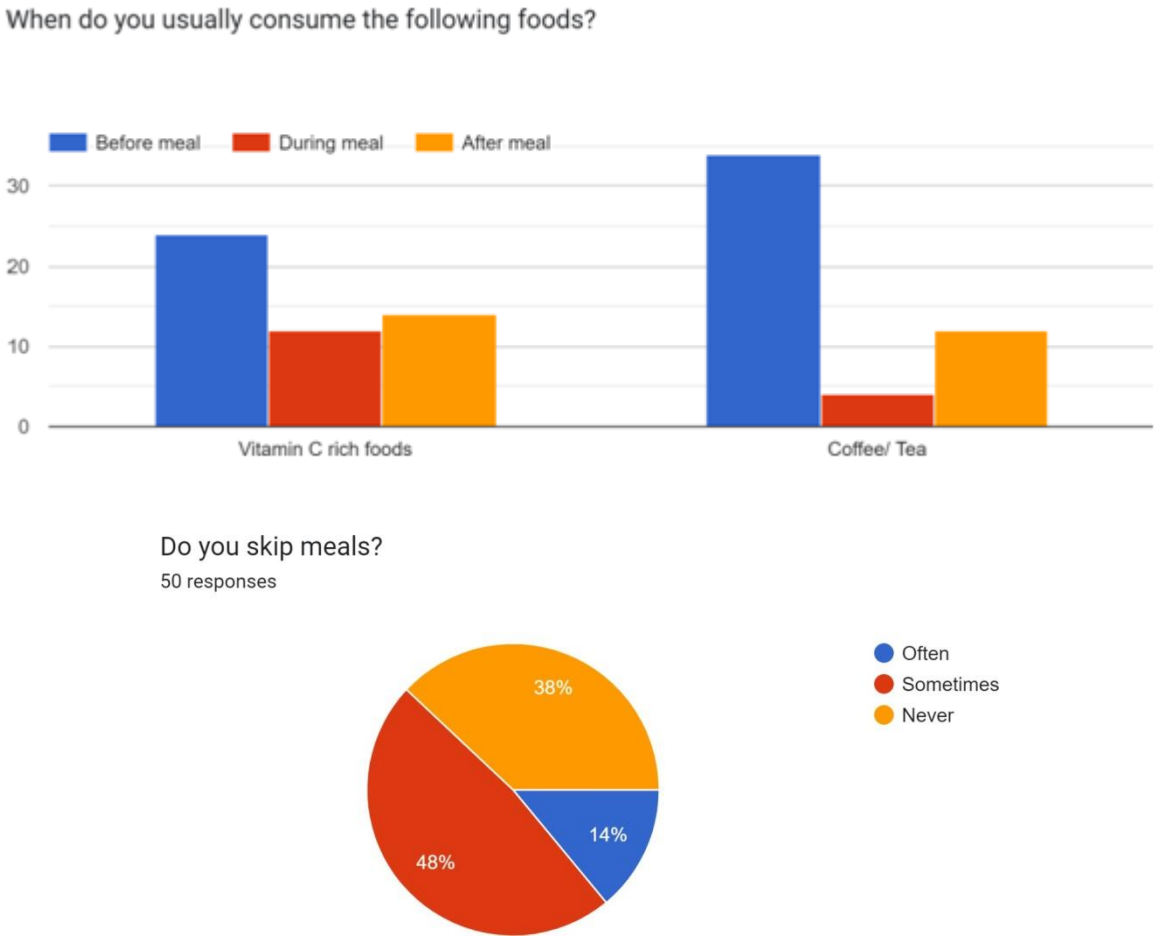

Figure 15

According to Agustina R. et al (2020), skipping meals can cause nutrient deficiency. As per the survey, 14% of the girls often skip meals. Whereas, 48% of them skip meals sometimes. However, 38% of the girls never skip the meals.

According to the survey, 60% of the respondents say that they will seek medication if they found out that they suffering from anemia whereas rest 40% of them will not go for any medical advice.

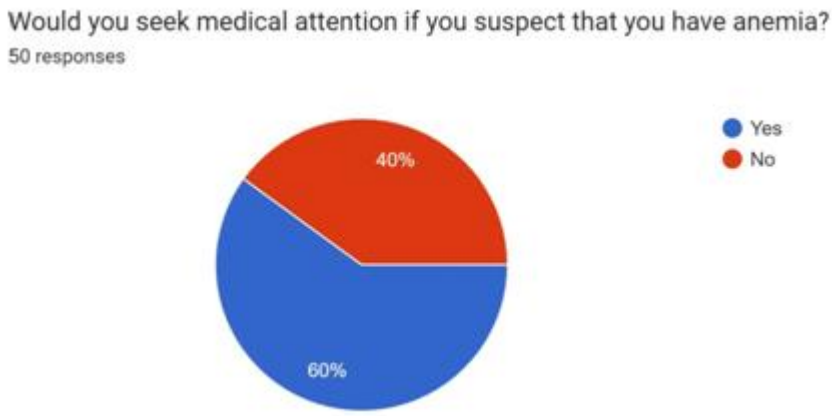

Figure 16

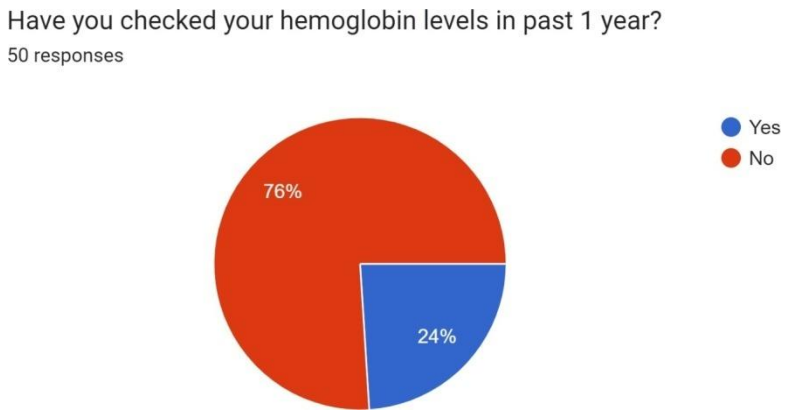

Figure 15

According to the survey, only 24% of the girls has checked their Hb levels in the past 1 year while remaining 76% of them did not.

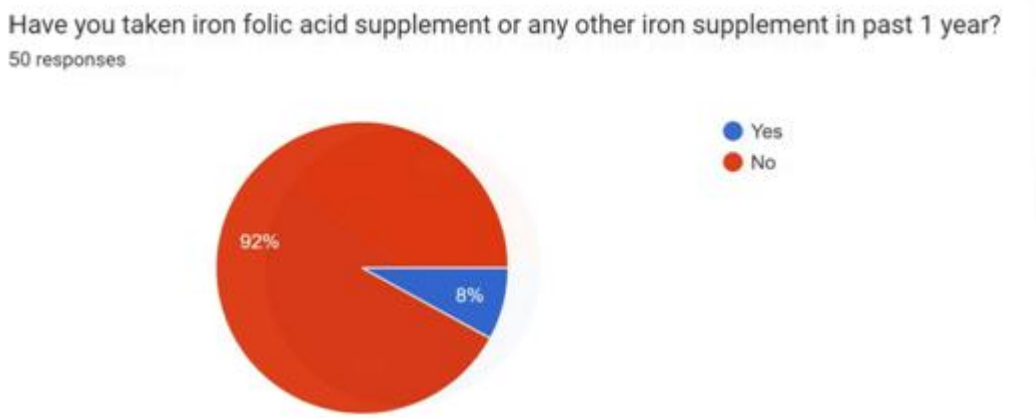

Figure 17

According to the survey, only 8% of the girls have taken supplement in the past 1 year while remaining 92% of them did not take any iron related supplement since 1 year.

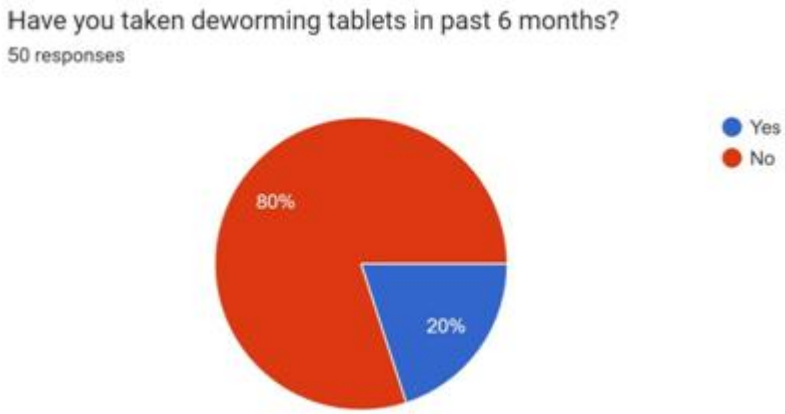

Figure18

According to the survey, only 20% of the girls have taken deworming tablets in the past 6 months while the remaining 80% of them have not taken any deworming tablets in the past 6 months.

V. SUMMARY AND CONCLUSION

The findings revealed that a substantial proportion of adolescent girls demonstrated inadequate knowledge about iron deficiency anemia. Many participants were unaware of its causes, symptoms, and long-term health implications. Furthermore, the study identified prevalent misconceptions towards anemia, leading to delays in seeking appropriate medical advice.

Regarding attitudes, the study revealed both positive and negative attitudes towards anemia. While some participants recognized the importance of iron-rich diets and preventive measures, others demonstrated a lack of concern, attributing anemia to factors beyond their control. Assessment indicated that some respondents recognized the importance of consuming iron-rich foods, the prevailing cultural beliefs and dietary preferences often hindered the adoption of such practices.

In terms of practices, the dietary intake of iron-rich foods among adolescent girls was found to be suboptimal. A considerable proportion of adolescent girls' diet was lacking in iron-rich foods. Traditional diets, while rich in some nutrients, were found to be deficient in providing adequate iron, contributing to the prevalence of anemia. Similarly, the adherence to iron supplementation was inconsistent.

This study underscores the urgent need for targeted health education interventions to improve knowledge, attitudes, and practices related to iron deficiency anemia among adolescent girls in Hapur, Uttar Pradesh. Such interventions should focus on enhancing awareness, dispelling myths, and fostering positive attitudes towards anemia prevention and management. By promoting a comprehensive approach, the burden of anemia can be

alleviated, leading to better health outcomes and improved quality of life for adolescent girls in the region.

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