A Study on Nutritional Management of Anaemia among Adolescent Girls in Pipli Town, Odisha

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Abstract: *The study aimed to investigate the prevalence of anemia among adolescent girls in pipili town, focusing on nutritional awareness, dietary habits, and potential risk factors. A cross - sectional and descriptive design was employed, with data collected through surveys from 50 participants aged 13 - 18 years. Results indicated a low prevalence of anemia within the surveyed population, with 14% of respondents diagnosed with the condition. However, a notable portion of participants reported experiencing symptoms of fatigue and weakness occasionally, highlighting potential under diagnosis or lack of awareness regarding anemia. Dietary habits varied, with a significant proportion consuming iron - rich foods frequently and relying on nutritional supplements. While awareness levels regarding anemia were moderate to high, gaps in knowledge and access to healthcare services were evident. Proposed interventions included educational workshops, involving healthcare professionals, and considering socio - cultural factors in intervention design. Overall, the study underscores the importance of targeted interventions to address anemia among adolescent girls, focusing on improving awareness, promoting healthy dietary practices, and ensuring access to healthcare services.*

Keywords: anemia, iron rich - food, awareness, adolescents girls

1. Introduction

Anemia accounts for a majority of the nutritional problem across the globe and it is principally engendered by deficiency of iron. Although it occurs in all the age group, prevalence in on a higher side among women of childbearing age. its prevalence is incordinately higher among developing nations, because of low socio Economic status and indigent access to healthcare services. In developing countries, the adolescent group is more exposed to nutritional challenges and adolescent girls are more vulnerable to the disease. Studies showed that adolescent anemia was the greatest nutritional problem encountered in developing countries. Anemia is classically defined as disease oxygen carrying capacity of the blood. It is manifested by decrease in red blood cell count less than 4 million levels/mm or hemoglobin less than 10g% or both may be present together. The hemoglobin levels is employed as the prime arbiter in the diagnosis of anemia. Anemia is a sign, not a diagnosis. Many kinds of anemia exist, all characterized by insufficient erythrocyterized by insufficient erythrocyte or hemoglobin. These conditions lead to fatigue and intolerance to cold, both of which are related to lack of oxygen needed for energy and heat production. Blood in the blood vessels is always in the heart. Anaemia is a global public health problem affecting all over the world with major Consequences on health, social and economic development. It occurs at all life stages of the human being but is more prevalent in pregnant women and young children. Anemia among adolescent girls happen due to an increased requirements, physical growth, reproductive maturation and cognitive transformation in the continuum of life. Even if the cause of anemia is multifunctional, globally, the most significant contributor to the onset of anemia is an iron deficiency which attributes at least 50% of the cases of anemia. Adolescent girls are particularly vulnerable to anaemia due to various physiological and lifestyle factors. The rapid growth spurt during adolescence increases the demand for nutrients, including iron, to support physical development. Additionally, menstruation, which commonly begins during adolescence, further exacerbates the risk of iron deficiency anaemia due to blood loss during menstruation. Moreover, dietary habits, socioeconomic status, and access to healthcare services significantly influence the prevalence and severity of anaemia among adolescent girls. Nutritional management plays a crucial role in preventing and treating anaemia among adolescent girls. Adequate intake of iron - rich foods, along with other essential nutrients such as vitamin B12, folate, and vitamin C, is essential for maintaining optimal haemoglobin levels and overall health. However, despite the availability of effective interventions, awareness and adherence to nutritional recommendations for anaemia prevention and management among adolescent girls remain suboptimal.

2. Objectives

1) To determine the prevalence of anemia among adolescent girls in the target population.
2) To identify the potential risk factors associated with anaemia.

3) To explore the dietary habits and nutrition status of the participants.

3. Research Methodology

1) **Design of the Study:** A cross sectional and descriptive design was used to assess the Awareness on nutritional management on anaemia among adolescent girls (13 - 18) in Pipili town, Odisha.
2) **Area of the study:** Two areas were selected for the study namely Bhabanipur and Mangalapur, in pipli town.25 samples were selected from the each area.
3) **Population of the study:** Adolescent girls aged between (13 - 18) years were selected for the study.
4) **Sampling methods:** The selection of the respondents was based on purposive random sampling. The process of selecting the sample was done by arranging the adolescent in alphabetical order.
5) **Sample size:** Total 50 samples was selected for the population of the study.
6) **Collection of the data:** Collection of the data was done by survey method. A questionnaire was used to collect necessary information from the respondents
7) **Data Analytics:** The analyzing of collected was done with the help of some appropriate statistical procedure such as mean, median, mode and percentage considering some independent variables

4. Result and Discussion

Table 1: Prevalence of Anemia among Adolescent Girls in the Target Population

S. No	Variable	Particular	f	%
1	Diagnosed with Anaemia	Yes	7	14
		No	43	86
2	If Yes Last Diagnosed	With in Last 6 Month	3	6
		Within Last Year	5	10
		More than a Year Ago	2	4
		Never Been Diagnosed	40	80
3	Aware of Current Hemoglobin Levels	Yes	31	62
		No	19	38
4	Experienced Symptoms, Fatigue Weakness, Dizziness	Frequently	2	4
		Ossasionally	17	34
		Rarely	23	46
		Never Been Diagnosed	8	16
5	Undergo Health Checkup	Regularly	9	18
		Ossasionally	14	28
		Rarely	22	44
		Never	5	10

- Among respondents, 14% have been diagnosed with anemia, while the vast majority, comprising 86%, and have not. This data indicates a relatively low prevalence of anemia within the surveyed population. Understanding the prevalence of health conditions like anemia is essential for healthcare planning and interventions. It highlights the need for targeted health education and access to healthcare services to address and prevent anemia and related health issues within the community

- Among respondents diagnosed with anemia, 6% were diagnosed within the last 6 months, 10% within the last year, and 4% more than a year ago. Remarkably, 80% of those diagnosed reported never being diagnosed with anemia. This data suggests a potential underdiagnosis or lack of awareness regarding anemia within the surveyed population. Ensuring timely diagnosis and treatment is crucial for managing anemia and improving overall health outcomes among affected individuals.

- Among respondents, 62% are aware of their current hemoglobin levels, while 38% are not. This indicates a moderate level of awareness regarding hemoglobin levels within the surveyed population. However, the significant portion of respondents unaware of their hemoglobin levels suggests a potential lack of emphasis on regular health check - ups or limited access to healthcare services. Promoting awareness and facilitating access to health screenings could help improve overall health monitoring and management among the surveyed population.

- Among respondents, 4% frequently experience symptoms of fatigue, weakness, and dizziness, while 34% experience them occasionally. Additionally, 46% report experiencing these symptoms rarely, and 16% have never been diagnosed with such symptoms. These findings suggest a varying degree of symptom frequency within the surveyed population, highlighting the importance of monitoring and addressing symptoms to improve overall well - being and health outcomes.

- Among respondents, 18% undergo health check - ups regularly, while 28% do so occasionally. Additionally, 44% report undergoing health check - ups rarely, and 10% never do. These findings indicate a varied pattern of health check - up behavior within the surveyed population, with a notable portion reporting infrequent or nonexistent health monitoring practices. Encouraging regular health check - ups could facilitate early detection and management of health issues, ultimately promoting better overall health outcomes among the surveyed population.

Table 2: Potential Risk Factors Associated with Anaemia

S. No	Variable	Particular	f	%
1	Family Members A History of Animia	Yes	7	14
		No	34	68
		Don't Know	9	18
2	Memstrual Cycle Regularity	Regular	39	78
		Irregular	8	16
		Don't Know	3	6
3	Engage In Physical Activity Per Week	Less Than One Hour	15	30
		1 - 3 Hours	27	54
		More than three Hours	8	16
4	Chronic Illnesses Or Medical Condition	Yes	17	34
		No	21	42
		Not Sure	12	24
5	Consume Food Rich in Vitamin C	Rarely	19	38
		Ossasionally	21	42
		Frequently	11	22

- Among 50 respondents, 14% reported a family history of anemia, while 68% denied such history. Interestingly, 18% were uncertain. This suggests a significant proportion of individuals are aware of their family's health background. Further investigation could explore factors influencing knowledge about familial anemia, potentially aiding in preventative measures and healthcare interventions. Understanding familial health trends can guide personalized health management strategies and public health initiatives.

- Out of 50 respondents, 78% reported having a regular menstrual cycle, while 16% indicated irregularity. Intriguingly, 6% were unsure about the regularity of their menstrual cycles. This data highlights the importance of menstrual health awareness and education, as well as the need for accessible healthcare services to address menstrual irregularities. Understanding the prevalence and factors contributing to irregular menstrual cycles can inform interventions aimed at promoting reproductive health and overall well - being.

- Among the 50 respondents, 30% engaged in physical activity for less than one hour per week, while 54% reported 1 - 3 hours of activity. Interestingly, 16% dedicated more than three hours weekly to physical activity. This data underscores the varying levels of physical activity among the population, with a notable proportion meeting recommended activity guidelines. Understanding these patterns can inform targeted interventions to promote and support physical activity habits for improved health outcomes.

- Among the 50 respondents, 34% reported having a chronic illness or medical condition, while 42% stated they did not have any such condition. Surprisingly, 24% were unsure about their health status. This data highlights the prevalence of chronic illnesses within the population and the uncertainty surrounding health conditions among a significant portion of respondents. Further exploration into health awareness and access to healthcare services could provide insights into addressing health concerns and promoting well - being.

- Among the 50 respondents, 38% reported rarely consuming foods rich in vitamin C, while 42% did so occasionally. Interestingly, 22% stated they frequently consume such foods. This data suggests varying levels of awareness or dietary habits concerning vitamin C intake among the population. Understanding these consumption patterns can inform educational initiatives promoting the importance of a balanced diet rich in essential nutrients like vitamin C for overall health and immunity.

Table 3: Dietary Habits and Nutrition Status of the Participants

S. No	Variable	Particular	F	%
1	Consume Iron - Rich Food	Rarely	11	22%
		Occasionally	15	30%
		Frequently	24	48%
2	Nutritional Supplements	Yes	30	60%
		No	20	40%
3	Overall Nutrition Awareness	0 TO 1	5	10%
		1 TO 5	17	34%
		5 TO 8	24	48%
		8 TO 10	4	8%
4	Servings of Fruits and Vegetables	0 - 2 Servings	17	34%
		3 - 5 Servings	28	56%
		6 OR More Servings	5	10%
5	Specific Dietary Restrictions	Yes	15	30%
		No	35	70%

- Out of the 50 respondents, 22% reported rarely consuming iron - rich foods, while 30% did so occasionally. Notably, 48% stated they frequently consume such foods. This data suggests a considerable portion of the population is attentive to their iron intake, which is crucial for overall health and preventing conditions like anemia. Encouragingly, promoting awareness about the importance of iron - rich foods could further support healthy dietary habits and overall well - being.

- Among the 50 respondents, 60% reported taking nutritional supplements, while 40% indicated they did not. This data highlights a significant reliance on nutritional supplements within the population, potentially indicating a perceived need for additional nutrients beyond what is obtained through regular diet. Understanding the motivations behind supplement usage and ensuring informed decisions regarding supplementation can contribute to better overall health management and address potential gaps in nutritional intake.

- Among the 50 respondents, 10% scored 0 - 1 on overall nutrition awareness, while 34% scored 1 - 5. Impressively, 48% scored 5 - 8, indicating a moderate to high level of nutrition awareness. Only 8% scored 8 - 10, showcasing a relatively smaller percentage with an excellent grasp of nutrition concepts. Understanding these awareness levels can guide targeted educational efforts to improve nutrition knowledge and promote healthier dietary choices for enhanced well - being.

- Among the 50 respondents, 34% reported consuming 0 - 2 servings of fruits and vegetables, while 56% consumed 3 - 5 servings. Surprisingly, only 10% indicated consuming 6 or more servings. This data suggests a significant portion of the population may not be meeting recommended daily intake levels of fruits and vegetables. Encouraging increased consumption through education and accessibility initiatives can promote better nutrition and overall health outcomes within the community.

- Among the 50 respondents, 30% reported having specific dietary restrictions, while 70% stated they did not have any. Understanding the prevalence of dietary restrictions within the population can inform healthcare professionals and policymakers about the diverse dietary needs and preferences of individuals. Tailoring dietary recommendations and ensuring access to suitable food options for those with restrictions can contribute to better nutritional outcomes and overall well - being.

5. Conclusion

- The awareness of nutritional management for anemia among adolescent girls is a pivotal aspects of public health. Through targeted interventions and educational initiatives, we can address the multifaceted nature of anemia and empower young girls to adopt healthier lifestyles. In this Conclusion, we summarize key points, emphasizing the importance of sustained efforts in combating anemia and promoting overall well - being.

- Enhancing awareness of nutritional management for anemia among adolescent girls is crucial for addressing the significant public health burden posed by this condition. Anemia, characterized by a deficiency of red blood cells or hemoglobin in the blood, is a prevalent issue among adolescent girls globally, particularly in low - resource settings. Factors contributing to anemia among this population group include rapid growth and development, menstrual blood loss, socioeconomic

factors, and inadequate dietary intake of essential nutrients like iron, folate, and vitamin B12.

- Nutritional management plays a crucial role in preventing and managing anemia among adolescent girls. Adequate intake of iron - rich foods, such as lean meats, poultry, fish, legumes, and green leafy vegetables, is essential for maintaining optimal hemoglobin levels and preventing iron deficiency anemia. Moreover, ensuring adequate intake of other micronutrients like folate and vitamin B12 is also vital for overall blood health and preventing different forms of anemia.

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