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NUTRITIONAL ATTITUDE ON ANAEMIA AMONG THE SELECTED ANAEMIC ADOLESCENTS GIRLS (12-15 YEARS)

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Abstract:

Adolescent girls are the future mothers. Their health should be taken into concern to yield a healthy generation. Though the world is trembled with several nutritional deficiency diseases, anaemia is a serious nutritional problem which affects people of all ages especially during adolescence. Attitude on anaemia among adolescent girls is one of the steps in targeting the prevention of anaemia. Hence, the present study was conducted among adolescent girls to assess the nutritional attitude on anaemia which will help to frame strategies to combat anaemia. Ethical approval for the study was obtained from the Government Ethical clearance committee. Screening for anaemia was conducted by assessing the haemoglobin level of the 505 adolescent school girls of 12- 15 years. From that, 100 moderately anaemic adolescent girls were chosen for further study. Nutritional status assessment was carried out among the selected subjects. Haemoglobin status (biochemical assessment) of the selected subjects was assessed through cyanomethymoglobin method. A questionnaire on attitude on anaemia was administered to the 100 moderately anaemic adolescent girls to assess their nutritional attitude on anaemia. Results of the study proved that their nutritional attitude on anaemia was good and there is a need for iron rich food supplementation along with nutrition education intervention to combat anaemia.

Key Words: Anaemia, Adolescent Girls, Nutritional Deficiency & Attitude

Introduction:

According to the World Health Organization (WHO), adolescent age group is defined as life span between 10-19 years. This period is characterized by rapid physical, psychological and cognitive development. This is a vulnerable period in the human life cycle for the development of nutritional anaemia. Adolescents make nearly one tenth of Indian population and form a crucial segment of the society (Chapparbandi and Nigudgi, 2017). This is a vulnerable period in the human life cycle for the development of nutritional anaemia. Anaemia is the major public health problem among adolescent girls of the age 10-19 years (Siva, *et al.*, 2016). Anaemia among adolescent girls is the most prevalent nutritional problem worldwide and it is mainly caused due to iron deficiency. Anaemia is the reduction in the haemoglobin concentration of the peripheral blood below the normal range expected for age and sex of an individual (Omer *et al.*, 2015). According to the World Health Organization (WHO, 2018), anaemia is a condition in which the number of red blood cells or their oxygen - carrying capacity is insufficient to meet the physiologic needs. Iron deficiency is thought to be the most common cause of anaemia globally, although other conditions, such as folate, vitamin B12 and vitamin A deficiencies, chronic inflammation, parasitic infections and inherited disorders can all cause anaemia.

Iron deficiency (ID) is the most important cause of nutritional anaemia and is the most common micronutrient deficiency worldwide, especially in developing countries (Betelihem *et al.*, 2015). The most prominent health issues in developing countries like India are anaemia and other malnutrition. The causes are poverty, inadequate diet, acute and chronic diseases, pregnancy/lactation and poor access to health services (Kumar *et al.*, 2015).

Anaemia is one of the leading causes of disabilities. At any age it a has significant negative impact on the health of an individual varying from poor scholastic performance and cognitive impairment in children to one of the major indirect causes of maternal mortalities (Purushothama, 2017). The prevalence of anaemia among adolescents is 27 per cent in developing countries and 6 per cent in developed countries. Anaemia was present in 57.6 per cent of the adolescent girls residing in selected urban slum of Bhopal. Out of which 34.7 per cent had mild, forty five per cent had moderate and twenty per cent had severe anaemia. Twenty nine per cent knew improper diet as a cause of anaemia followed by Vitamin deficiency (25.8%) and iron deficiency (22.3%). About 29.4 per cent girls did not know any cause of anaemia. Similarly 29.4 per cent and 51.7 per cent of study participants did not know about any symptoms and treatment of anaemia respectively (Melwani *et al.*, 2018).

Studies conducted in different regions of India shown that the prevalence of anaemia was 52.5 per cent in Madhya Pradesh, 37 per cent in Gujarat, 41.1 per cent in Karnataka, 85.4 per cent in Maharashtra, 21.5 per cent in Shimla, 56.3 per cent in Uttar Pradesh, 77.33 per cent in Andhra Pradesh, 58.4 per cent in Tamilnadu and in Kerala (19.1 per cent among college students and 96.5 per cent in tribal areas)(Raj and Chopra, 2016).

Objectives:

- ✓ To screen the prevalence of anaemia among the adolescent girls of 12-15 years
- ✓ To develop a rating scale to assess the nutritional attitude on anaemia

- ✓ To assess the nutritional attitude on anaemia among the selected moderately anaemic adolescent girls

Materials and Methods:

Area and Study Subjects:

Three schools from two blocks viz., Dindigul block and Athoor block of Dindigul District were selected. These schools were selected after getting prior permission from the authorities. The investigator selected a total of 505 adolescent girls of the age group 12-15 years for screening anaemia. Prior to the actual conduct of the study, a good rapport was established among the teachers, students and their parents through proper counselling. The purpose and procedure involved in the study were clearly explained. The subjects were motivated effectively through an interactive session by the investigator and teachers to extend their full co-operation for successful conduct of this study. Demographic and socio economic information were recorded using a pre-tested questionnaire. Information on frequency of consumption of foodstuffs was recorded using a food frequency questionnaire. The height and weight of the girls were recorded.

Ethical Clearance:

Ethical approval for the study was obtained from Government Ethical committee. Written consent on willingness was availed from the subjects of the study.

Screening for Anaemia:

Haemoglobin estimation was carried out by cyanomethaemoglobin method. Anaemia was classified as per the World Health Organisation, WHO (2011) severity grading criteria. Thus anaemia is classified as non anaemic (≥12 gm/dl), mild degree (11-11.9 gm/dl), moderate (8-10.9 gm/dl), severe (< 8 gm/dl). Based on the willingness of the subjects, hundred moderately anaemic adolescent girls were selected for further study.

Assessment of Nutritional Attitude on Anaemia:

Nutritional attitude on anaemia was assessed by conducting a test among the selected 100 moderately adolescent girls. A questionnaire was framed dealing with the attitude on anaemia. It was pretested, finalized and administered to all the selected hundred subjects to conduct test on attitude on anaemia. It took around 30-45mins for each subject to complete the questionnaire. Scores were given for all the questions. A scale was developed to assess the attitude levels based on the mean scores under different aspects. The rating scale is given in Table 1.

Table 1: Rating Scale for Assessing the Attitude on Anaemia

Range of Mean Score	Level of Attitude
0-24.9	Poor
25- 49.9	Fair
50 -74.9	Good
75 - 100	Excellent

Analysis and Interpretation of Data:

The collected data were coded, edited and tabulated for arriving at the results.

Results:

The prevalence of anaemia among the 505 subjects of the three schools is given in Table 2.

Table 2: School Wise Prevalence of Anaemia

School	No. of Girls		Non Anaemic		Mild		Moderate		Severe	
	N	%	N	%	N	%	N	%	N	%
School1 (Dindigul Block)	181	17.9	9	0.9	24	2.4	100	9.9	48	4.7
School 2 (Dindigul Block)	78	7.7	22	2.2	12	1.2	40	4	4	0.4
School 3 (Athoor Block)	246	24.3	16	1.6	114	11.3	100	9.9	16	1.6
Total	**505**	**49.9**	**47**	**4.7**	**150**	**14.9**	**240**	**23.8**	**68**	**6.7**

N- Number of adolescent girls

Based on the results of the haemoglobin level and willingness to participate in the study, a sub sample of 100 moderately anaemic adolescent girls with the haemoglobin level of 8-10.9gm/dl was selected for further research. The severe anaemic cases were referred to the Primary Health Center (PHC) and the mild anaemic cases were advised to consume iron rich foods.

Table 3: General Attitude on Anaemia

Attitude	Test Scores of the Subjects (N=100)
Cooking in iron utensils increases the iron content	30
Wearing of slippers prevent hookworm infestation	54
Consumption of lemon juice/orange juice prevents iron absorption	81
Adolescent girls are vulnerable to anaemia	54

Anaemia is more prevalent in rural areas than urban	63
Anaemia in children reduces learning capabilities	68
Average Total Score	**58.3**

N- Number of selected moderately anaemic adolescent girls

It is clear from the above table that the mean score of the attitude level was 58.3 and as per the developed rating scale, the general attitude among the selected anaemic adolescent girls was good.

The attitude of the selected anaemic adolescent girls on prevention of anaemia under various aspects is given in Table 4.

Table 4: Preventive Attitude on Anaemia

Attitude	**Test Scores of the Subjects (N=100)**
Consumption of tea/coffee inhibits iron absorption	49
Consumption of uncooked rice causes anaemia	55
Prevention of anaemia in adolescence prevents anaemia in future	34
Usage of iron knife for cutting vegetables increases iron content	51
Nutrition education is the need of the hour	73
Is it good for an anaemic person to go to a soccerer	59
Anaemia can be prevented through food	76
Prevention of anaemia is expensive	63
Anaemia leads to complications during pregnancy	66
Average Total Score	**58.4**

N- Number of selected moderately anaemic adolescent girls

The mean score of the preventive attitude on anaemia among the selected anaemic adolescent girls was 58.4, which was found to be good when compared with the developed rating scale.

The attitude of the selected anaemic adolescent girls on iron rich foods under various aspects is focussed in Table 5.

Table 5: Attitude on Iron Rich Foods

Attitude	**Test Scores of the Subjects (N=100)**
Greens are rich in iron	52
Lotus stem contains iron	44
Cauliflower leaves possess iron content	54
Iron content of jaggery is higher than sugar	43
Sundakkai is a source of iron iron	55
Amla is rich in vitamin C	61
Deworming tablets destroys the worms in stomach	52
Average Total Score	**51.5**

N- Number of selected moderately anaemic adolescent girls

The development in attitude on iron rich foods is an essential point to prevent anaemia. It was found that the mean score (51.5) of attitude on iron rich foods among the selected anaemic adolescent girls was good as per the developed rating scale.

Conclusion:

Anaemia is a major nutritional problem prevailing world wide. The present study among moderately anaemic adolescent girls revealed that their attitude on anaemia in general and preventive aspects and also on iron rich foods was good when compared with the developed rating scale. An iron rich food supplementation coupled with a good knowledge, attitude and practice will help to combat anaemia.

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