

# **EFFECTIVENESS OF NUTRITIONAL INTERVENTION ON ANEMIA AMONG ADOLESCENT GIRLS WITH IRON DEFICIENCY ANEAMIA IN PUDHUR AT MADURAI CITY**

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## **ABSTRACT**

This study was aimed to assess the effectiveness of nutritional intervention on anemia among adolescent girls with Iron Deficiency Anemia in Pudhur at Madurai City. The conceptual framework of the study was based on the modified revised Pender's Health Promotion Model (2002). The design used for the study was one group pretest posttest pre experimental design. Non-Probability Purposive sampling technique was used to select 50 samples for the study. The tool used for the study was observational checklist and Sahli's Hemometer. Samples were visited every day in their homes and made to consume nutritional balls and one guava. The intervention was done continuously for 30 days. After 30days hemoglobin level was checked and the anemia signs and symptoms were assessed by using observational checklist to find out the level of iron deficiency anemia. The data gathered was analyzed using descriptive and inferential statistics. There is significant difference between pretest and post test score ( $t= 8.94$ ). Statistical analysis showed that the nutritional intervention in posttest was highly significant at  $p<0.05$  level. The study findings revealed that there was a significant improvement in

hemoglobin level followed by nutritional intervention among adolescent girls with iron deficiency anemia.

**Keywords:** *Nutritional Intervention, Adolescent Girls, Iron Deficiency, Anemia*

## **INTRODUCTION**

The term adolescence is derived from the Latin word 'adolescence' meaning, "to grow, to mature". Traditionally, adolescence is defined as the period from the onset of puberty to the termination of physical growth and attainment of final adulthood and characteristic. Adolescence constituted 22.8% of population in India as on 1<sup>st</sup> March 2000 (Ghai O.P., 2004). Daily iron requirements for female adolescents are 2.8mg. According to ICMR recommended dietary intake of iron for 13-15years is 28mg and 16-18years is 30mg. And the daily allowances of vitamin C for adolescents are 30-50mg (Park K., 2009). Lack of dietary iron is the world's leading nutritional deficiency and the most common cause of anemia. Other vitamins that are needed for the body to make red blood cells include folate (folic acid) and Vitamin B12. A lack of these in the diet can also cause anemia (Sharma A., 2008). Family welfare department (2005) explained that anemia is confirmed by checking Hemoglobin level, which must be above 11gm/dl. Then visible signs of anemia such as paleness can be seen in the nails, tongue and inside of lower eyelids.

Suddarthis et.al (2005) reported that food source high in iron include organ meats (beef or calf's liver, chicken liver), other meats, beans (black pinto and garbanzo), leafy green vegetables, raisin, iron rich foods with a source of Vitamin C enhances the absorption of iron. Iron is best absorbed on an empty stomach, so patients should be advised to take the supplements an hour before the meals. Antacids or diary products should not be taken with iron because they greatly diminish the absorption of iron.

Rani.V., et.al (2010) Conducted a study on The Efficacy of a Local Vitamin-C Rich Fruit (Guava) in Improving Iron Absorption From Mungbean Based Meals and Its Effect on Iron Status of Rural Indian Children (6-10 Years) Objective of the study was to assess the effect of mungbean based test meal on iron status (as body iron stores, defined and calculated by the ratio of serum ferritin and serum transferrin receptor) of school age children (6-10 years) with and without the consumption of guava, a vitamin C rich fruit, in a school feeding program for seven months. Study population was three hundred school children aged between 6-10 years

will be recruited from two government school of Mangali village situated in Hisar district of Haryana state. This intervention study will be carried out in a randomized controlled design. Main study parameters/endpoints: Primary outcome will be the measurement of body iron stores (mg/kg of body weight) based on the ratio of serum transferrin receptor to serum ferritin.

### **NEED FOR THE STUDY**

Anemia is the term that indicates a low red cell count and a below normal hemoglobin or a hematocritic level. Among different types of anemia, iron deficiency anemia is the most common nutritional disorder (66-80%) in the world (Sujatha T., 2008). The Community Health Nurse has a major role in identifying the prevalence of anemia mainly among the adolescent's girls. Most important is to instigate the intake of low cost iron rich diet among the people, by which anemia can be prevented in the community. During the community posting while doing the physical assessment for the adolescent girls, the researcher found most of the adolescent girls were having iron deficiency and unaware about iron rich diet. So the investigator felt the need to improve the hemoglobin level of the adolescents girls, for that the researcher intended to intervene by nutrition supplementation of iron rich nutritional balls with Vitamin C rich food (guava) to the adolescents girls.

### **OBJECTIVES OF THE STUDY**

- To assess the effectiveness of nutritional intervention among adolescent girls with iron deficiency anemia.
- To find the association between the post test level of iron deficiency anemia with their selected demographic variables.

### **METHODS AND MATERIALS**

The study was conducted at Pudhur area, which comes under Madurai City. The total population was 413. In this the adolescents were 91. In that the girls were 91. The area consists of 7 streets. Most of the 41 people are coolie workers going for construction work and others include tailors, shop workers, and mill workers. The population for this study was the adolescent girls. Adolescent girls between the age group of 13 to 19 years. Sample size of this study was 50 adolescent girls.

**DATA ANALYSIS AND INTERPRETATION**

Association of the level of iron deficiency anemia with their selected demographic variables

	<b>Mild</b>	<b>Moderate</b>	<b>Severe</b>	<b>Statistical inference</b>
<b>Age</b>				
13 to 14yrs	6	3	0	$X^2=1.784$ Df=1 P>0.05 Not Significant
15 to 16yrs	4	3	0	
17 to 18yrs	7	5	0	
19yrs	12	10	0	
<b>Educational qualification</b>				
Below Primary	10	9	0	$X^2=1.647$ Df=2 P>0.05 Not Significant
Above Primary	19	12	0	
<b>Type of food</b>				
Vegetarian	4	3	0	$X^2=1.081$ Df=1 P>0.05 Not Significant
Non-Vegetarian	25	18	0	

Chi-square value was calculated to find out the association between the nutritional intervention among adolescent girls with iron deficiency anemia with their selected demographic variables such as age, education, type of food consumption and source of health information. The demographic variables like age, education, type of food consumption, source of health information had no association with hemoglobin and signs and symptoms scores of iron deficiency anemia after nutritional intervention among adolescent girls. Therefore there was no significant association between the post test level scores of iron deficiency anemia with their selected demographic variables.

## CONCLUSION

The present study assessed the effectiveness of nutritional intervention among adolescent girls with iron deficiency anemia. The study findings revealed that there was a significant difference in the pre and post test nutritional intervention score. Therefore the investigator found out it is evident that the nutritional intervention is effective in reducing iron deficiency anemia among adolescent girls.

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