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EFFECT OFANEMIA EDUCATION MODULE ONHEMOGLOBIN STATUS OF ADOLESCENT GIRLS

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Abstract

Iron deficiency anemia affects millions of Females of reproductive years. It is eroding the development potential of individuals, societies, and national economies. This research work is aimed at improving the hemoglobin status of adolescent girls through the standardized anemia education module. The study was conducted at yavatmal a district place of Maharashtra. The statistical values shows the positive improvement in the hemoglobin status of adolescent girls. Mean hemoglobin level increases from 10.85 to 11.13 g/dl, and the t value shows the significant change in hemoglobin status of adolescent girls at 5% level of significance, thus anemia education module provide an alternative measure in decreasing the prevalence rate of anemia in adolescent girls.

Key Words: Hemoglobin, Anemia, Adolescent Girls

Introduction:

Invisible yet ubiquitous in many developing countries, the true toll of iron deficiency and anemia lies hidden in statistics of overall death rates, maternal hemorrhage, reduced school performance and lowered productivity. Iron deficiency anemia affects millions. The health consequences are stealthy but devastating, invisibly eroding the development potential of individuals, societies, and national economies. (1) Prevalence of anemiain various countries in Asia is much higher. The South East Asia Region is seen to have the highest prevalence of anemia and iron deficiency and the greatest numbers of population affected including 24.8 million pregnant women and 111.4 million children under the age of 5 years.(2). Latest survey (2005-2006) conducted by NFHS-3 stated that as many as 79 per cent of Indian children between the age 3 to 6 years and 56.2 per cent of married women in the age group 15-49 years were found to be anemic, the figure for the latter was 51.8 per cent in 1999. The survey revealed that among the states, Assam is the worst affected with 72 per cent of married women being anemic followed by Haryana 69.7 per cent and Jharkhand 63.4 per cent. Among the worst hit states, 79 percent children in Andhra Pradesh, 79.8 percent from Rajasthan and over 82 percent from Karnataka and Madhya Pradesh suffer from anemia. (3).

The term 'Adolescence' derives from the Latin word 'Adolescer' meaning is to grow into maturity. Adolescence is an important stage of life for physical growth and sexual development. In girls physiological preparations for motherhood occur during this period. More than 20 per cent of total growth in stature and up to 50 per cent of the adult bone mass is achieved during adolescence hence nutritional requirement is significantly increased from the childhood years. It is well documented that the growth velocity during adolescence is slower in undernourished populations.When such adolescents become pregnantthe chances of cephalopelvi disproportion and risk of maternal and fetal mortalityincrease. Further, the health and nutritional status of today's adolescent girls may have a profound influence on the quality of subsequent generations.(4)

About two thirds of children and women of child bearing age in India are estimated to be suffering from iron deficiency anemia. Therapeutic dosing of iron is a short term measure to correct iron deficiency anemia. Though the National Nutritional Anemia prophylaxis program, now known a National Nutritional Anemia Control program, has been in operation throughout India for many years, recent studies show that this strategy has not been effective. The profound negative effects of iron deficiency in the health of women put tremendous economic burden on families and nations.(5) Hence tackling anemia during adolescence in girls may be more rewarding than trying to correct it during pregnancy. Nutrition Education is an effective means to correct nutritional deficiencies.

This research work focused on construction of anemia education module for improvement of Hemoglobin status in adolescent girls.

Material and Method

Study Area and Sample Selection.

The research work was done in the district place yavatmal of Maharashtra. Sample

of 300 adolescent girls of age group 14-15 years old studying in government aided Girls High School were selected by random sampling technique.

Construction of Anemia Education Module:

Anemia Education Module was constructed with the help of nutritionist, gynecologist and pathologist. They were involved in formulation and standardization of module. The module was in the form of self- explanatory colorful booklet included scientific knowledge about anemia ,its causes, symptoms, effects, sources and RDA of iron, folic acid,vitamin B12 and ascorbic acid for adolescence age group.

Implementation of the Education Module

Experimental Research Design as 'Before-and-after without control design' was used in research work. The study was conducted in selected girls high school. In experiment the hemoglobin status of 300 selected samples were analyzed by experts. Cynmethemoglobin method was used for hemoglobin test. The dietary intake was assessed by 24hours recall method. The implementation of anemia education module included the classroom teaching on anemia, distribution of booklet, exhibition of iron, protein, and vitamin C rich recipes. The duration was of three months. The dietary intake and hemoglobin status were again analyzed. Obtained data was statistically analyzed for the results. T test was used for interpretation of data.

Result and Discussion:

Before implementation of educational module the normal Hemoglobin status was observed in 24.67 % of girls and 75.33 % were anemic (Hemoglobin < 12g/dl). 51.33% girls were mild anemic, 22.0% moderate anemic and 2.0% were severe anemic. The mean Hemoglobin level was 10.8 g/dl ±1.43 SD. After education normal hemoglobin status was observed in 39.67 % girls, and 60.33% girls were anemic (Fig1,2)

Mean dietary iron intake before education was 22.21mg increased to 25.80 mg.the percentage change was 19.9%,t value 10.57 suggested the significant change at 5% and 1% level of significance. The mean protein intake was 50.7 gm increased to 53.2 gm/day the percentage increased was 4.9 %, and the t value 4.43 suggested the significant increase in protein intake at 5% and 1% level of significance. The mean Folic Acid intake raised from 78.1 to 83.5 mg/per day. The percentage change in mean folic acid intake was 7 %, and

the t value 4.180 suggested the significant change at 5% and 1% level of significance. The mean Vitamin C intake was found to improve from 33 mg to 37.3mg /day (Fig3). The change was 13.2% which was significant at 5% and 1% level of significance (t=8.915).The mean hemoglobin level before education was 10.82 g/dl increased to 11.13 g/dl. The mean hemoglobin status improved by 2.8 % and the change was significant at 5% level of significance (t=2.670).
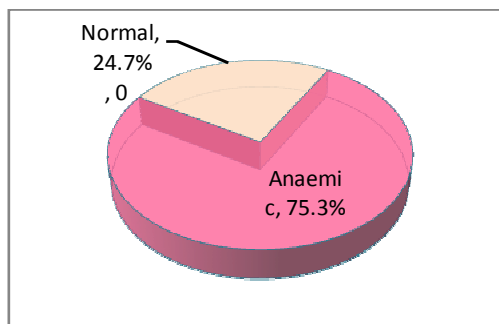

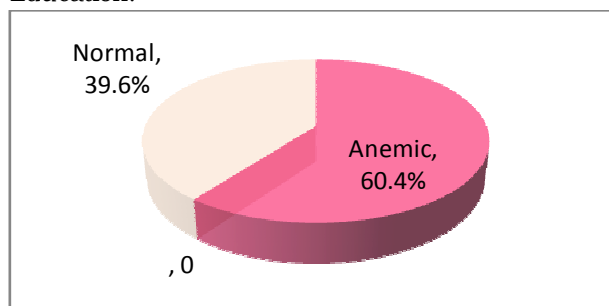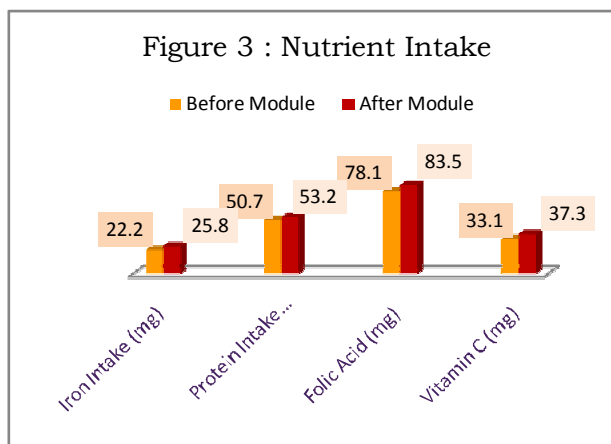Figure 1 Anemia in Adolescent Girls Before Education.

Figure 2 Anemia in Adolescent Girls After Education.

Conclusion

Maintaining normal hemoglobin status in females throughout the reproductive years of life will reduce the prevalence of anemia and the mortality rate in India. The result of this research shows the strong evidence that anemia education module improves the hemoglobin status in adolescent girls. Education brings the permanent change in the behavior of human being than the supplementation program.

Acknowledgement

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