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Anaemia among female undergraduates and faculty members in a college of Bhagalpur

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ABSTRACT

Adolescent girls form a crucial segment of the population and constitute as it were the vital 'bridge' between the present generation and next. In country like India one half all children and adolescents fail to achieve their full genetic growth potential due to the combined effects of inadequate nutrition and fragment illness. Moreover, due to faulty dietary habits, ignorance and with a multitude of social custom and beliefs cited against women the prevalence of nutritional deficiencies amongst girls remains quite high. Anaemia not only affects the present health status, but also in learning, cognitive function and academic scholastic performance.Aims Objective: 1. To assess the prevalence of anaemia among undergraduates. 2. To determine the magnitude of anaemiaMaterial and methods: present cross sectional study was conducted on 98 girls and 27 faculty members from Sunderwatimahila college,Bhagalpur,Bihar. Which is educating the girls mostly belongs from middle and low income group family. In a Campus the health awareness programme was carried out by I .M.A., Bhagalpur on the occasion of world health day (7th April,2015). In which Blood sample of 125 subjects were analysed and further classified according to WHO guidelines to assess its severity. Results:In the present study, it was found that 100% undergraduates of the college were suffering from various degrees of anaemia and among the faculty 18.52% of non anaemic cases were found. Considering severity of anaemia 1.19% girls weremildly anaemic, 97.62% moderately and 1.19% severely anaemic.In the other part of the study which was performed on faculty members 18.52% mildly and 62.96% moderately anaemic. Considering 12 gram/ dl as the cut off level of haemoglobin as per WHO guideline. Conclusion: So, it can be concluded that females were susceptible to anaemia with highest prevalence in age group of 15 years- 19 years and knowledge regarding this particular subject was poor. This kind of awareness programme might be enhancing the health status.

Key Words : Adolescent girls, Anaemia, Undergraduates, Faculty.

INTRODUCTION

Anaemia is a major public health concern throughout the world mainly affecting young population, females in their reproductive years. Young population ranges from 10-24 years of age which includes adolescents and youth both adolescence refer more broadly to the phase of human development encompassing the transition from childhood to adulthood.In term of age it is the period of life that is extended from 10-19 years referred as adolescence,19-24 years age termed as youth (Park, 2011).This is also the period of preparation for undertaking greater responsibilities including decision for study, to earn livelihood andhealthy responsible parenthood, future of the society. The need for more iron

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during this period is due to growth spurt and the onset of menstruation. Inadequate iron storage during younger age before conception leads to iron deficiency anaemia during which aggravates the risk of maternal death due to anaemia (Kishor, 2011). Iron deficiency anaemia is an underlying risk factor for maternal and prenatal mortality and morbidity it is estimated to be associated with 22% maternal death and 24% prenatal death occurring annually around the world (Stotzfus, 2004).Within the family, compared to boys,the girlshealth, nutrition, education and development are more neglected which has adverse affect on reproductive health. Young girls face more problems than boys largely done to socio-cultural factors. There are limited choices availablefor the future girls are caught in the cycle of early marriage, pregnancy and child bearing.Woman of child bearing age are having an additional risk of developing anaemia because of their monthly menstrual blood loss and hereby 50% of females in age group are anaemic (Kaur and Kaur, 2011)when the prevalence of anaemia is 20-39.9% of general population it is considered as a moderate public health problem by WHO. The highest number of individuals affected by anaemia observed in non pregnant woman aged between 15-49.9 years (WHO, 1993-2005). It is a public health problems in 191 countries out of the 192 member countries of WHO.On average healthy woman loss about 25-30 ml of blood monthly Therefore the body needs to produce blood in order to compensate for this loss if the essential nutrients are not supplied in the diet, anaemia will develop. It is the condition in which the number of red bloodcells or their oxygen carrying capacity is in sufficient to meet the physiological needs and this varies for age, sex, attitude and pregnancy status (WHO, 2011).The risk factors for IDA include a low intake of iron, poor absorption of iron from diets high in phytate or phenolic compounds and in early period of life when iron requirements are expectedly high (Gillespie, 1990), also the Inadequate absorption of dietary iron in highly contributory to the high prevalence of anaemia in the developing countries of Asia and other regions except where it is caused by infections such as hook warm and malaria. Poor absorption of dietary iron can be due to substance which interfere with it absorption such as pump inhibitors,calcium supplements and dairy products (Taylor, 2007). Therefore iron deficiency anaemia (IDA) is a formidable health challenge in developing countries and remains persistently high despite national programs to control this deficiency. This in turn may adversely affect learning scholastic performance of adolescent and also reduce physical woks capacity (Kanani and Poojara, 20001).Hence, the present research was planned with the objective of to screen undergraduates and faculty for the prevalence of anemia and to assess the type of anemia according to severity.

METHODOLOGY

The present cross rational study was conducted in Sunderwati Mahila College of Bhagalpur, Bihar. This is educating the girl who mostly belongs from middle income and low income group family. On the occasion of world Health Day *i.e.* 7th April 2015. On this particular Day a "Urban Heath awareness program" was conducted by Indian medical association, Bhagalpur.The study involved 125 healthy girls and the faculty members. out of which 98 girls were in the age group of 15-24 years and 27 faculty members whose age were more than 25 years. Including male respondents.Before beginning of the program the participants were briefed about the purpose of the study and then who were willing to give their blood samples, only those blood samples were taken by Exure pharma and further analysed.After that for the purpose of this study classification of anaemia was done by the researcher as per WHO classification.

Classification	Range (Hb/gram/dl)
Non anaemic	Greater than 12g/dl
Mild	10-11.9 g/dl
Moderate	7-9.9 g/dl
Severe	Less than 6.9g/dl

This intervention consists of various lectures which were delivered by President I.M.A. Dr. S.C. Jha, Dr. Rekha Jha, Secretary Dr. Pratibha Singh, Dr. Kiran Singh, Dr.Vasundhara Lal and Dr. Maridula Kumari. On the various topics related to woman's health.Which includes topic like nutritional deficiency disorders common in India with special emphasis on iron deficiency anaemia, sources of Iron, symptoms of iron deficiency its prevention and treatment, cervical cancer,and the food safety for approx four hours. To make them understand different kinds of posters regarding balance diet, component of food, nutritional disorders common among women were exhibited.After that there was an inter active session in which doctors actively participated with the students present in very large numbers and also they were cleared about their queries regarding different aspects of female's Health related problems and nutrition. At the end of their awareness program free iron supplements (Tablets) were distributed among the girls those who were observed anaemic.

RESULTS AND DISCUSSION

The end result of Iron deficiency is nutritional anaemia which is not a disease entity. It is rather a syndrome caused by malnutrition in its widest sense. Besides amaemia there may be rather functional disturbances such as impaired cell mediated immunity, reduced resistance to infection, increased morbidity and mortality and diminished work performances (Shrilakshmi, 2003).The reasons for the high incidence of anaemia among the adolescent girls are starting menarche, growth spurt with a suboptimal hematopoietic contains, gender discrimination, increased iron requirements because of menstrual loss, discrepancy between high iron needed for haemoglobin formation and low intake iron, Containing foods, erratic eating habits, dislikes of food which are rich in iron like green leafy vegetables, iron absorption inhibitors In foods phytates/ tannias (Kishor, 2011).In the present study it was found that all the students (n=98) 100% were suffering from various degrees of anaemia (Fig. 1) and among the faculty member which includes male also (n=5) 18.52% were non anaemic rest (n=22) 81.48% were anaemic (Fig. 2).

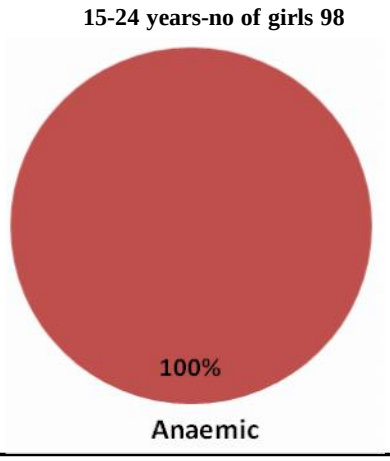

Fig. 1 : Suffering from various degrees of anaemia below 24 years

Prevalence of anaemia according to the severity :

Indicated that it was a public health problem ofa high magnitude as per the WHO guidelines. In a multi country study on the nutritional status of adolescents which was carried out by the International centre for research on women (ICRW) anaemia was found to be most wide spread nutritional problem

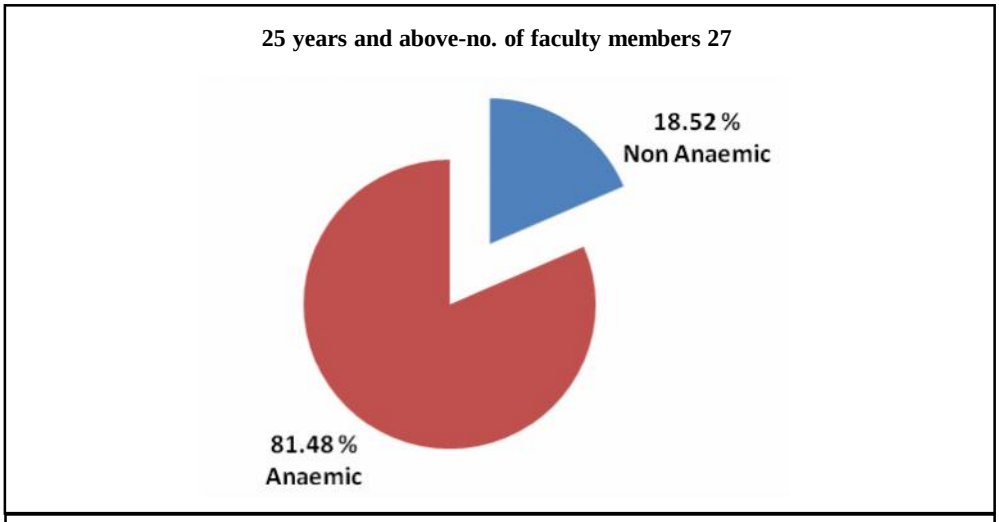

Fig. 2 : Suffering from various degrees of anaemia 25 years and above

as its prevalence ranged from 32-55 % (Basu *et al.*, 2005).A research carried out in the kingdom of Saudi Arabia in king Abdullaziz university has revealed the prevalence of anaemia to be 26% among female university student (Sayes *et al.*, 2011) also 26.7% of prevalence was found among female students in a research carried in the university of Sharjah (Sultan). Prevalence of anaemia was found to be 23.9% among university of Peshwar in Pakistan (Khan *et al.*, 2010). In Indian, study was conducted among the girls who belong to the low income family in Vadodra revealed that 67% of the adolescent girls were anaemic (Sen and Kanari , 2006) studies which were conducted in rural Wardha and Lucknow to estimate the prevalence of anaemia among adolescent girls, found that the prevalence of anaemia in those areas was 59.8 % and 56%, respectively (Joseph *et al.*). In a study which was carried in rural south india, it was found that 30% of the adolescent girls were anaemic (Singh *et al.*, 2006).Thus the results of various studies national or international which have been mentioned above demonstrated that the prevalence of anaemia was very high in other parts of the world. But in this present study the prevalence of anaemia was 100 % among the undergraduate girls that is extremely

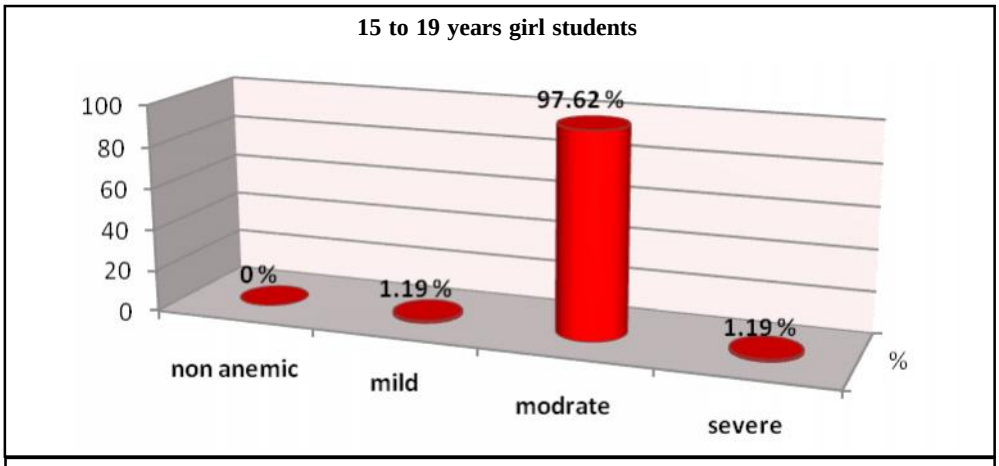

Fig. 3 : Prevalence of anaemia according to the severity (15 to 19 years girl students)

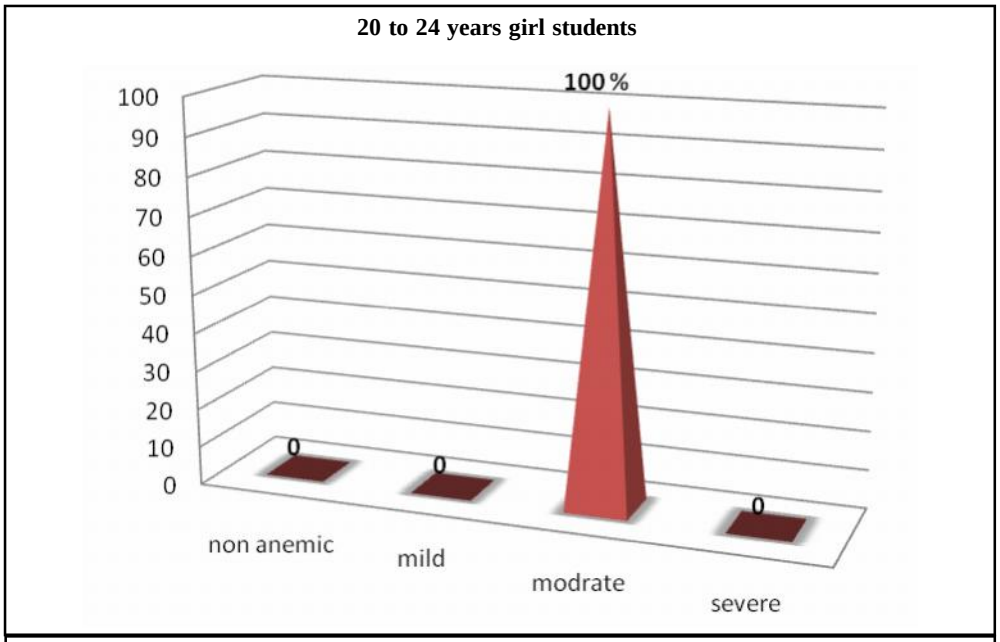

Fig. 4 : Prevalence of anaemia according to the severity (20 to 24 years girl students)

high in comparison with other studies done. This indicated the importance of including adolescents in the risk group to improve their iron status through prophylaxis treatment and dietary modification.

In the study the prevalence of anaemia is further classified according to the magnitude. Considering severity of anaemia among 15 years -19 years girls 1.19 % were mildly anaemic (Hb=11.0-11.9 g/ dl), 97.62% were moderately anaemic (Hb=7 – 10.9 g/dl) 1.19% was the case of severe anaemia (Hb- < 6.9 dl/g).Similarly, in the age group of 20 years to 24 years 100% respondent were found moderately anaemic (Hb=7 to 10.9 mg/dl .In the other part of the study which was performed on faculty members out of the total 18.52% were found non- anaemic (Hb<12 g /dl),18.52% mildly anaemic (Hb=10-11.9 g/dl) and 62.96% moderately anaemic with haemoglobin level (7-9.9 g/dl) (Fig. 5).

Similar, result were seen In a study which was conducted in three districts of Orissa to assess the haemoglobin status of non school going adolescent girls, in which it was revealed that 96.5% of the subjects were anaemic, of which 45.2%,46.9% and 4.94% were found to have mild, moderate and severe anaemia respectively (Bulliff *et al.,* 2007). A study which was conducted in Ahamedabad revealed that 52.2% were mildly anaemic, 44.9% were moderately anaemic ,and that 0.6% were severely anaemic .When the findings were compared with the faculty members there were 18.52% cases of non-anaemic subjects.But there was not a single case of non anaemic subjects in age group of 15-24 years. That clearly revealed that the prevalence was much higher than other groups as they are most vulnerable among all the ages. A high prevalence of mild and moderate anaemia demands due emphasis on iron and folic acid supplementation and health education on the consumption of iron rich foods so as to bring down the total prevalence of anaemia among adolescent girls.Keeping this in the mind urban health awareness program organized by I.M.A., Bhagalpur and the subjects who were observed anaemic free iron supplements were distributed among them.

Conclusion:

In Conclusion,the present study revealed that both the undergraduate's students and faculty

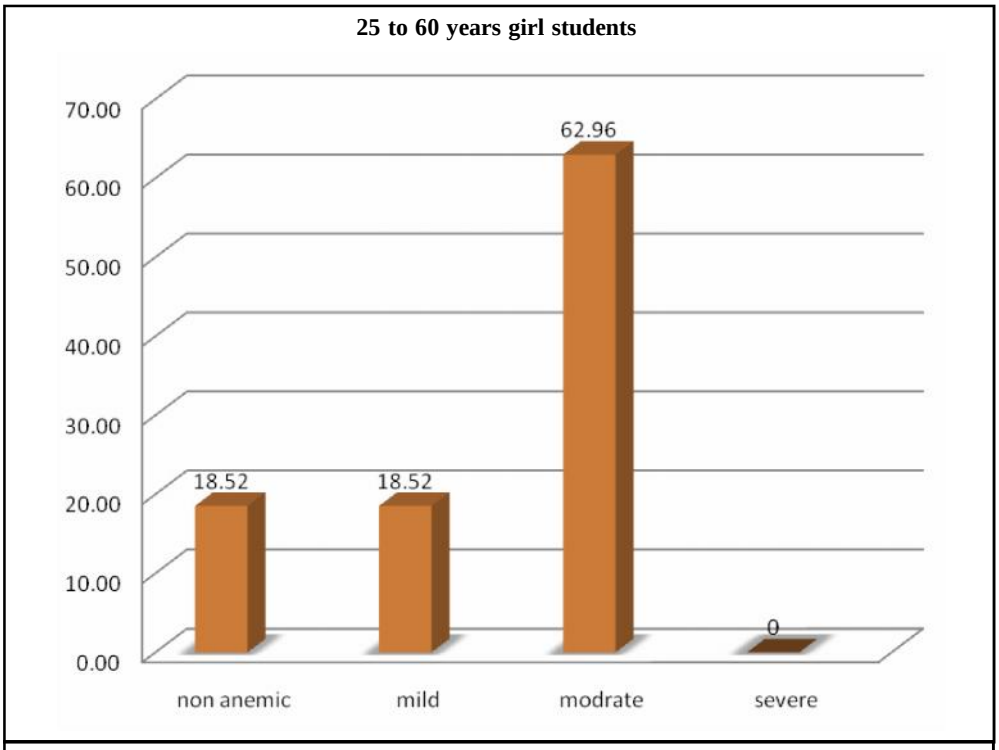

Fig. 5 : Prevalence of anaemia according to the severity (25 to 60 years girl students)

members were susceptible to anaemia with highest prevalence in age group of 15-19 years. Therefore an informative and educable intervention program like this will definitely has a positive effect on awareness levels which would eventually encourage expansion of knowledge and a positive healthy habits.

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