Prevalence of Anemia among Students of Nursing School of Vadodara

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Iron deficiency is the most common nutritional disorder in the developing world and the most common cause of nutritional anemia in young children and women of reproductive age. With 40% prevalence of anemia in the world, an average for the general population, the prevalence in the developing countries tends to be three to four times higher than in the developed countries.

Iron requirements increase significantly during certain periods of life, thus placing individuals during these periods at greater risk of deficiency. Adolescence is one of the most vulnerable periods in human life cycle when nutritional requirement increases due to the adolescent growth spurt.

In studies conducted in developing countries, adolescent anemia is one of the greatest nutritional problems. Around 60% of the adolescent girls in rural areas in India have been found to be anemic. National Family Health Survey II (NFHS II) reported anemia prevalence of 46% among women (age 15-49 years) in Gujarat. 74.7% of the schoolgirls of Vadodara district studying from 8th to 12th standard were anemic.

It is becoming increasingly evident that control of anemia in pregnant women may be more easily achieved if satisfactory iron status of the adolescent girls can be ensured prior to their marriage.

The School of Nursing situated at Vadodara offers a three-year undergraduate course in nursing. The authors are Project Assistant and Professor & Head of Department of PSM respectively at Medical College, Vadodara.

There are about 60 students enrolled every year. They come from different socio-economic backgrounds; a majority of them are females. The present study aimed at measuring the magnitude of anemia prevalence among the student nurses of Vadodara.

Broad Objectives

- Measure the prevalence of anemia among the student nurses of Vadodara.

Specific Objectives

- Measure the prevalence of anemia.
- Measure the severity of anemia using different cut-off.
- Compare the nutritional status with the prevalence of anemia.
- Find out the willingness of the student nurse to participate in the intervention programme of Iron Folic Acid (IFA) supplementation.

Methodology

Study Unit

All female student nurses of first, second and third year between the age (17-21 years) studying at Nursing School Vadodara were studied.

Data collection

All the students were administered a structured questionnaire, which provided basic demographic information. The proforma also included question on their willingness to participate in the supplementation programme.

Each student after she completed proforma was directed for the measurement of height and weight to be taken by the Public Health Nurse. These data were recorded in the proforma. For blood collection, all the participants were directed to Out Patient Department of SSG Hospital where the blood was collected by two investigators using sterile glass syringes and needle (size 22G) into the pre-coded EDTA bulbs.

Laboratory Estimation

The blood so collected was then brought to the central laboratory of Pathology Department of Medical College, Vadodara, for investigation, where the hemoglobin was estimated using cyanomet-hemoglobin method.

Data Management and Analysis

The data obtained from the laboratory and from the questionnaire were entered into the computer in epi info record format. The data entered was checked for inconsistency if any and then subjected to appropriate statistical analysis using epi info.

Results and Discussion

A total of 167 student nurses were studied with age ranging 17 to 21 years.

Anemia Prevalence

Anemia prevalence was 80.8% (C.I. 80.7% - 91.6%) in the students. Students having Hb levels less than 120g/L were considered anemic. The mean Hb among these students was 105g/L with standard deviation of 14.7 gm/L.

Severity of Anemia

Defining severe anemia as hemoglobin values less than 70 gm/L, moderate anemia as hemoglobin...
value between 70 and 99.9 gm/L and mild anemia as hemoglobin value between 100 and 119.9 gm/L, the prevalence of severe, moderate and mild anemia was 1.2%, 43.11% and 42.5% respectively. 1.2% of students had hemoglobin value less than 70gm/L, 43.7% had less than 110 gm/L and 71.3% had less than 115 gm/L.

Body Mass Index of the girls
World Health Organization (WHO) has suggested the use of reference value for body mass index (BMI) for adolescents by age and sex as given by Murat et al. Under nutrition as defined by BMI less than 5th percentile was present in 29.3% of students, 68.3% had normal BMI, and 2.4% had BMI above normal.

Anemia and BMI
Anemia was uniformly widespread among all levels of nutritional status among the students studied. The prevalence of anemia remained high and did not differ significantly between all the three groups of BMI viz. between those who were below normal, normal and above normal as defined by BMI. This also suggests that in higher social classes where girls might be nutritionally better off, the anemia prevalence still could be high.

Mean height, mean weight and mean BMI were almost equal in both anemic and non-anemic students and did not differ between anemic and non-anemic students statistically.

Readiness of the Student Nurses to take once a Week IFA tablet
When enquired whether the students were ready to consume IFA tablets, on the voluntary, almost all (97.6%) students volunteered to consume the tablets.
When asked whether they had ever been advised iron tablets and whether they had consumed them in the past, 16.3% (27166) students had a history of IFA tablets consumption in the past. Of the 166 students who had the history of iron consumption, 88.9% (24) students were anemic. This suggests that diagnosis and advice received about anemia did not result in adequate treatment or poor compliance with the treatment. Thus there is a need to emphasize on regularity of the treatment and advocating then the importance of regularity of treatment.

Conclusions
The following conclusions can be drawn from present study:

- Anemia prevalence in student nurses in Vadodara is very high.
- The mean Hb among these students was 100.03 gm/dl with standard deviation of ±14.7.
- The prevalence of severe, moderate and mild anemia was 1.2%, 43.11% and 42.51% respectively.
- The prevalence of anemia remained high and was independent of the nutritional status.
- Given the option of treatment supplementation they are ready to take tablets regularly.

Recommendation
A control programme in form of once weekly IFA supplementation and education should be done with 97.6% student nurses ready to take IFA tablets.

References