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Original Research Article

Impact of educational intervention regarding anaemia and its preventive measures among adolescent girls of Government Arts College of Vadodara, Gujarat, India

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ABSTRACT

Background: The nutritional and the health needs of the adolescents more because of the growth spurt and the increase in physical activity. So, they are at high risk for anaemia and malnutrition. Objective was to assess knowledge of adolescent girls regarding anaemia and its preventive measures before and after educational interventional training.
Methods: The present study was an interventional study undertaken in purposively selected Government Arts college of Vadodara city during June to September 2019. Total 100 adolescent girls between the age group of 17-19 were included after written informed consent. Baseline knowledge of adolescent girls regarding anaemia and its preventive measures was assessed by pre-designed, pre-tested and semi structured questionnaire. Single educational interventional training for 45 minutes was given to selected adolescent girls. Post-intervention knowledge of students for the same was assessed after training. Thus, collected data was analyzed using SPSS 17 (Trial Version).
Results: Baseline knowledge of the adolescent girls regarding causes, signs and symptoms of anemia and dietary sources of iron was 23%, 40% and 25% respectively which was significantly increased to 66%, 72% and 55% respectively after the intervention. Baseline knowledge of the adolescent girls regarding factors which inhibit and increase iron absorption was 4% and 30% respectively which was significantly increased to 41% and 79 % respectively after the intervention. Baseline knowledge of the adolescent girls regarding treatment of anaemia was 21% which was significantly increased to 64 % after the intervention.
Conclusions: Single educational session significantly improve the knowledge of adolescent girls regarding anaemia and its preventive measures.

Keywords: Adolescent Girls, Anaemia, Iron, Knowledge, Prevalence

INTRODUCTION

Adolescent constitutes over 23% of the population in India. Adolescence is the phase of human development which includes the transition from childhood to adulthood.[1] Adolescence period is the formative period in the life of an individual, when major physical, psychological and behavioral changes take place, so adolescence period is very crucial.[2] The growth spurt and the increase in physical activity in adolescence period increases the nutritional and the health needs of the adolescents.[3]

In females, adolescence marks the beginning of the menstrual cycle or reproduction. During growth spurt,

adolescents gain 30% of their adult weight and more than 20% of their adult height between 10-19 years.[4] Adolescent girls are at a high risk for anaemia and malnutrition. Inadequate nutrition during adolescence can have serious consequences throughout the reproductive years of life and beyond.[5] Early marriage and early pregnancy even before the growth period is over, doubling the risk for anaemia.[6] The nutritional anaemia in adolescent girls increases maternal mortality rate, incidence of low birth weight babies, perinatal mortality and the consequent fertility rates.

As young people become increasingly independent, they face significant choices in areas such as diet, substance use, sexuality, physical activity and use of health care services. Education can be given to adolescents in college about health, hygiene and nutrition, and for putting in place interventions to promote the health of adolescents. Health problems e.g. nutritional anaemia, iron deficiency anaemia has their early origins in early adulthood, because this is the time when lifestyles are formed. Adolescents should be encouraged to adopt healthy lifestyles as primordial prevention. The main intervention in primordial prevention is achieved through individual and mass education.[7] With this background in mind, the present study was undertaken to know impact of educational intervention regarding anaemia and its preventive measures before and after training among adolescent girls of Government Arts College of Vadodara city.

METHODS

The present study was an interventional study undertaken in purposively selected Government arts college of Vadodara city during June 2019 to September 2019. Out of total 293 adolescent girls 100 adolescent girls between the age group of 17-19 were included after written informed consent.

Inclusion criteria

Those girls who gave the consent and between the age groups of 17-19 were included in the study.

Exclusion criteria

Those girls who did not give the consent and above the age of 19 years were excluded from the study Baseline knowledge of adolescent girls regarding anaemia and its preventive measures was assessed by pre-designed, pre-tested and semi structured questionnaire. Questionnaire was converted in vernacular language for assessment. Single educational interventional training for 45 minutes was given to selected adolescent girls with lecture with power point presentation, charts, demonstration and discussion. In the educational session causes, signs and symptom and anemia was covered. All students also informed about dietary sources of iron, foods which increase the absorption of iron and foods which decrease the absorption. Post-intervention knowledge of students for the same was assessed after training by same questionnaire. Pre and post training assessment was done by scoring method. Data was entered in Microsoft Excel and analysis was done using SPSS version 17 (trial version). Before conducting the study, approval was obtained from institutional ethical committee for human research.

Data safety and confidentiality was also given due consideration. The file containing identity related details was kept password protected and the filled Performa were kept in lock with key accessible only to researcher. Parameters such as rate, ratio and percentages were calculated. In order to have valid interpretation of rates, 95% confidence intervals (CI) were calculated. To test the significance of the difference among the statistical parameters in different subsets of population, suitable statistical tests were applied. They included mean, standard deviation and Wilcoxon sign rank test.

RESULTS

Mean age of the girls was 18.5±0.4years. Baseline knowledge of the girls regarding causes of anaemia was 23% which was significantly increased to 66% after the intervention. (Figure 1, p<0.001) Baseline knowledge of the girls regarding signs and symptoms of anaemia was 40% which was significantly increased to 72% after the intervention.

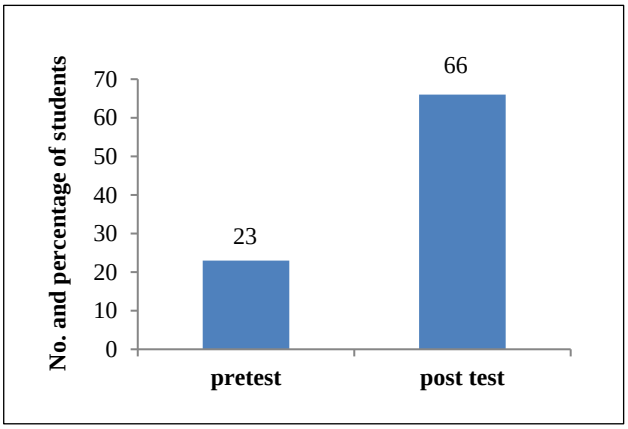

Figure 1: Distribution of the students according to knowledge of causes of anaemia before and after training.

(Figure 2, p<0.001) Baseline knowledge of the girls regarding dietary sources of iron was 25% which was significantly increased to 55% after the intervention. (Figure 3, p<0.001) Baseline knowledge of the girls regarding factors which inhibit the absorption of iron was 4% which was significantly increased to 41% after the intervention. (Figure 4, p<0.001) Baseline knowledge of the girls regarding factors which increase the absorption of iron was 30% which was significantly increased to 79% after the intervention. (Figure 5, p<0.001) Baseline

knowledge of the girls regarding treatment of anaemia was 21% which was significantly increased to 64 % after the intervention. (Figure 6, p<0.001).

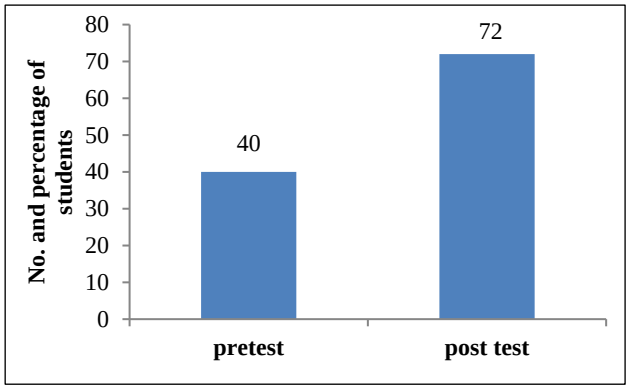

Figure 2: Distribution of the students according to knowledge regarding signs and symptoms of anaemia before and after training.

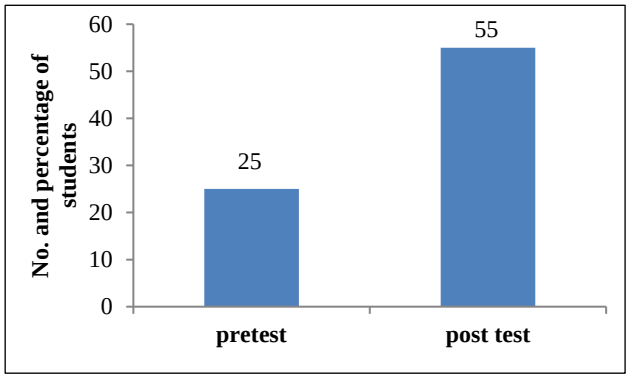

Figure 3: Distribution of the students according to knowledge of sources of iron before and after training.

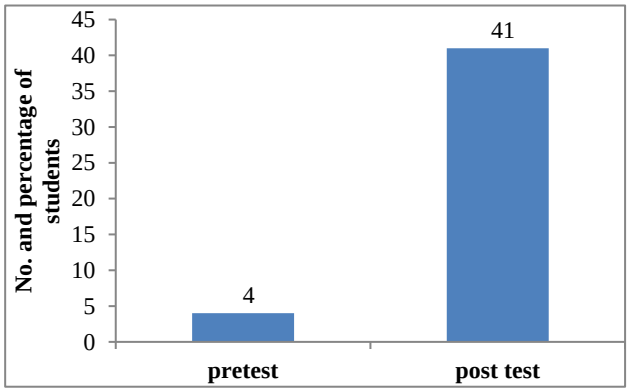

Figure 4: Distribution of the students according to knowledge of factors which inhibit absorption of iron before and after training.

DISCUSSION

In this study baseline knowledge of the girls regarding causes of anaemia was 23% which was significantly increased to 66% after the intervention. Baseline knowledge of the girls regarding signs and symptoms of anaemia was 40% which was significantly increased to 72% after the intervention. Baseline knowledge of the girls regarding dietary sources of iron was 25% which was significantly increased to 55% after the intervention. Baseline knowledge of the girls regarding factors which inhibit the absorption of iron was 4% which was significantly increased to 41% after the intervention and baseline knowledge of the girls regarding factors which increase the absorption of iron was 30% which was significantly increased to 79% after the intervention. Baseline knowledge of the girls regarding treatment of anaemia was 21% which was significantly increased to 64% after the intervention.

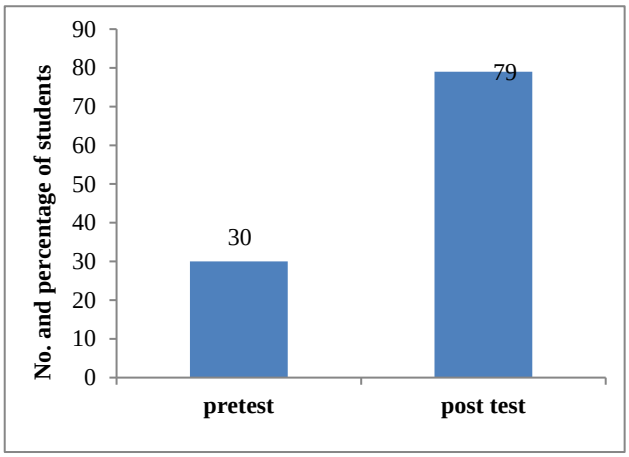

Figure 5: Distribution of the students according to knowledge of factors which increase absorption of iron before and after training.

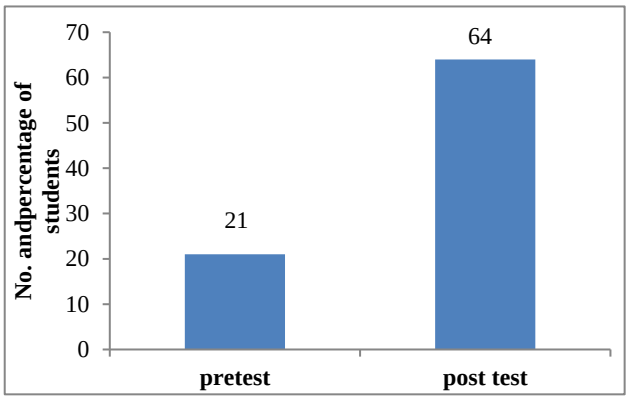

Figure 6: Distribution of the students according to knowledge of treatment of anaemia before and after training.

In Verma PB et al, baseline knowledge of the girls regarding causes of anaemia was 21% which was significantly increased to 64% after the intervention. Baseline knowledge of the girls regarding signs and symptoms of anaemia was 23% which was significantly increased to 66% after the intervention. Baseline knowledge of the girls regarding dietary sources of iron

was 40% which was significantly increased to 72% after the intervention.[2] Baseline knowledge of the girls regarding factors which inhibit the absorption of iron was 25% which was significantly increased to 55% after the intervention and baseline knowledge of the girls regarding factors which increase the absorption of iron was 4% which was significantly increased to 41% after the intervention. Baseline knowledge of the girls regarding treatment of anaemia was 30% which was significantly increased to 79 % after the intervention.

In Angadi N et al, 40% of the girls knew about anaemia and 12% of the girls knew about multiple signs and symptoms of anaemia.[8] Out of total, 44% of the adolescent girls knew about iron rich food and 56% subjects told that green leafy vegetables were the only source of iron rich food. Out of total, 43% of the adolescent girls told that tea and coffee reduces iron absorption and 74% answered that Vitamin C enhances iron absorption. Only 55% study population knew about the treatment of anaemia.

In Kotecha PV et al, 12.1% of the girls knew about causes of anaemia and 12% of the girls knew about multiple signs and symptoms of anaemia.[9] Out of total, 37.3% of the adolescent girls told that tea and coffee reduces iron absorption and 38% answered that Vitamin C enhances iron absorption.

However, in a study conducted by Chakma et al, 81.4% of the adolescent girls did not know that the anemia could be prevented or treated.[10] Only 65% study population knew about the treatment of anaemia.

However, study done in single college of Vadodara city limits us to generalize the results. There is definitely a need for well-planned, large-scale studies using standardized methodologies to estimate awareness of youth regarding iron deficiency anemia and other micronutrient deficiencies. When planning these studies it is necessary to ensure that importance is given to accurate evaluation of socio economic status and representation of the different regions of India. A comprehensive study including anthropometric data, biochemical data, clinical signs of anaemia and dietary intake data among the same group of adolescent girls will give a better insight into the situation.

CONCLUSION

Single educational session significantly improve the knowledge of adolescent girls regarding anaemia and its preventive measures. Such education interventions are to be done on a periodic basis to improve their knowledge. As this encourage them to adopt healthy lifestyles which prevents anaemia and other micronutrient deficiencies among them.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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