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Change in Knowledge, Attitude and Practice Regarding Anaemia among High School Girls in Rural Bangalore: An Health Educational Interventional Study

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ABSTRACT

Background: Adolescent girls are particularly vulnerable to anemia compared.KAP assessment is suitable to evaluate the effectiveness of intervention programs. This study was carried out to assess the knowledge, attitude and practice regarding anemia and improvement in same after health education among high school girls in rural Bangalore.

Materials and Methods: It's a cross sectional interventional study. All girls were included age group 14 to 16 years and those who did not consent were excluded from the study which was carried out in Govt High School in Hoskote, Rural Bangalore for a period of three months. All the data were entered in Microsoft excel and analyzed using SPSS v 22.

Results: Among 100 study participants, 78 % belonged to age group of 13-14 years, 85% belonged to nuclear family. Initial assessment showed Knowledge being poor, Attitude being negative and practice being unsatisfactory and health education were given through various forms.

Conclusion: The overall findings of the study showed the knowledge, attitude and practices of female adolescents are moving in a desirable direction post health education. Comprehensive nutritional education regarding anemia and consequences among adolescents can yield a great dividend in future life of women.

Key words: Adolescence, Anemia, Health education, IFA tablets

INTRODUCTION

Globally, one in three non-pregnant women, corresponding to almost 500 million women, areanaemic. Adolescence being a rapid transition phase with rapid requirement additional nutrition. It is well established that in adolescent girls, menstrual blood losses with rapid growth leading to expansion of red cell mass and increased tissue iron requirements, make them particularly vulnerable to iron deficiency compared to male counterparts.[1] The female child is more likely to be neglected as she is deprived of good food and education and is utilized as an extra working hand tocarry out the household chores.[2]Anemia in adolescent girls in future attributes to high maternal mortality rate, high incidence of low birth weight babies, high perinatal mortality and fetal wastage.[3]

Anemia is a silent but deteriorating health problem and Iron deficiency anemia being very common in developed countries. The prevalence is as high as 44 % in developing country. In developing countries it's not only poverty but social factors also play in poor nutrition, poor health management among girls in adolescence as they remain neglected for being a girl child.[4]Awareness regarding Iron and folic acid supplementation in pubertal girls builds up the iron stores in them and when addressed them who soon enter married life and

motherhood, could be just a proper solution to problem of anemia in pregnant women can be attempted forming a bedrock platform in the concept of continuum of care.

It is essential to identify the scope of this micronutrient deficient disease, first, by assessing the Knowledge, Attitude and Practice (KAP) (i.e., the symptoms, sources, benefits, absorption enhancers and absorption barriers) of this important micronutrient, i.e., iron and then by spreading the word regarding its importance in the development of adequate iron stores. Difficulties related to the building of iron stores during pregnancy provide a strong rationale for health education regarding the iron status of women before pregnancy and for establishing good levels of stored iron before pregnancy. KAP assessment is suitable to evaluate the effectiveness of intervention programs. Moreover, it can assess a target group's current knowledge, attitude, and practice regarding a specific topic to detect their needs, problems and possible barriers before developing and implementing the intervention study. A school being best place for intervention, this study was carried out to assess the knowledge, attitude and practice regarding anemia and improvement in same after health education among high school girls in rural Bangalore.

MATERIALS AND METHOD

This Study was a cross sectional interventional study carried out for period of three months from August to October 2016 at Hoskote Girls government high school, Hoskote Bangalore. All the girls of High school age group 14 to 16 years were included in study and those who did not consent/ascent were excluded from study. The Govt high school had around 156 girls out of which 22 opted out of study after explaining the study even before the start of study citing various reasons, 31 students were less than 14 years and rest 3 had taken transfer to other schools during the study period. Initial knowledge was assed using a pre tested semi-structured questionnaire after written consent and data were collected by Interview method. Health education was given, later re-evaluation was done with same questionnaire which was used initially to asses KAP. The questionnaire consisted of 5 questions on Knowledge, attitude and practice each .The health education intervention consisted of lectures, presentations, interactive discussions using posters and the distribution of information booklets and brochures about proper nutrition. The initial baseline evaluation through interview took around 10 days, later health education were planned and given in next 10 days. After a wash out period of 15 days reinforcement health education session was given for two days and Change in KAP was assessed after 2 months of initial assessment. All 100 participants who initially consented and included in study participated post intervention. Study was carried out after clearance of institutional ethical committee. All the data were entered in Microsoft excel and analyzed using SPSS v 22. Descriptive statistics like mean, percentage were applied and to check the difference paired t test was applied and the level of significance was defined statistically significant with defined p-value less than 0.05.

Selection of study participants from high school

156	Total number girl students in High school
31 (19.8%)	<14 years did not match inclusion criteria
22 (14.1%)	opted out of study citing various reasons
3 (1.9%)	took transfer to other schools during study
11 (64.1%)	were finally included in the study

RESULTS

Among 100 study participants, 78 % belonged to age group of 13-14 years, 85% belonged to nuclear family, around 49% of study participants had family members less than 4, 62% had attained menarche at age 14-15 and 97% were mixed by diet.(Table 1)

Table 1: Distribution of study participants according to socio demographic profile

Socio-demographic variables	Frequency (%)
Age in years	
13- 14	78 (78%)
15-16	22 (22%)
Type of family	
Nuclear	85 (85%)
Joint	15 (15%)
Family members	
upto 4	49 (49%)
5-10	48 (48%)
11-15	3 (3%)
Age at which menarche attained	
11-13	24 (24%)
14-15	62 (62%)
not attained	14 (14%)
Diet	
Veg	3 (3%)
Mixed	97 (97%)

A pretested semi structured questionnaire was given at start of study and initial KAP was assessed. 97% already knew that anemia is a health issue. Only 2 % said that worm infestation and 20% said inadequate diet causes anemia, 92% knew iron deficiency leads to anemia, 37% knew breathlessness could be a symptom of anemia. Around 69% knew adolescents were more prone for anemia. Around 31% said vitamin c has a role in iron ab-

sorption. A majority of 98% were willing to consume iron tablets however 94% were taking tablets.99% said schools were source of iron folic acid tablets and 79% had undergone deworming. (Table 2)

Among study participants after initial assessment of KAP, areas which needed and also very necessary to be addressed were picked and Health education intervention was given and post assessment was done. Post health intervention there was significant difference regarding Knowledge, attitude and practice. (Table 3)

Table 2: Distribution of study participants according to KAP regarding Iron deficient anemia

KAP regarding Iron deficient anemia	Frequency (%)
yes, anemia is health related issue	97 (97%)
causes of anemia	
blood loss	86 (86%)
worm infestation	2 (2%)
in adequate diet	20 (20%)
mineral iron reduced in anemia	92 (92%)
symptoms of anemia	
getting tired	66 (66%)
breathlessness	37 (37%)
inability to concentrate	3 (3%)
Fever	18 (18%)
yes, adolescent girls more prone for anemia	69 (69%)
green leafy veg nutrition which helps in improving anemia	75 (75%)
yes, vitamin c has a role	31 (31%)
willingness to consume iron tablets	98 (98%)
presently taking iron tablets	94 (94%)
yes, excess menstrual flow causes anemia	82 (82%)
schools are source of IFA tablets	99 (99%)
undergone deworming	79 (79%)

Table 3: Improvement in KAP post nutritional health education intervention

KAP	Pre-test (n=100)	Post test (n=100)	p value
Yes, anemia is health related issue	1.8 ± 0.5	1.9 ± 0.2	0.008
causes of anemia	1.8 ± 0.4	1.9 ± 0.1	0.015
mineral reduced in anemia	1.8 ± 0.5	1.9 ± 0.3	0.15
symptoms of anemia	1.1 ± 0.3	2.9 ± 0.7	0.001
yes, adolescent girls more prone for anemia	1.3 ± 0.9	1.8 ± 0.4	0.001
nutrition which helps in improving anemia	1.3 ± 0.7	1.2 ± 0.5	0.22
ready to take vitamin c	0.9 ± 0.3	1.9 ± 0.3	0.9
willingness to take medication if anemic	1.8 ± 0.4	1.9 ± 0.1	0.7
willingness to undergo Hb investigations if required	1.7 ± 0.6	1.9 ± 0.4	0.05
taking tablets from WIFS	1.9 ± 0.1	2 ± 0.1	0.3
consuming the tablets	1.02 ± 1	1.1 ± 0.9	0.9
receiving deworming regularly	1.5 ± 0.8	1.6 ± 0.7	0.15

* Mean ±SD

DISCUSSION

The present study being a cross sectional interventional study carried on adolescent girls for a period of 3 months revealed the KAP regarding the Iron deficiency anemia. Only 2 % said that worm infestation and 20% said inadequate diet causes anemia, only 69% knew adolescents were more prone for anemia. Around 31% said vitamin c has a role in iron absorption. Many such issues where Knowledge being poor, Attitude being negative and practice being unsatisfactory were identified and health education were given through various forms. Similar results regarding knowledge attitude and practice was seen in the study conducted by Angadi and Sanjitha in urban slum of Davengere among adolescent girls.[5] The present study also showed that only 75% knew green leafy vegetables were good source of Iron and it helps in improving the anemia and hardly 31% said Sources of Vitamin c could play in improving the anemia. Similarly the study done by Patimah et al showed that poor knowledge regarding diet was associated with Iron deficiency anemia.[6] In the present study 62% of participants had attained menarche. The study done by Gupta et al showed attaining menarche was associated with anemia among adolescent.[7]

This makes an important note on health education which is very much important in building the bridge in continuum of care. Study done by Verma et al also says that menstruating girls are more prone to be anemic.[8]The findings in the present study showed improvement in the knowledge attitude and practice after health education. Similar results were seen in studies done by Jalambo et al where positive results were obtained post health education using various approaches .[9]

Access of nutrition related knowledge was poor in girls of in the study area. Majority of them were not aware about their nutritional needs and ignorance about micronutrients was seen in the adolescent girls of study area. Nutrition education is the attempt to enable the adolescent girls as they need special attention due to increase demand of their physiological growth. Study done by Verma and Thakor among adolescent girls in Gandhinagar Gujarat showed baseline knowledge among adolescent girls was significantly increased after the intervention.[10] Similar results were seen in the present study stressing the importance of Health education intervention at school and college levels. Study done by Roopal Mittal, Dr. Renu Verma and Chhavi Gupta among girls showed Nutrition knowledge among the girls was poor and Ignorance about micronutrients and protective foods prevailed in respondents but after imparting nutritional education through games, the results were very good and responsive showing innovative ways of health education to bridge the gap between Knowledge, attitude and practice especially among adolescent girls.[11]Study done by Bandopadya et al conducted among school children of adolescent age group by administering a predesigned self-administered questionnaire based on the five domains like knowledge of anemia, role of diet, use of slipper, hand washing, health seeking behavior and management of anemia also showed post interventional score on the five domains significantly improved with health education showing that health education play an effective role in improving health of adolescents by increasing knowledge and changing their attitude.[12] Study done by Marwan et al showed Nutrition education intervention has an impact on improving knowledge, attitude and practices of female adolescents compared with control.[13]Study done by Grover and Chowdary showed a statistically significant gain in KAP scores of adolescent girls after the intervention.[15] School authorities, community leaders and parents must integrate in implementing and sustaining nutrition education program within the school which is very crucial to promote healthy behaviors. Health education through school based intervention should also include exchange of experiences and reflection on the student's own practices from their previous experiences. This interdisciplinary approach will be beneficial to sensitize adolescent girls on related topics and also contribute to self-care and behavior change, therefore, improve their quality and value of life.[14]Study done by Kulkarni S.P. regarding symptoms and risk factors of anemia in urban school going adolescent girls stressed the importance of nutritional education of iron rich food which should be part of curriculum and routine hemoglobin testing at school level and a particular day to be celebrated once in a year.[16]

Strengths and limitations

The present study was not devoid of limitations. The present study was a cross sectional study carried on a small number of participant's hence external validity is compromised. More over only school going children were included and drop outs were not addressed as dropout rates were higher among rural high schools.

CONCLUSION

Anaemia remains a very common health problem among female adolescents and leads to high morbidity and mortality rates among females later in their life. Most female adolescents are lack knowledge regarding anaemia, its causes, prevention and management in spite of many health education sessions in school. The current study was an attempt to assess the knowledge regarding iron deficiency anaemia among female adolescents. The overall findings of the study showed the knowledge, attitude and practices of female adolescents are moving in a desirable direction. There is a need to improve adolescent healthcare services, facilities. Comprehensive nutritional education regarding anemia and consequences among adolescents can yield a great dividend in future life of women.

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