

Effectiveness of community-based intervention on family life education with special emphasis on nutrition among school-going adolescent girls in a village of Andhra Pradesh

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ABSTRACT

Background: Adolescence is the stage at which health behavior is formed. Limited information about family life leaves adolescent girls susceptible to greater risks from sexual abuse, pregnancy, and violence. **Objective:** The objective of the study was to assess the baseline knowledge regarding family life education with a greater emphasis on nutrition and subsequent change after intervention through family life education by the expert. **Materials and Methods:** Study design: It is a cross-sectional intervention study (pre and post). Study subject: Adolescent girls from 11 to 16 years were taken. Sample size: The sample size was 206. Sampling method: Lottery method. The pilot study was conducted from July 1, 2013, to August 31, 2013, among 50 adolescent girl students (20% of the sample size) from Zilla Parishad High School, Nidamanuru. **Results:** Of the 250 study subjects, 20 (8%) were age group of 11–12 years, 190 (76%) were 13–14 years age group, and 40 (16%) were 15–16 years age group. Knowledge regarding small family norm was improved from 84.40% to 97.20% with educational intervention which is statistically highly significant ($P < 0.05$). Knowledge regarding increased demand for nutrition and iron during adolescence was improved from 39.20% to 92.40% after educational intervention which is highly statistically significant ($P < 0.05$). **Conclusion:** The key to improved quality of life and stable family life lies in better understanding of nutritional, emotional, and physical requirements of life by the adolescent girl which is lacking but can be achieved by creating health awareness among them.

KEY WORDS: Adolescent Girls; Family Life Education; Nutrition; Intervention


INTRODUCTION

The World Health Organization defines adolescence as age group between 10 and 19 years which is a transition phase from childhood to adult individual.^[1] They cater around 20% of the world population. Of the 1.2 billion adolescents, about 88% live in developing countries also more than 50% of all adolescents live in Asia, as per demographic data, India accounts for largest national

population of adolescents, i.e., 253 million followed by China 207 million.^[2] Conferring to census 2011 report, adolescent constitutes about 21% of population in India. The course is static or small decreasing trend compared to 22% in 2001 census. The rural and urban population constituted 22% and 19% adolescent population.

By nature, adolescents are energetic, enthusiastic, self-confident, self-esteemed, and innovative, with significant drive, they will provide constructive force for a nation and are responsible for its imminent productivity, provided they develop in a healthy condition.^[3]

In India, by the age of 18 years, 54% adolescents are married, 25–35% of adolescent girls conceive as early as 17 years, and these adolescent pregnancies contribute to about 10–15%

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of total pregnancies.^[4,5] About 50% of the maternal deaths between 15 and 19 years are due to unsafe abortion although abortion has been legalized in India.^[6] Early marriage, which is widely prevalent in Indian and African culture, is quite predominant in rural areas compared to urban areas, and adolescent girls belonging to these communities fall into fertility trap very early in their life. This definitely affects their life-span.

Interventional programs are being implemented in communities where many adolescent girls are below the average weight, protein supplements are being given to improving girls' overall health and pregnancy outcomes and also to reduce the prevalence of low birth-weight babies, through programs like Integrated Child Development Services Programme.^[7] The prevalence of anemia has decreased significantly after introduction of iron supplementation. Healthy habits in adolescents can be established by intervening with education and supplementary nutrition that continue into adulthood. Such programs should also involve males. Males who receive information about women's increased nutritional necessities during pregnancy and lactation may turn out a better partner when they form their families.

Family Health Education of adolescent girls is crucial since it determines the health of her own as well as her family in future. According to the National Family Health Survey (NFHS)-4 data, 3.4% boys and 9.6% girls in India reported sexual debut before the age of 15 years.^[8]

Need of the Study

In many areas of the country especially in rural India adolescents are having least knowledge about their reproductive health. Parents merely talk any aspect related to reproductive health in front of children, example about menstrual hygiene, sexually transmitted diseases transmission, pregnancy, abortion, and contraceptive measures, as they consider it as irrelevant information for their children and in some other families the information is passed on wrongly, which puts the adolescents into the danger of falling into serious health-related problems.

According to NFHS-4 data, mean age at marriage for Indian women is 17 years, 7.8% of adolescents have started childbearing, 56% are suffering from anemia, and 11% of unsafe abortions are seen in adolescent age groups. Infant mortality rates for teenage mothers are 79%; the risk of maternal mortality is higher when age of conception is under 15 for adolescent girls, compared to older women.^[9]

All the above-estimated findings show that it is very important to provide education to the adolescent girls regarding all the aspects of nutrition, reproductive health, for which this study is conducted.

Objective

The objective of the study was to assess the baseline knowledge regarding family life education with a special focus on nutrition and subsequent change after intervention through family life education by the principal investigator and coinvestigators.

MATERIALS AND METHODS

Ethical Committee Permission

The study was approved by the Institutional Ethical Committee.

Type of Study

This was an interventional study.

Study Period

The study duration was from July 1, 2013, to June 30, 2014.

Study Area

The study was conducted at Zilla Parishad High School in Nidamanuru village. The total population of Nidamanuru – 8210, males – 4135, females 4075, and adolescent strength – 1618.

Study Subjects

Adolescent girls aged 11–16 years were taken.

Sample Size

Sample size (n) = $4pq/l^2$ where $p = 64.1\%$,^[10] $q = 34\%$, and $l = 10\%$ of p , so $n = 206$. However, the sample size of 250 school-going adolescent girls was taken.

Sampling Method

Of 50 Mandals of Krishna district, Vijayawada rural was selected by simple random technique (by lottery method), under Vijayawada rural there are 19 villages, in that, Nidamanuru village was chosen by simple random technique (by lottery method), and Nidamanuru comes under the Primary Health Center area of Kankipadu. A list of schools was obtained from District Educational Officer, one secondary school in Nidamanuru village, which is Zilla Parishad High School was selected, where study was conducted.

Inclusion Criteria

The following criteria were included in the study:

- High school girls aged 11–16 years at Nidamanuru village
- Regardless of attainment of menarche.

Exclusion Criteria

The following criteria were excluded from the study:

- High school girls who are below 11 and above 16 years
- Some of the high school girls who are absent at the time of data collection.

Pilot Study

It was conducted from July 1, 2013, to August 31, 2013, among 50 adolescent girl students (20% of the sample size) from Zilla Parishad High School, Nidamanuru.

Data Collection

Data were collected from high school girls by personal interviewing using pre-structured schedule which was field-tested by a pilot study for quality control.

Among the selected high school as per the registers, a total number of 670 girls were in the age group of 11–16 years, from the 670 girls excluding the 10th class students for academic purposes, 568 girls were selected and numbered accordingly. Systematic random technique was applied and based on the strength of the class every second girl was selected for the study until the sample size of 250 was met. For some reason, any selected girl was found to be absent at the time of data collection; a second visit was done on the next day. If the girl was found absent even on the second visit, adjacent girl was selected for the study.

These students were divided into 8 batches; 31–33 students were present in each batch. In pre-test, a pre-designed semi-structured and pre-tested questionnaire in local language was used for personal interview for each batch in school working hours. After pre-test, educational intervention was conducted over the duration of 4 months, for each batch, on each day 1 h class was taken using chalk and board, posters, charts, flip charts, and video clips. The in house sessions were conducted by the principal investigator for all the batches. Thus each batch received 15 sessions (which is equal to 15 h of comprehensive teaching). After 1 month of intervention, post-test was conducted using the same questionnaire used for pre-test.

RESULTS

Of the 250 study subjects, 20 (8%) were the age group of 11–12 years, 190 (76%) were 13–14 years age group, and 40 (16%) were 15–16 years age group. Of 250 students, 162 (66.5%) belongs to Hindu religion, 63 (23.27%) belongs to Christian religion, and 25 (10.22%) belongs to Muslim [Table 1].

Knowledge regarding small family norm was improved from 84.40% to 97.20% with an educational intervention which is statistically highly significant ($P < 0.05$) and knowledge regarding gender discrimination is increased from 82.80% to

98.00% with educational intervention which is statistically highly significant. Knowledge regarding role of the father's chromosome in sex determination of the baby was improved to 58% from 16% after educational intervention which is statistically highly significant ($P < 0.05$) [Table 2].

Knowledge regarding increased demand for nutrition and iron during adolescence was improved from 39.20% to 92.40% after educational intervention which is highly statistically significant. Knowledge regarding nutrition as one of the important causes of anemia was improved from 67.60% to 82.40% after educational intervention. Knowledge regarding iron-rich foods improved from 4.40% to 52% after educational intervention which is statistically highly significant.

Knowledge regarding legal age for marriage for both boys and girls was improved from 82.40% to 95.20% which is statistically highly significant. Knowledge regarding the missed period as the early sign of pregnancy improved from 64% to 84%. Knowledge regarding risk with illegal abortion is increased from 22.12% to 80.24% which is statistically highly significant. Knowledge regarding sex determination of the baby is crime is increased from 67.60% to 79.63% which is statistically significant.

DISCUSSION

This study evaluated the effect of health education by health experts on adolescent girls knowledge and attitudes

Table 1: Sociodemographic characteristic of the study population

Characteristics of study subjects	Number (n=250) (%)
Age	
11–12	20 (8)
13–14	190 (76)
15–16	40 (16)
Religion	
Hindu	162 (66.5)
Christian	63 (23.28)
Muslim	25 (10.22)
Mothers education	
Illiterate	70 (29.19)
Primary	89 (35.38)
Secondary	82 (32.05)
Intermediate	7 (2.37)
Graduate	2 (1)
Socioeconomic status (Modified B.G Prasad classification)	
Class I	1 (0.69)
Class II	55 (21.43)
Class III	69 (28.14)
Class IV	109 (42.61)
Class V	16 (7.12)

Table 2: Effective change in knowledge of study subject after intervention

Questions asked	Pre-test value (positive) (%)	Post-test value (positive) (%)	P-value
Knowledge regarding small family norms	84.4	97.2	0.023
Knowledge regarding role of the father's chromosome in sex determination	16.2	58.8	0.0016
Knowledge regarding pubertal changes	28.4	96.2	0.0037
Knowledge regarding increased demand of nutrition and iron during adolescent age	39.2	92.4	0.078
Knowledge regarding causes of anemia	67.2	87.4	0.811
Knowledge regarding risk with illegal abortion	22.1	81.4	0.0063

toward family life education especially with respect to their nutrition. Significant improvement was seen in relation with knowledge of students about family life-related issues may it be legal or nutritional.

In the present study, majority of the girls were in the age group of 13–14 years and mean age of study subjects is 13.67 ± 0.90 years. In a study by Bhattacharya *et al.*, on reproductive tract infection among female adolescents, with the sample size of 106 adolescents girls was found to be 10–19 years, the mean age of the adolescent girls was found to be 17.8 ± 0.82 years.^[11] In our study majority, i.e., 42.61% of the adolescent girls belong to Class IV of modified B. J. Prasad socioeconomic classification followed by Class III (28.14%) and Class II (21.43%). In Malleishappa *et al.*, the study 51.52% belonged to lower class and 32.31% middle class.^[12]

In the present study, knowledge regarding gender discrimination is increased from 82.80% to 98.00%. According to Saxena *et al.*, the study findings of in pre-test, 68% of unmarried girls and 72% of married women thought that female feticide is right, after intervention it is decreased to 28% in unmarried girls and 20% in married women.^[13] In the present study, knowledge regarding role of the father's chromosome in sex determination of the baby was improved significantly from 16.00% to 58.00%. A study from Singh and Jain observed that 33.1% of the student had a misconception that sex of the child is determined in the womb, which was more prevalent among girls than boys.^[14]

In the present study, knowledge regarding the small family norm was improved from 84.40% to 97.20% with educational intervention, according to study done by Pattanaik *et al.* 60, 214 (84.3%) study subjects were aware regarding small family norm, in that only 8.8% knew the exact norm. Acceptable family size of two or less was reported by 59.2%. Preference for a male child was reported by 91.7%.^[15] In the present study, awareness regarding domestic violence is improved from 88.8% to 97.2% after educational intervention UNICEF (2005). Early marriage: A Harmful Traditional Practice New York, this scrutiny was conducted for India, Kenya, Peru, South Africa, Turkmenistan, and Zambia. Comparing the stats among these countries, India was found to have the highest overall rate of domestic violence.^[16]

Knowledge regarding increased demand for nutrition and iron during adolescent age was improved significantly from 39.20% to 92.40% after educational intervention. A community-based cross-sectional study by Choudhary *et al.*, on dietary pattern and nutrition related to the knowledge of rural adolescent girls in Chiraigaon community development block of Varanasi district. The study showed among 270 adolescent girls, 66.6% of girls were of the opinion that food intake during adolescent age should be less than adult population also 72.59% of study subjects were unaware of the nutritional requirement during adolescence.^[17] Knowledge regarding causes of anemia was improved from 67.60% to 82.40% after educational intervention. Which is in consensus with the cross-sectional study by Kabir *et al.*, on dietary pattern, nutritional status, anemia, and anemia-related knowledge among 65 adolescent girls aged 15–19 years in that 65% of the participants had exact knowledge regarding causes of anemia.^[18]

In the present study, knowledge regarding risk with illegal abortion is increased significantly from 22.12% to 80.24%; in a study by Langalibalele, it was observed that 83.2% were aware of risks associated with illegal abortion.^[19]

Limitations

- The study was limited to rural sector
- Adolescents girls going to college were not included
- Adolescents girls not going to the educational institute were not included.

CONCLUSION

The present study was undertaken to assess the baseline knowledge of the adolescent girls and the subsequent change in the knowledge after health education sessions. In our study, majority of the women belonged to socioeconomic Classes III and IV. The following study showed that adolescent girls had poor knowledge regarding importance of nutrition for their optimum health. Furthermore, knowledge regarding laws related abortion and sex determination was lacking. All these factors were improved after health education session which was analyzed through the post-test.

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