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Impact of Health Education on Knowledge Regarding Reproductive and Sexual Health among Adolescent Girls of Anand, Gujarat

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ABSTRACT

Introduction: Adolescence is defined as age group of 10-19 years. Adolescents are important resource for any country. They face many problems due to lack of information regarding their own physical and sexual development. Education about reproductive health should be an integral part of growing up. This study was designed to evaluate the impact of health education models specifically designed for this.

Methodology: Study was conducted among 400 adolescent girls aged 15-16 years studying in high schools in 4 taluka of Anand district. A designed questionnaire was administered. Selected participants were divided into two groups. One group was given health education by using models and charts while another group was given education using chalk and talk method. After 2 months post-test was done to assess the impact of the intervention.

Results: The overall pre-intervention knowledge regarding reproductive health was poor among the participants. Paired T test revealed significant difference between pre-test and post-test regarding reproductive health knowledge. There was no significant difference between two intervention groups.

Conclusion: Health education sessions regarding sexual and reproductive health are effective in improving the knowledge among adolescent girls. Such activities should be carried out in schools on regular basis.

Key words: Adolescent, Reproductive health, Educational intervention

INTRODUCTION

The World Health Organization (WHO) defines adolescence as the age between 10 and 19 years. Adolescence includes puberty, which is the period of rapid physical growth, a period of physical as well as psychological changes and growth; there is the development of secondary sexual characteristics. People consider this period as one of the most important stages of life. Adolescents are the future of any nation.[1]

Due to western influence, increasing social media usage, increasing age of marriage in the urban area, early marriage in the rural area increases the risk of STIs, early/ unwanted pregnancy, HIV/AIDS. Adolescents have unmet needs that are not addressed by the current education system or parents. There is a dichotomy between very conservative homes, society, and liberal western culture. This also confuses the adolescents more. Sex education is a lifelong learning process and it aims to reduce negative outcomes such as fear and stigma regarding sexual activity, unwanted/early pregnancies, STIs, HIV/AIDS, etc. The effective educational program should be applied

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to young people earliest as possible to establish behavioral patterns. [2]

During recent times it is discussed on various national and international platforms that the problems of adolescent age group should be addressed through various health education sessions. Various government organizations and nongovernment organizations are working towards development of effective health education sessions for adolescents. Still, India being a conservative country there is always a dilemma of how much information to put out for a specific age group. Action research in community health (ARCH) is such non-government organization that works among the tribal population in Gujarat. They work in various fields such as maternal and child health, adolescent health, etc. They developed few adolescent health education models targeted towards and assisted by the tribal population. The models evolved out of education programs through books, pictorials, charts, organ models, audio-visuals, and interactive learning of the reproductive system. The models have been refined through feedback for the past 10 years. [3]

Various educational methods are being used among different teaching sectors to impart knowledge regarding adolescent health. There are various methods for learning by chalk and talk, audio-visual aids (i.e. charts, models, and flip charts), group discussion, peer education, etc. Action research in community health (ARCH) designed the charts and models that were used in this study. Along with the models, a simple chalk and talk method were also used to impart knowledge among adolescent girls.

This study was planned to measure the impact of two intervention methods on knowledge regarding sexual and reproductive among adolescent girls.

METHODS

Ethics: Ethical approval was obtained from the Human Research Ethics Committee (HREC) of H.M. Patel center for Medical care and education after the review of technical and ethical issues related to the study before the beginning of the study. The heads of the selected schools were explained the need and conduct of the study and written approval to conduct the study in the respective schools was obtained. Once the approval from the head of the schools was obtained, parents were explained the need and conduct of the study, and written consent was obtained in the Gujarati language. Assent was obtained from the participants.

Study design: An educational intervention study design was adapted to carry out the study among adolescent girls age 14-15 years studying in various schools of the Anand district. The sample size was estimated at 100 each for both interventions. For sample size estimation it was assumed that knowledge would increase 20% after intervention regarding Reproductive and sexual health, at 95% confidence interval, 80% power and intervention to control ration 1:1.

A multistage sampling scheme was used for present study. In the first stage, 4 taluka were randomly selected from the district. For the second stage, one school from the rural and urban area each was purposively selected according to convenience and support. Total of 8 schools were selected for the same. Four schools were from the urban area and four schools were from a rural area. In the third stage among selected schools, 50 participants were selected from each school using systematic random sampling. Among the chosen 50 girls two intervention groups were formed. i) Education with charts and models ii) Education with chalk and talk method. A semi-structured questionnaire was used before the education session for pre-assessment and 2 months after the session for post-assessment.

Health education session: Before the session consent from parents and assent from the students was obtained. A pre-tested and semi-structured questionnaire was used for a collection of data. The questionnaire included information knowledge regarding reproductive and sexual health anatomy and physiology, fertilization, changes with puberty, HIV/AIDS. The questions were administered in the Gujarati language.

After the pre-test, the participants were divided into two groups. One group was given health education with chalk and talk method and another was educated using models and charts devised by ARCH.

The educational session was conducted in the schools by the researcher. The education was given in the Gujarati language. Topics for both the sessions included female reproductive system anatomy and physiology, fertilization, HIV, psychological changes, HIV/AIDS. One session was conducted in each intervention group which lasted roughly for an hour. The sessions were followed by questions answer sessions to clear out doubts and questions that lasted around 15-20 minutes.

After 2 months the same questionnaire was given to find out the changes in knowledge.

Statistics: The questions in the pre-test and post-test were assigned specific scores. The total score in the questionnaire was 20. The maximum score was 20 and the minimum score was 0. Data entry was done in Microsoft excel and data was evaluated using software STATA version 14. A paired t-test was used to check the statistical significance between pre and post-test scores. The unpaired t-test was used to check the statistical significance between the two interventions. The P-value of <0.05 was considered to be significant.

RESULTS

A total of 400 girls were included in the study. All the participants were of the age group of 14-15 years.

The mean age of the students was 14.44 years.

As shown in Table 1 and 2 there was 39% increase in the post-test score compared to the pre-test. The mean score of pre-test was 4.5 (SD -4.1) out of total score of 20. After intervention the mean score was 12.29 (SD 2.03) out of 20. As shown in table 3 there was a significant difference in the pre-test and post-test scores.

Only (5.8%) of the participants had information regarding fertilization and reproductive system. The main source of information regarding Reproductive and sexual health were teachers.

Table 1: Average pre-test score of the participants regarding the Sexual and reproductive health knowledge (Total score 20). N=400

	Urban (n=50) total score (SD)	Rural (n=50) total score (SD)
Petlad	6.94 (4.35)	1.30 (2.06)
Borsad	1.84 (2.59)	9.04 (2.54)
Khambhat	1.82 (0.89)	0.22 (0.55)
Anand	8.14 (2.25)	6.32 (1.85)
Total Mean score (SD)	4.50 (4.10)	

Table 2: Average post-test score of the participants regarding the Sexual and reproductive health knowledge (Total score 20). N=400

	Urban (n=50) total score (SD)	Rural (n=50) total score (SD)
Petlad	12.82 (1.90)	11.06 (1.39)
Borsad	12.26 (1.68)	13.42 (1.24)
Khambhat	11.74 (2.18)	11.12 (1.82)
Anand	13.76 (2.11)	12.16 (1.92)
Total Mean score (SD)	12.29 (2.02)	

Table 3: Paired't' test pretest and posttest score regarding Reproductive and sexual health knowledge

Sexual & reproductive knowledge	Mean (SD)
Pretest Knowledge Score	4.50 (4.10)
Posttest knowledge Score	12.29 (2.02)
Paired differences	-7.83 (3.60)
Sig (2 tailed)	.000

Table 4: Mean score of the pretest and posttest in two intervention groups (n=400)

Intervention groups	Mean score (SD)	P Value
Pretest		
Models & charts intervention	4.80 (4.26)	0.147
Chalk & talk intervention	4.20 (3.92)	
Posttest		
Models & charts intervention	12.66 (2.01)	0.000
Chalk & talk intervention	11.92 (1.96)	

*P value calculated by Independent Samples Test

As shown in table 3, A paired sample "t" test was conducted to compare the pre-test of reproductive and sexual health and post-test of reproductive and sexual health. There was a significant difference in the Pre-test score (M- 4.5, SD-4.09) and post-test score (M-12.29, SD- 2.03); t (392) = -43.14, p <0.005. This suggests that our intervention had an impact on the knowledge regarding sexual and reproductive health among the participants.

An independent t-test showed that there was no significant difference between the pre test scores of the two intervention groups as shown in table 4 and 5. However this study shows that there was a significant difference in post test score of the two intervention groups. There was a significant difference in the intervention 1 (models and charts) (M- 13.72, SD-1.72) and intervention 2 (chalk and talk method) (M-12.51, SD- 2.17); t (392) = 6.165, p= <0.005. However, significant difference was not seen in individual groups of urban and rural areas.

DISCUSSION

Reproductive and sexual health is a very important aspect of adolescent health. Knowledge regarding reproductive anatomy is important yet many of the adolescents lack the knowledge.

The present study revealed that very poor knowledge existed among participants before educational intervention; a significant change was noted in the knowledge regarding various domains of the reproductive health. Adolescent represent approximately one fifth of the total population of which 85% are living in developing countries. This group lacks knowledge regarding reproductive and sexual life, body, sexuality, contraception and Sexually transmitted diseases. [4]

A study by **Hunshal et al** suggested that the intervention program affected the knowledge of the participants. [5] As discussed earlier **Shrestha L et al** also indicated that after health education using audiovisual aids like videos, pamphlets, flip charts there was an increase in the knowledge of the participants in various aspects like adolescence, menarche, delivery, AIDS. The findings are similar to the present study. [6]

A study by **Pratinidhi et al** in Pune among 200 school students observed that the change in knowledge regarding reproductive health and HIV was seen after the audiovisual educational intervention. Eight marks and 19.05% of the increase was seen between pre and posttest with p-value <0.001. Females were shy and avoided talking on the subject before intervention which was also observed in the present study. [7] The present study revealed that an increase of seven marks and 39% between pre and posttest with p=value of <0.005. It was also observed that the subjects in this study were not shy regarding talking on the subject.

A study conducted by **Srivastava et al** regarding life skills education among 537 girls ages 12-17 years (88.6%) girls enjoyed the session and found useful. (28.2%) of the girls wanted similar sessions to be conducted yearly. (69.3%) of the girls wanted the sessions to be conducted by doctors. [8] . The participants in the present study also wanted similar sessions to be conducted every year.

Ghonghdemath J. et al in their study among 1249 participants of schools in Karnataka showed that in pretest there was very poor knowledge regarding menstrual hygiene, physiology, reproductive system and infections, various female-related cancers. There was a significant improvement (<0.001) in knowledge after educational intervention which is seen in the current study. [9] The average pretest score among 400 participants regarding reproductive health knowledge in this study was 4.5 which increased to 12.2 after intervention. There was significant improvement (p value <0.005) after educational intervention.

Xu T et al in their systematic review in low and middle-income countries of the WHO western pacific region revealed that the school-based interventions were found to be effective in changing the knowledge and perception regarding many adolescent health areas. [10] These findings are consistent with our study. There was a significant difference observed in the knowledge after intervention.

A study by **Haruna et al** suggests that innovative teaching approaches such as gamification can be used to improve the sexual health education of adolescent students. This study showed effective sexual health behavior and knowledge regarding sexual health problems including HIV/AIDS. [11] The present study used chalk and talk method which is in use since ancient times as well as charts and models. Both the methods were successful in improve the reproductive health knowledge among adolescent girls. However, there was no significant difference in improvement between the two methods.

Delfia R et al in a study conducted among 60 adolescent girls in Tamilnadu observed that a video assisted teaching program regarding Reproductive health was effective in improvement of knowledge and attitude of adolescent girls. [12] Our study also revealed that there was significant improvement in the knowledge after educational intervention.

Gupta et al in their study among adolescent girls in Gorakhpur city observed that major source of information regarding menarche and physiological changes among girls is mothers and elders. But regarding various reproductive health domains i.e. Sexual health, contraception, and pregnancy the major source of information was Television. [13] In our study teachers were the main source of information regarding Reproductive and sexual health.

The sex education should be an integral part of the learning process beginning in childhood and continuing into adult life. It should encourage exploration of values and moral values, consideration of sexuality and personal relationships. It should foster self esteem, self awareness and sense of moral responsibility.[14]

A study done by Parwej S et al in Chandigarh, showed that Reproductive health packages are very helpful in the improving reproductive health among adolescent girls. The study used peer education and conventional education strategies. They observed that Reproductive health scores improved significantly after intervention in both conventional education and peer education group. Post-test scores were not significantly different between peer education and conventional education group. Though the time consumed in delivering conventional education was significantly more than peer group education.[15] Our study also showed that education intervention has significant impact on improvement on knowledge regarding Reproductive health. However, both the interventions used in this study consumed same time.

Malleshappa k et al observed in the study among 656 adolescent girls of schools in Andhra Pradesh, that Reproductive health knowledge score improved significantly after intervention. A significant increase in overall knowledge regarding menstrual cycle, ovulation, fertilization and pregnancy was by 44.5%. A significant improvement in the knowledge about transmission and prevention of STDs was noted after intervention (p <0.0001). A reproductive health education intervention program improves the knowledge and attitude among rural adolescent girls regarding reproductive health.[16] Similar findings were found in our study.

LIMITATIONS

Since the present study was done among school going adolescent girls, we cannot extrapolate these findings to general population.

In present study other sources of information cannot be ruled out. Since the participants belonged to both the intervention group were in close contact, dilution effect may be there.

CONCLUSION

This study demonstrates that planned health education intervention among school going adolescent girls help improve the knowledge regarding various topics i.e. Menstruation physiology, reproductive system anatomy, fertilization, physical changes in an adolescent with puberty, HIV, etc.

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