ORIGINAL ARTICLE

KNOWLEDGE AND ATTITUDE ABOUT GROWING UP CHANGES: AN INTERVENTION STUDY

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Abstract

Aim: To determine the knowledge and attitude about growing up changes and to determine effectiveness of a health education intervention programme in adolescents aged between 14-15 years in urban area of Pune.

Methods: Total 103 adolescents were enrolled out of which 92 completed the study. A structured questionnaire was used to test the knowledge and attitude of all the participants about the growing up changes before and after the educational intervention.

Results: We observed poor baseline (pre-test) knowledge and attitude of growing up changes. Both knowledge and attitude scores improved significantly after intervention ($p<0.0001$). Pre-test knowledge score mean was 9.82 and post test mean was 14.11. Pre-test attitude score mean was 109.86 and post test mean was 130.59.

Conclusions: Adolescents have poor baseline knowledge about growing-up changes and a health education intervention programme improves the knowledge and attitude among adolescents.

Keywords : Adolescence, knowledge, attitude, growing up changes, health, intervention

Introduction

Adolescents are young people between the ages of 10 and 19 years as defined by World Health Organization (WHO). (1) Adolescence is a challenging and dynamic period due to hormonal, physical, emotional, cognitive and social changes. According to WORLD'S YOUTH 2013 data sheet, adolescent population of the world is 1809.6 millions and out of that 362 millions are from India. (2) In India, adolescents form a major chunk of population (>20%). (3)

Adolescents in India may face troubles due to lack of right kind of information regarding their own physical and/or sexual development (i.e. growing up changes). Because of many misconceptions, ignorance and social taboos about sex, sexuality, conception and contraception; along with their peculiar developmental stage, adolescents form a vulnerable group. The habits formed during this period tend to last for lifetime. Also, most of the lifestyle diseases such as diabetes, hypertension and coronary disease which present themselves during adulthood have their foundations laid during this period of growing up. Not much attention has been given to this important group by the society. A good nutritional, social, psychological and emotional support given to adolescents will go a long way in preventing the disease burden on the society.

Many problems in adolescents arise due to the modern lifestyle and risk taking behavior that is typical of this age. A combination of interventions can help to prevent most of these problems and promote healthy behavior. (3) A study done in Eastern India by Ray et al and study in Pune by Mujumdar et al reported that knowledge of sex and reproduction was poor among adolescent girls. (4,5) They underlined the need of school based sexuality education programs. Another study by Sathe et al reported that awareness about sexually transmitted infections (STIs) among both boys and girls is lower than that of human immunodeficiency virus / Acquired Immunodeficiency Syndrome (HIV/AIDS); among them boys are more aware than girls. (6) A school based sexual risk reduction program was conducted in American urban high school students and after a three month follow up, it was shown that the participants showed improvement in safe sex practices as compared to controls. (7) Studies by Fernandez et al and Avachat et al also found a significant change after an intervention. (8,9)

Puberty occurs at the time of neural plasticity where experience may shape brain development and later emotional function. (10) Thus adolescence is a very impressionable age where interventions are likely to be most effective. Also there is a need to address the ignorance through health education programme by health professionals. The objective of present study was to determine the knowledge and attitude about growing up changes and to find effectiveness of a health education intervention programme in adolescents aged between 14-15 years in urban area of Pune. The study also aimed at comparing the results of baseline knowledge and attitude of our study group with the results of other studies in India.

Methods & Materials

A pilot intervention study was carried out in the year 2012-13 among the 9th class student aged between 14-15 years in Pune city. The study was carried out over a period of 6 months. Sample size was determined using convenience sampling method as this was done as a pilot study. Total 103 adolescents were recruited considering feasibility and beneficial effect of the intervention. Willingness to participate in the study was obtained by written parental consent as well as assent from the students after explaining the objective of the study to both. Also a prior approval from the principal of the school and the Institutional Ethics Committee (IEC) of our institute was taken.

Pre-Test: A total of 103 students participated in the pre-test assessment. A questionnaire was administrated which included demographic characteristics such as age, sex, parental education and occupation. The student's daily activities such as their dietary pattern, exercise, sleep, daily hours of watching TV and spending time with parents and other family members were noted. Anthropometric parameters such as height, and weight measurements were also taken during this session. The two questionnaires developed and validated by Jnana Prabodhini's Institute of Psychology (JPIP) were used. For knowledge, it was 'Stepping into Youth - Knowledge Test' (SYKT). (11) This questionnaire focused on students' knowledge about the physical aspects of puberty, reproductive changes, STIs & HIV, personal

hygiene and knowledge about opposite sex. The time of onset of puberty, cause of puberty, signs of puberty, the size of genitalia, appearance of secondary sexual characteristics, the reproductive hormones causing puberty, emotional lability, difference between the development in boys and girls were the parameters used to assess the knowledge about physical changes. We included questions on curability of AIDS, testing for STI/HIV, protection from them, route of spread and the pathology of HIV. As far as reproductive maturity and health was concerned, the points included were as follows: questions about nocturnal dreams, masturbation, and size of genitalia, various aspects of menstruation, semen and menopause.

For attitude, it was 'Stepping into Youth Attitude Test' (SYAT) which included questions on attitude towards personal sexual needs, one's own sexuality, others sexuality, media, sociocultural correlates, sexual abuse, concept of beauty, sexuality within friendship and sexuality education. (Sample questions are attached with scoring system as annexure 1 and annexure 2)

Educational Intervention: A comprehensive health education programme was organized in five sessions for this group of students. Each session was of two hours duration, conducted in five days, one day per week. The training method included a didactic lecture followed by interactive sessions such as brain storming, stories, make believe situations, group discussions etc. The topics included were changes of puberty, menstruation, hygiene, masturbation, pregnancy, socioculture correlates, and sexual abuse, media, and friendship, physical and sexual development. Audio visual aids such as LCD projector, chalk and blackboard, charts, and posters were used. In addition, an open group discussion and question answer session was taken in the last session.

Post-test: The effect of the intervention was evaluated after one month following intervention with the similar questionnaire used in pre-test. During post-test, 92 students were present.

Statstical Methods

We used the statistical package for the social sciences (SPSS) version 20 for window for data analysis. The data has been analysed by chi square and paired t test to test the improvement in knowledge and attitude after intervention. Out of 103 participants, 92 were present during post intervention session. Hence the effect of intervention was analysed by considering sample size of 92.

Results

We included 92 participants for final analysis, 73 (79.3%) were 14 years of age and remaining 19 (20.7%) were 15 years old. Male: female ratio was 55:37. Family background of participants is depicted in table 1.

Weight was in normal range in 79 (85.9%) of students as per growth chart (12) whereas 4 (4.3%) and 9 (9.8%) were overweight and obese respectively. The student's daily activity was also noted. Thirty (54.5%) boys and 20 (54.1%) girls reported watching TV for 1-2 hours daily and 25 (44.5%) boys and 17 (45.9%) girls reported watching TV > 2 hrs, which indicates that Television (media) could be a source of information for this group.

Both knowledge and attitude scores improved significantly after intervention ($p < 0.05$). Pre-test knowledge score mean was 9.82 and post-test mean was 14.11 where as pre-test attitude score mean was 109.86 and post-test score mean was 130.59. We found significant improvement in the attitude about personal sexual needs, socioculture correlates, sexual abuse, media, sexuality within friendship and sexuality education but we did not observe significant change in attitude towards one's own sexuality (Table 2). A significant improvement in the knowledge about physical changes, human reproduction, and hygiene, opposite sex as well as transmission and prevention of STIs was noted after intervention. (Table 3)

In present study as per Table 4, we observed significant difference ($p < 0.05$) in attitude of boys and girls toward sociocultural correlates, sexuality within friendship, others' sexuality and sexuality education. Whereas, there were no significant difference in attitude of boys and girls towards sexual abuse, media, personal sexual needs, concept of beauty and one's own sexuality. Most of the boys showed positive attitude towards sexual abuse, sexuality within friendship, others' sexuality and sexuality education than the girls.

Seventy six (82.6%) of participants were unaware of the meaning of nocturnal emissions, 42 (76.36%) boys knew about masturbation and thought it to be abnormal. Question regarding the size of the penis showed that 23 (41.8%) of boys reported that it does not decide sexual capacity. Thirty four (36.9 %) of participants knew that HIV is not curable. Knowledge about spread of HIV was correct in 41(44.5%) of the answers but 51(55.5%) were still not aware of the ways of HIV spread. Six (6.5%) in our study were not aware that condoms can protect from HIV. Also 43 (78.18%) boys and 30 (81.08%) girls could distinguish between mere acquaintance and close friendship.

Discussion

In spite of widespread recommendations about the necessity and benefits of giving sexuality education to school going children, there is still a lot of resistance to introduction of these sessions in schools. (13) A large database to show poor baseline knowledge and tests showing positive changes after intervention may be able to convince the authorities and general public. Literature also shows that today's adolescents have improper knowledge about their growing up which is obtained largely from inadequately informed friends, internet or movies. (5,6) Most of the studies done on adolescents are about sexuality in girls or knowledge regarding HIV /STIs. (14-16) Our study included both boys and girls of 9th class and we focused on both knowledge as well as attitude about many aspects of growing up. Our study cohort represents the middle class society of India. We observed poor baseline

Table 1: Family background of participants: (N= 92)

		Mother	Father
Education	Illiterate	1(1.1%)	1(1.1%)
	Primary (till 4th standard)	4 (4.3%)	2(2.2%)
	Lower secondary (till 10th)	35 (38.0%)	21 (22.8%)
	Higher secondary (till 12th)	28 (30.4%)	28(30.4%)
	Graduate	24(26.1%)	30 (32.6%)
	Postgraduate	0	10 (10.9%)
	Professionals (lawyer, doctor, businessmen etc)	5 (5.4%)	66(71.1%)
	Service	12 (13.1%)	26(28.3%)
	House wife/ non working	75(81.5%)	0

Table 2: Comparison of pre and post test Attitude related scores (n=92).

	Pre test score Mean ± SD	Post test score Mean ± SD	P value
Attitude towards socio cultural correlates	9.3±4.2	10.8±4.1	0.001
Attitude towards Sexual Abuse	14.2±4.8	16.4±5.3	0.001
Attitude towards Media	15.5±4.1	16.8±3.7	0.005
Attitude towards concept of beauty	11.3±3.1	13.3±3.8	0.002
Attitude towards sexuality within Friendship	15.8±5.7	18.2±4.8	0.0001
Attitude towards others sexuality	2.5±1.5	13.9±6.2	0.0001
Attitude towards sexuality education	8.3±3.9	9.4±2.7	0.005
Attitude towards one's own sexuality	11.6±3.9	15.2± 3.4	0.890
Attitude towards personal sexual needs	12.3±4.3	14.9±3.9	0.0001

Table 3: Comparison of pre and post test Knowledge related scores (n=92)

	Pre test score Mean ± SD	Post test score Mean ± SD	P value
Knowledge about physical changes	2.1±1.4	3.2±1.6	0.01
Knowledge about human reproduction	1.7±1.3	2.9±1.7	0.05
Knowledge about STI and HIV	2.1±1.4	2.6±1.3	0.01
Knowledge about hygiene	1.4±0.9	1.8±0.9	0.04
Knowledge about opposite sex	2.5±1.6	3.3±1.7	0.001

Note: STI= sexually transmitted infection, HIV= Human immunodeficiency virus

knowledge and attitude about growing up changes, which was similarly reported in studies by Mujumdar and Sathe in Pune. (5, 6)

In a study by Rao et al in Karnataka, they used a pre and post test format concerning knowledge of reproductive health among rural adolescent girls. (16) They took five sessions of two hours each as an intervention similar to our study but did the post-test immediately after the intervention. They found that the change in knowledge was greater as compared to change in attitude. Our study undertook the post-test after a gap of one month and we found significant change in both knowledge and attitude scores.

Knowledge: In the present study, we focused on students' knowledge about the physical aspects of puberty, reproductive changes, STI & HIV, personal hygiene and knowledge about opposite sex. A similar study done by Rangappa et al included pre university girls and the change in knowledge regarding adolescent growth, pregnancy and STIs was measured. They found poor baseline knowledge and significant change

Table 4: Gender distribution of attitude

		Boy (55) N (%)	Girl (37) N (%)	p value
One's own sexuality	Positive Attitude	34 (61.8)	18 (48.6)	0.15
	Negative attitude	21 (38.2)	19(51.4)	
Personal sexual needs	Positive Attitude	33(60.0)	20(54.1)	0.36
	Negative attitude	22(40.0)	17(45.9)	
Socio cultural correlates	Positive Attitude	37 (67.3)	16(43.2)	0.019
	Negative attitude	18(32.7)	21(56.8)	
Sexual Abuse	Positive Attitude	33(60.0)	18(48.6)	0.19
	Negative attitude	22(40.0)	19(51.4)	
Media	Positive Attitude	34(61.8)	22(59.5)	0.49
	Negative attitude	21(38.2)	15(40.5)	
Concept of beauty	Positive Attitude	24(43.6)	23(62.2)	0.063
	Negative attitude	31(56.4)	14(37.8)	
Sexuality within Friendship	Positive Attitude	36(65.5)	16(43.2)	0.029
	Negative attitude	19(34.5)	21(56.8)	
Others Sexuality	Positive Attitude	32(58.2)	12(32.4)	0.013
	Negative attitude	23(41.8)	25(67.6)	
Sexual Education	Positive Attitude	37(67.3)	14(37.8)	0.005
	Negative attitude	18(32.7)	23(62.2)	

after intervention. However, they did only one session of intervention and performed the post test after one week. (17) In our study, a significant difference was noted in the pre and post-test answers of both boys and girls.

Before the intervention, 82.6% participants were unaware of the meaning of nocturnal emissions, 76.4% boys knew about masturbation but thought it to be abnormal and 41.8% of boys reported that size of penis does not decide sexual capacity. After the intervention, significant improvement was found in knowledge about nocturnal emission (only 42.7% were unaware) and masturbation (85% understood that it is not abnormal.). No significant change was found in the knowledge about size of penis. This could be because they were shy about discussing the size of genitalia. Sathe et al found that nearly 51.85% boys said masturbation was a normal act and 45.8% of boys were worried about the size of the penis. (6)

Many studies have focused on the knowledge about HIV / STIs and have done interventions. (8,12,17) In our study, 63.1% of participants thought that HIV is curable where as a study done by Alexandra et al found that about 30% respondents thought HIV is curable. (13) In present study, knowledge about spread of HIV was correct in 44.5% of the answers and 93.5% were aware that condoms can protect from HIV. Sathe et al found in their study that 53% girls and 76.2% boys knew about usefulness of condoms. (6) In today's era of increasingly common premarital sex and free sex, students need to be made aware of the dangers of STIs and the ways to protect one from them. This was shown in a study done in Pune by Ramadugu et al where they found that adolescent school going children are involved in sexual activity but lack adequate knowledge in this regard. (19) Another study by Struninet al after a random survey reported that, around 60% of them were sexually active but had inadequate knowledge about transmission of AIDS. (20) Our questionnaire did not have any direct questions regarding sexual activity.

Personal hygiene is very important during adolescence as there are a lot of changes such as hair growth and increase in perspiration, as well as onset of menstruation and nocturnal emission. Poor hygiene can have short term problems such as infections as well as long term effects on reproductive system such as infertility and cancers. In present study questions regarding intercourse during menstruation, type of innerwear, effects of poor hygiene showed significant improvement in knowledge after the intervention. (Table3)

Attitude: All the parameters of SYAT showed significant improvement post-test except one, i.e. attitude towards own sexuality. This may be because the concept of sexuality is not clear to the students. The reasons may be they were too shy to discuss about it, it may be easier for them to discuss about others' sexuality (as most of the students came from conservative families) or the sessions about sexuality needed to be more detailed and repetitive.

In the study done by Sathe et al, 41% boys and 75% girls could distinguish between mere acquaintance and close friendship. (6) In our study, 78.2% boys and 81.1% girls could distinguish between mere acquaintance and close friendship. This could be because the students came from middle class conservative families and grew up with warnings from their parents in this regard from childhood. We also found that the attitude of boys and girls differed from each other. Most of the boys showed positive attitude toward sexual abuse, sexuality within friendship, others sexuality and sexuality education than the girls. A study by Toor concluded that, the attitude of boys towards sex education is significantly more favorable as compared to girls. (21) Sathe et al found that majority of boys as well as girls (two thirds) felt the need to introduce sexuality education in schools. (6) Similar opinion was also expressed by Struninet al. (20) In meta-analysis done by Juping et al, they showed sexuality education programs positively affect overall sexual knowledge. (22) In present study, 67.3% boys and 37.8% girls showed positive attitude toward sex education. The difference between the attitudes of boys and girls could again be because the students were from middle class conservative families where the girls are more protected and shy.

A study conducted in Pune by Pathan et al reported that an adolescent has various attitudes on various subjects and would like to discuss it in friendly atmosphere with parents and teachers. (23) It seems they need a helping hand at this stage of life to have more clear views towards healthy life. She concluded that adolescents do have positive or negative attitude towards themselves. She also found boys had different attitude towards self as compared to girls, which is similar to our study.

Conclusion

Adolescents have poor knowledge and attitude about issues related to growing up changes. A health education intervention programme improves the knowledge and attitude among adolescents regarding these changes. Long term follow up studies are needed to decide how much of the knowledge and attitude change lasts and translates into behaviour change. Sexuality education needs to be introduced at school level.

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Conflict of Interest : None

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Authors Contribution : VRD and AAK designed the manuscript and did literature search along with data anaylsis. All 3 authors wrote the manuscript. VRD will act as guarantor of the paper.

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