pISSN: 0976 3325 eISSN: 2229 6816

**ORIGINAL ARTICLE**

# ASSESSMENT OF FELT NEEDS AND EFFECT OF HEALTH EDUCATION INTERVENTION ON KNOWLEDGE REGARDING REPRODUCTIVE HEALTH OF SCHOOL STUDENTS IN A SLUM IN MUMBAI

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## ABSTRACT

**Objectives:**To assess the felt needs, level of knowledge and the impact of health education sessions over the period of one year regarding reproductive health among ninth standard school students of a slum area in Mumbai.

**Material and Methods:** The study is school based interventional follow up study.Health education sessions on reproductive health were conducted. Pre test, immediate post test, along with a follow up post test at six months and one year after intervention were administered. SPSS Version 17 and Excel software were used for analysis. Paired't' test and Chi-square test were applied.

**Results:** Base line knowledge in all aspects of reproductive health was observed to be very low as compared to the post tests. Knowledge was retained over the period of one year in questions pertaining to physical changes in boys and girls, female anatomy and role of female in sex determination.However significant loss ($p<0.01$) of the acquired knowledge was observed in questions pertaining to hormones, night emissions and masturbation. Need for sex education was perceived by 99.24 % students. Preferred class for initiation were sixth and seventh (24.09% and 43.39% respectively). Doctors (83.02%) were the most preferred sources of information.

**Conclusions:**Health education sessions are very effective in increasing knowledge. However, students tend to lose information regarding certain aspects as time progresses. Students are in need of scientific information from lower classes.

**Key-words:** Reproductive health, Sex education in schools, felt needs of adolescents

## INTRODUCTION

"Social and cultural ethos of India are such that sex education has absolutely no place in it", is a common belief.[1] Yet, child marriage leading to early sexual activity and romantic partnerships in traditional settings are prevalent.[2,3] Sex education will empower the adolescents, thus preventing teenage pregnancies, sexual abuse and control the HIV epidemic.[1,4] Problems of adolescents have been addressed by policy makers in International Conference on Population and Development (ICPD), Millennium Development Goals (target 5b) and Reproductive Child Health II under National Rural Health Mission.[4,5,6,7]However, the unique needs of youth remain unmet.

Thus, keeping in mind the need for sex education interventions, the current study was designed and implemented.

## MATERIALS AND METHODS

The present study is an interventional follow up study. It was carried out among ninth standard students of a Government aided school in the slums of Mumbai. One school was randomly selected out of 36 private and grant in aid

schools in the study area. The selected school had English and Marathi medium classes.

All the ninth standard students from both the mediums were included in the study. The school had two English medium divisions having 85 students (50 males and 35 females) and five Marathi medium divisions having 293 students (172 males and 121 females). Thus there were a total of 378 students. To construct the questionnaire and to understand the level of comfort of the students, four Focused Group Discussions (FGDs) were conducted. The FGDs were conducted separately for the boys and girls of both the mediums. Marathi, Hindi and English were the languages used for communication. A flip chart devised by UNICEF was used as reference point for discussion in FGDs, to develop the course content of the sessions, and also as the health education tool during the health education sessions. Physical and psychological changes in boys and girls at puberty, physiology of menstruation, physiology of conception, nocturnal emissions, masturbation and attitudes regarding these issues were discussed in the FGDs. Based on the flip chart and information attained from the FGDs, a semi structured questionnaire was designed. The same questionnaire was developed in both the languages and pilot tested. A parent teacher meeting was conducted. The flip chart and the questionnaire were put up for approval. After approval by the parents and teachers, the health education sessions were initiated. The content of the Health Education session was same as the topics discussed in the FGD.

Health education sessions on reproductive health were conducted in the school timings separately for girls and boys. A single session of one hour duration was conducted. The languages of instructions were Marathi and English for the concerned students. Sessions were conducted separately for each division. Each session started with a self-administered questionnaire. The students were assured of confidentiality. The questionnaires were answered like an examination. No exchange of thoughts and ideas was allowed. This was followed by the health education intervention. The first post intervention evaluation was done immediately after the health education session. This was labeled as 'immediate post test evaluation'. The second post test was administered at six months and third post test at one year after the health education session to observe the maintenance of impact of intervention on knowledge and attitude. Similar methodology was also adopted in a study carried out in Zimbabwe.[8]

**Statistics:** The data was analysed using SPSS version 17 and Excel software. Statistical analysis was carried out by applying Paired 't' test and Chi-square test as per data requirement.

## RESULTS

Out of the total of 378 students, 265 answered the pre test and all the three post tests. Thus the responses of these 265 students were recorded and analysed. Students who had not solved all the three post tests were excluded from the study. The mean age of the students was 14.96 years, standard deviation is 1.14 and range is 13 to 18 years. Majority of the students (69.43%) were from nuclear families.

**Table 1: Physical changes in boys and girls at puberty**

| | Mean Score | | | | P Values (paired 't' test) N = 265 |
|---|---|---|---|---|---|
| | Pre test | Post test | | | |
| | $P_0$ | Immediate $P_1$ | At 6 months $P_6$ | At 1 year $P_{12}$ | |
| Enumeration of physical changes in girls | 1.70 | 2.81 | 3.30 | 3.30 | *$P_0$ versus.$P_1$, $P_6$, $P_{12}$ (t= 92.5,145.45,133.33) *$P_1$ versus.$P_6$ (t = 44.54 ) *$P_1$ versus.$P_{12}$ (t=40.83 ) |
| Enumeration of physical changes in boys | 1.95 | 2.75 | 2.64 | 2.72 | *$P_0$ versus.$P_1$, $P_6$, $P_{12}$ (t=53.33,49.29,55 ) *$P_1$ versus.$P_6$ (t =7.86 ) †$P_1$ versus.$P_{12}$ (t=2.14) |

* = p<0.01 † =p<0.05 ‡ = Not significant

Education up tohigher secondary standards was attained by 64.15% fathers and 39.62% mothers. Average per capita income was Rs 324.77 per month. Most of the mothers (83.40%) were housewives (Class 8). Majority of the fathers (44.15%) were engaged into intermediate occupations (Class 3) like clerks, secretaries etc. [9]

The responses regarding physical changes in girls and boys at puberty were scored. (Table 1) Paired't' test was applied to the mean scores. Statistically significant gain in knowledge was observed inimmediate post intervention test as compared to pre test. The raise of knowledge was maintained throughout the year. ($p<0.01$).

As observed in Table 2, following dynamics in change in knowledge regarding reproductive health occurred over the period of one year. Chi square test was applied on the data in Table 2.

**Table 2: Changes in proportion of correct responses in pre and post tests**

| **Question** | Correct response | Pre test $P_0$ (%) | Post test | | | P Values ($X^2$ Score) N = 265 |
|---|---|---|---|---|---|---|
| | | | Immediate $P_1$ (%) | At 6 months $P_6$ (%) | At 1 year $P_{12}$ (%) | |
| Cause of Physical changes during puberty | Hormones | 83 (31.32) | 254 (95.85) | 225 (84.90) | 227 (85.66) | *$P_0$ versus$P_1$, $P_6$, $P_{12}$ ($X^2$= 235.5,154.1,158.92) *$P_1$ versus$P_6$ ($X^2$ = 17.02) *$P_1$ versus$P_{12}$ ($X^2$ = 15.2) |
| Menstrual blood and urine passes through the same orifice in women | No | 87 (32.83) | 203 (76.60) | 207 (78.11) | 200 (75.47) | *$P_0$ versus$P_1$, $P_6$, $P_{12}$ ($X^2$= 100.7,108.16,95.32) ‡$P_1$ versus$P_6$ ($X^2$ = 0.098) ‡ $P_1$ versus$P_{12}$ ($X^2$ = 0.042) |
| Woman is responsible for determining the sex of the baby | No | 149 (56.23) | 253 (95.47) | 249 (93.96) | 253 (95.47) | *$P_0$ versus$P_1$, $P_6$, $P_{12}$ ($X^2$=109.28,98.88,109.28 ) ‡$P_1$ versus$P_6$ ($X^2$ = 0.34) ‡ $P_1$ versus$P_{12}$ ($X^2$ = 0) |
| Having night emissions or wet dreams is a normal phenomena | Yes | 33 (12.45) | 220 (83.02) | 187 (70.57) | 180 (67.92) | *$P_0$ versus$P_1$, $P_6$, $P_{12}$ ($X^2$=261.64,181.92,167.32) *$P_1$ versus$P_6$ ($X^2$ =10.84) *$P_1$ versus$P_{12}$ ($X^2$ = 15.5) |
| Performing masturbation is not a bad deed | Yes | 33 (12.45) | 223 (84.15) | 198 (74.72) | 184 (69.43) | *$P_0$ versus$P_1$, $P_6$, $P_{12}$ ($X^2$= 269.9,206.4,175.56) *$P_1$ versus$P_6$ ($X^2$ = 6.65 ) *$P_1$ versus$P_{12}$ ($X^2$ = 15.29) |
| By using $X^2$ test | * = $p<0.01$ | | † =$p<0.05$ | ‡ = Not significant | | |

Hormones' being the cause of physical changes during puberty was known to 31.32% of the students before the health education session. This significantly increased to 95.85% post intervention ($p<0.01$). However there has been observed a statistically significant drop in the knowledge gained in the six monthly and yearly follow up. ($P_1$ versus.$P_6$,$P_{12}$, $p<0.01$)

Presence of separate orifices for the passage of menstrual blood and urine in women was known to 32.83% of the respondents and 56.23% of students answered correctly the question regarding the role of the woman in determining the sex of the baby. This has significantly increased post intervention and has remained so throughout the year. ($p < 0.01$)

Night emissions' being a normal phenomenon was known to only 12.45% of the students before intervention. This significantly increased to 83.02 % post intervention. ($p < 0.01$) However students were unable to retain their knowledge over the period of time.Similarly, when asked regarding masturbation, though the proportion of correct responses significantly increased from 12.45% at pre test to 84.15% on immediate post test, scoressignificantly decreased ($p < 0.01$) at six months (74.72 %) and further at one year (69.43 %).

Existing and preferred sources of information were evaluated once before the intervention. Television, news papers, teachers, friends and magazines were the main source of information

for the students (Figure 1). Internet was availed by only 1.51 % of the students;doctors were the source of information to only 0.38% of the sample and 5.66% of the students had no access to information regarding sex education.When asked regarding preferred sources of knowledge of sex education (Figure 1), a large majority of 83.02 % students preferred doctors to impart sex education, followed by teachers (40%) and television (30.19%). Only 21 % students preferred friends and 11.70 % preferred parents. Internet was preferred by only 3.77% of students.

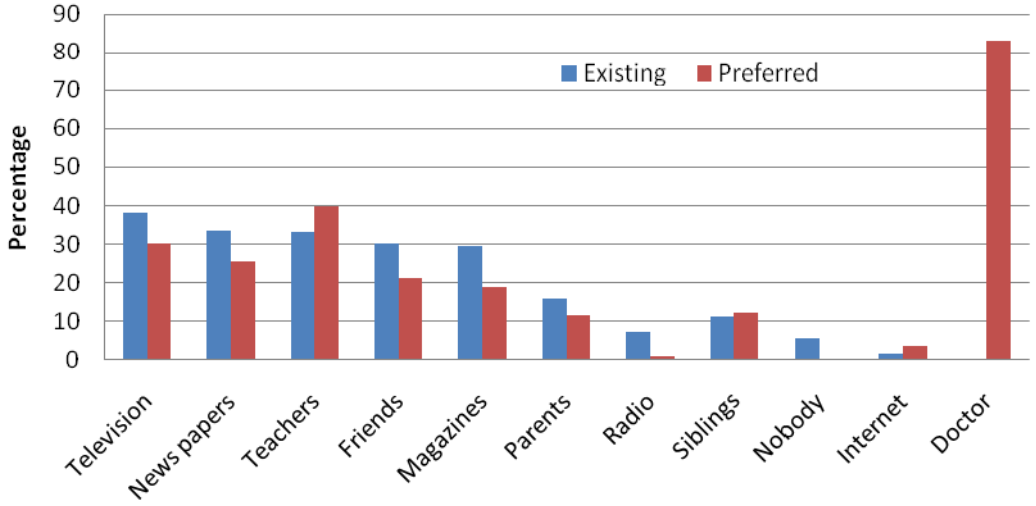


**Figure 1: Existing and preferred sources of knowledge for sex education**

Need of sex education in school curriculum was perceived by 94.72 % of the students even before intervention. After the sessions on sex education, this increased significantly to 97.36 %.($p< 0.01$) Over the period of one year, perception for this need has increased statistically significantly to 99.24 %. ($p< 0.01$). Preferred class for initiating sex education sessions was considered to be seventh and eighth class by 24.09% and 43.39% of the students respectively.

## DISCUSSION

Base line knowledge regarding all the aspects of reproductive health was lower than the knowledge that was tested immediately after the intervention. This raise of knowledge was maintained throughout the year ($p<0.01$).Similarly, poor baseline knowledge and increase in knowledge after intervention has been observed in other studies [4,10, 11]

As observed in the current study, several studies indicate that though night emission is a natural physiological process, due to lack of proper knowledge, several adolescent boys get quite embarrassed or frightened with this. Masturbation has also seen to be associated with numerous myths and misconceptions. [5, 12]

The data obtained in Indian Institute of Health Management Research (IIHMR), (ICMR) and other studies reveal that a sizeable proportion of adolescents use magazines, pornographic photo albums, adult movies and such other means for obtaining information on sex. [5, 13] Similar results as the current study have also been observed in other studies where doctors, health workers, parents and teachers were the preferred sources of information regarding reproductive health. [12,14,15]Though, parents and teachers both have an important role in the socio-cultural and personality development of adolescents their role in addressing reproductive and sexual health information needs and problems, is much below the expected level.[5]

As observed in the present study, several research papers and articles indicate the necessity of sex education being incorporated in school curriculum.[2, 3, 5, 12, 16, 17] Thus this emphasizes that young people remain poorly informed on issues of sexual and reproductive health andthose who report awareness tend to harbour misperceptions or have only superficial information about these issues. [4]

## LIMITATIONS

This study has not probed the aspects of knowledge and attitude regarding sexual

practices. Questions regarding individual sexual activity were also not included in the study as they were not appreciated by the school authorities.

## RECOMMENDATIONS

Incorporating sex education in school curriculum is the need of the hour. The information can be incorporated as a graded programme starting from seventh class extending to higher classes to maintain sustained levels of knowledge. Doctors attached to schools, parents and teachers should be trained and encouraged to talk to adolescents on the issues of growing up to make the entire programme more sustainable. Lastly, educational programmes can increase awareness about reproductive health, but in the absence of appropriate health services, this awareness may not always translate into appropriate help seeking by adolescents. [18]

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