CHAPTER V

DISCUSSION

This chapter deals with a detailed discussion and interpretation of the findings of the study interpreted from the statistical analysis. The findings are discussed in relation to the objectives and research hypotheses of the study. Need for the study, the literatures reviewed for the present study, and the theoretical framework were kept in mind while discussing the findings. The flow of discussion is presented in line with the objectives and research hypotheses of the study.

Adolescence is regarded as an unique phase of human development and adolescents are an important resource of any country and are at high risk of sexual and reproductive health problems. The concern for sexual and reproductive health of adolescents has particularly grown because of real and perceived increase in their sexual activities, associated with vulnerability to reproductive health issues, increasing number of adolescents are having sex before marriage, unplanned pregnancies, induced abortions and Sexually Transmitted Infections (STIs), including HIV (Human Immunodeficiency Virus).

Research indicates that the lack of sexual and reproductive health knowledge is one of the main explanatory factors for the
increase in the number of transmission of AIDS, STDs, unintended pregnancies and unsafe abortions. In order to lead healthy, responsible and fulfilling lives and to protect themselves from reproductive health problems, the adolescents need to be knowledgeable about them and need adequate information about the physical, psychological changes that take place during puberty, menstruation, pregnancy, and child birth.

Needless to say that the Behavior Change Communication programme is the most effective when appropriately targeted and tailored to the contexts in which young people live, and to their felt needs. In view of this, the current study assessed the impact of Behavior Change Communication programme on sexual and reproductive health among the adolescents in terms of knowledge, attitude and practices in a selected educational institution at Puducherry.

The objectives of the study were

Phase I

1. To assess the felt learning needs of the late adolescents regarding sexual and reproductive health.

Phase II

2. To assess the level of knowledge, attitude and practice regarding sexual and reproductive health.

3. To evaluate the effectiveness of Behavioral Change Communication on knowledge, attitude, and practice regarding sexual and reproductive health.
4. To find out the correlation among the knowledge, attitude, and practice regarding sexual and reproductive health

On the basis of the objectives and framework developed, mixed method research design was chosen for the present study. The first objective of the study needed data collected through qualitative research method wherein phenomenological approach was used (Qualitative Phase). The other objectives of the study (2-4) needed data collected through quantitative research method wherein pre-experimental research one group before – after design was used (Quantitative Phase).

**Qualitative Phase of the Study (Phase-I)**

In order to get the views of late adolescents’, the subjects were selected by simple random sampling method. This phase was conducted in selected setting (AASC) from August to October 2009. During this period of 3 months, a total 30(15 boys and 15 girls) as per the inclusion criteria enrolled for the present phase of the study. Focus group discussions were used to collect data with the help of pre-tested focus group discussion guide. The discussions were video and audio recorded and late transcribed into English. Discussions were analysed by means of a two stage interpretative and thematic analysis, involving the detailed reading and re-reading of the discussion in order to generate the common consensus of needs on knowledge, attitude and practices of sexual and reproductive health among adolescents.
Quantitative Phase of the Study (Phase-II)

This phase was conducted in selected educational institution (AASC) from June to December 2010. During this period of six months, a total of 243 (126 boys and 117 girls) adolescents as per inclusion criteria were enrolled in the study by multistage cluster sampling method. In the pre intervention phase, the subjects were assessed for socio-demographic characteristics, knowledge, attitude and practices of sexual and reproductive health among late adolescents by using a pre tested questionnaire developed by the researcher. During the intervention phase, a behaviour change communication programme was given in four sessions to the study subjects.

In the post intervention phase data related to, knowledge, attitude and practices of study subjects on sexual and reproductive health were collected using the same questionnaire used in the pre intervention phase to evaluate the effectiveness of behaviour change communication programme. Data were analysed by using appropriate descriptive and inferential statistics. The findings of the study are discussed based on the objectives.

Description of socio-demographic characteristics of study subjects included in Qualitative Phase

The researcher made an attempt to collect the information with regard to socio-demographic characteristic of study subjects as a part
of introduction to the study subjects included in the qualitative phase of the study. Data characteristics were analysed using frequency and percentage. There was 1 table to describe them. The total number of subjects included in the phase was 30 (15 boys & 15 girls).

**Religion:** Most of the boys (53.34%) and girls (60%) belonged to Hindu religion. This finding could be inferred that majority of people in India follow Hinduism and that might be the reason that most of the subjects belonged to Hindu religion.

**Father’s Education:** Most of the subjects’ fathers had middle level of education (boys (33.33%) and girls (40%)). Considering middle level of education, it was found that majority of the subjects’ fathers had no education to the extent that they had an understanding of value of education to their children. Since father is the head of the family in the Indian system of living the level of education of the father has got influence over the children’s education. In the present technological era, it is necessary that everyone in India needs to be literate. It could be inferred that in Indian setting education of fathers’ level is found to be less than western countries.

Regarding mothers’ education, only 26.67% of the male subjects’ mothers studied graduation whereas 33.33% of female subjects’ studied primary level of education. This finding was different to that of father’s education level. When both father and mother’s have equal level of education, there would be less chance of conflict, complex and misunderstanding and it helps the adolescents to
progress in their education. In India, women education is markedly less when compared to men. Girls once they attain puberty, mostly during their secondary level of education are discouraged to pursue higher education. In the present study also it was confirmed that majority of subjects mothers had below higher secondary level of education.

**Place of stay:** Most of the subjects (53.33% boys, 73.33% girls) were from urban region. This finding could be because of modernization, more people migrate from villages and settle in urban areas. The residence has an influence on the level of knowledge of the study subjects. Urbanites are exposed to mass media and gain more and more information with regard to sexual and reproductive health.

**Type of Family:** Regarding family type, majority of the subjects belonged to nuclear family (60% boys, 66.67% girls) as it is inferred that due to socio-cultural changes, joint family norm has been changed in this technical era. In the nuclear family, where in, both parents go for work as a need for economical survival the parents limit the family size.

**Source of information:** Friends/neighbours reported as source of information regarding sexual and reproductive health by 53.33% boys and 46.67% girls followed by internet (20% boys and 13.34% girls). This finding could be inferred that the adolescents had not been offered education on sexual and reproductive health as teachers are not ready to teach about sexual and reproductive health and also
cultural factors might have prevented them from talking to their families about sexual and reproductive health. As girls may feel embarrassed to talk about sexual and reproductive health with peers, they may prefer to get information through internet.

**The first objective of the study was to assess the learning needs of late adolescents regarding sexual and reproductive health (Phase - I)**

The focus group discussions brought up several important findings concerning adolescents’ knowledge, attitude and practice on sexual and reproductive health. Discussions were analyzed by means of a two stage interpretative and thematic analysis, involving the detailed reading and re-reading of the discussion in order to generate the common consensus on learning needs on sexual and reproductive health among adolescents. Common themes identified were:

- Growth and development
- Genital hygiene
- Menstruation and menstrual hygiene
- Responsible sexual behaviour
- Sexually transmitted infections including HIV/AIDS

**Growth and Development**

Most of the participants revealed a concern about lack of knowledge in growth and development and changes that take place during adolescence. Most of them expressed needs of information on normal anatomy and the changes that take place in them associated
with puberty as reported by participants that “Even now we do not know how girls/boys attain puberty, we are curious to know it”.

Majority of them appeared totally ignorant about parts of their body and terminologies used. They asked questions like ‘what is vagina and where it is?’ and ‘what is penis and where it is’. Most of the subjects were concerned about changes in their bodies and relationship with other sex. Some have described turmoil stemming from the physical changes of puberty and intense preoccupation with physical appearance. This is reflected in the needs expressed by this group about breast size, penis size, appearance of moustache and pimples and the factors that may influence it. ‘Some people say that if you started to masturbate as it would enhance growth of beard & moustache’.

**Menstruation and Menstrual Hygiene**

Lack of knowledge about menstruation appears to be a fairly common concern by most of the girl adolescents. Large proportions of the informants were not aware about menstruation when they first experienced it. Most were frightened, embarrassed and disturbed due to ignorance about such a natural process.

Most of the girls came to know about menstruation when they first started menstruating and found it unusual or abnormal. In a majority of the cases, the girls were frightened to see and feel the bleeding. “One day suddenly I saw blood spots on my skirt in school,
worried, I rushed to home and started weeping. Finally, out of fear and shame, I told my mother about it” reported by some of the participants.

During the discussions some of the girls stated that they were not aware about phenomenon of menstruation, but they observed that the females in their family keep themselves away from certain activities for two to three days every month. When they asked their mother or other family members about it, either no reason was stated or they were told that they had become unclean.

Most of the girls believed that menstruation is not a natural process and one should not attend religious rituals, cook during menstruation. They were neither allowed to enter or touch any item in the kitchen, nor doing domestic work like cooking, going to temples and carrying out poojas. Some of the respondents reported as “We are scolded for sleeping during menstruation period, lot of restrictions to do poojas, to go out, to attend festival, to touch parents as well as others in the home”.

It was revealed during the focus group discussions with adolescent girls that they had very little idea about hygienic practices during menstruation. The practice of using cloth during menstruation was common among school girls and only some reported using readymade sanitary pads. Most of the girls reused the old cloth during subsequent periods. The usual practice is to wash the cloth with soap and water after use and keep it at some secret place till the next
menstrual period. To keep the cloth away from eyes of others, these are sometimes kept at most unhygienic places.

A great deal of their scant knowledge is dependent on informal communications with peers and family members. Much of the information about menstruation imparted to a young girl is on restrictions on her movements and behaviour rather than process of menstruation and menstrual hygiene.

The ignorance surrounding menstruation and menstrual hygiene was illustrated in another study in south-western Nigeria, where it was found that 40% of the menstruating girls were deficient in knowledge about menstruation, 66.3% of the girls used unsuitable materials as absorbent and 84% of them were not prepared for their first menstrual flow.

Studies both in developed and developing countries have found a culture of silence and shame surrounding menstruation, with numerous taboos and restrictions on girls and women. These issues should be dealt with aggressively by the health educators. There is a dearth of information about sexual and reproductive health to girls concerning the breast size, menstruation and menstrual hygiene.

**Masturbation**

A lot of ignorance about sexual functioning was identified among boys. The myths and misinformation identified is indicative of lack of sexual and reproductive health education among these
adolescents and their peers in the setting they were drawn from. Some of the myths identified include related to masturbation; “Masturbation will affect the Concentration and memory power, and make us physically weak....”; “I used to be intimidated by the huge body built of my seniors and I masturbated to build my body” and “One ml of semen equal to ten ml of blood, so we should not masturbate and waste it....” reported by the participants.

**High Risk Behaviours**

The findings of the qualitative part of study revealed that many participants had misconceptions about sexual and reproductive health and practicing high risk behaviours. An interesting finding was that the participants felt that the appropriate age for first sexual contacts should be 15 years because at that age ‘one produces sperms and is powerful’. “Consumption of alcohol will yield, more sexual pleasure and semen” reported by some of the participants.

Several participants thought that if a boy and a girl of 15 years of age or less have sexual contact, the girl would not become pregnant, because "one can get pregnant after marriage only". Both males and females expressed this belief.

Premarital sex by adolescents appears to be a fairly common phenomenon in the selected setting. A number of reasons were adduced for the practice of premarital sex among adolescents. The main reasons identified from the present study were: money and sex due to peer pressure. Some of the respondents accepted that parent’s
were not able to give money for them to buy food in school, snacks, to visit beauty parlor and for mobile phone recharge, etc. and hence compromised to have sexual relationship in exchange to get these.

Another important finding was that many of the male and female participants had a negative perception of not having sex regularly. There were fears that one could be embarrassed in the later life when one did not know what to do and the partner may laugh at you if you don’t know what to do. Both male and female participants peer pressures was suggested as the important driving force in their sexual life because “If I say I never had sex, my friends will mock at me saying I am not a man” and “I have a low self esteem because of small size of my breasts, many times I voluntarily allow the boys to physically handle my breast expecting it would enlarge size”

According to all focus group discussions, the practice of pregnancy termination is not uncommon among adolescents in selected setting. Most of the pregnancy termination methods mentioned by the adolescents were unsafe. Pregnancy termination at home referred to the inducement of termination at girl’s own house or in the informal private nursing homes. Adolescents who were in college, largely unemployed and also did not want their parents to know about the pregnancy opted for cheap and unsafe methods. Most of the informants believed that “Easy access through mobile phone is the root cause for many of the sex related problems.”
Contraception

Many participants had misconceptions about contraception and negative attitude towards contraception. Information from several focus groups suggests that use of condom were inconsistent because of a perception that condoms are not suitable for young people because condom will decrease the sexual pleasure.

According to the adolescents in the selected setting, young people procured condoms from pharmacy or chemist shops. Many of the subjects didn’t feel comfortable to buy condoms because the shopkeeper asks too many questions and everybody would know that going to have sex. This would prevent them to use condoms during sexual contact to prevent pregnancy and sexually transmitted diseases.

The persistence of misconceptions regarding the use of oral contraceptives was paramount among the study participants. Of concern is the widespread view of adolescents that oral contraceptives are dangerous, have many side effects and can lead to infertility because “they don't think contraceptives are good for use. When we use them they can end up destroying our reproductive system”. Impotency, backaches and difficulties in delivering a baby were said to be the negative effects of ‘being abstinent’ by some of the participants.

STI’s including HIV/AIDS

From verbal interaction with the study participants, there appears to be a lot of information about safe sex, HIV/AIDS and STI's. The scope of knowledge about other STIs including HIV/AIDS was
limited among male and female adolescents. The major sexually transmitted infection in the study setting was HIV/AIDS. Several participants were pro-active in seeking more information about STIs during the discussion. Most of them had misconception that “AIDS spreads from girls to boys, not from boys to girls.”

Interestingly, some participants stated that condoms were not useful to prevent HIV/AIDS because condoms could not stop the spread of the AIDS; if one partner has the virus it will go through”. All participants wanted to know more about HIV/AIDS and STI’s.

**Sources of information**

The sexual and reproductive health services in the selected setting were not adolescent-friendly. This was clearly expressed by all participants. Most of the subjects felt it was extremely difficult and embarrassing to discuss sexual matters with their parents, elders as well as school teachers. They feared that by raising the topic of sexuality for discussion, their parents and teachers would interpret it as actual evidence of sexual involvement. They said that parents & teachers are potentially important sources of information and support on these issues, but in practical social scenario they are not because Parents always advice us without giving any information and teachers deliberately avoided teaching the lesson on human reproductive system.

Television, radio and reading materials have been the predominant mass media sources of reproductive health information.
Most of the participants reported the main sources of information were peers, books, television, movies and internet.

The myths and misinformation identified during focus group discussion is indicative of a lack of relevant reproductive health education and lack of mentors for these adolescents and most of them expressed the need for education regarding sexual and reproductive health in conducive and non-threatening environment.

These qualitative findings revealed that overall knowledge of sexual and reproductive health among adolescents was very poor; prevalence of premarital sex was common. Boy’s have more liberal attitudes towards premarital sex as compared to girls. Practice of high risk behaviors were most prevalent among adolescents like premarital sex, alcohol use and non usage of condoms and taking medicines to increase their body mass, size of the breast & penis. Knowledge regarding STI’s including AIDS/HIV was low in most of the subjects. Adolescents residing in selected study setting have certain crucial needs which influence their knowledge, attitude and practices on sexual and reproductive health.

The felt learning needs of adolescents in the areas of sexual and reproductive health emerged from the present phase of the study were;

- Growth and development
- Genital hygiene
Menstruation and menstrual hygiene

Responsible sexual behaviour

Sexually transmitted infections including HIV/AIDS

The result of the present phase of the study provided the existing knowledge, attitude and practice of adolescents on sexual and reproductive health was poor and revealed that significant number of individuals were involved in various kinds of high risk sexual behaviour. There was need of incorporating behaviour change communication intervention at educational environment in this group (17-19 years) of adolescents about sexual and reproductive health to increase the knowledge and develop positive attitude regarding sexual and reproductive health and promote positive practices related to sexual and reproductive health. Findings of this phase was useful in designing and implement behaviour change communication intervention on sexual and reproductive health in selected educational institution of Puducherry based on the identified felt learning needs of the adolescents comprehensively.

Socio-demographic Characteristics of the Subjects Included in Quantitative Phase (Phase – II)

The researcher made an attempt to collect the information with regard to socio-demographic characteristic of study subjects as a part of introduction to the study subjects included in the quantitative phase of the study. Data characteristics were analysed using frequency and percentage. There are 2 tables to describe them. The
total number of subjects included for the study was 243 (126 boys and 117 girls).

**Religion:** Among boys, majority of the subjects belonged to Hindu religion 79(62.70%) followed by Christianity (21.43%). Among girls also majority of the subjects belonged to 84(71.79%) Hindu religion followed by Christianity 18(15.38%). This finding could be inferred that majority of people in India follow Hinduism and that might be the reason that most of the subjects belonged to Hindu religion.

**Father’s Education:** Table 2 and 26 showed that the father’s education of the male subjects under seven categories, majority of them 33(26.19%) had middle level of education, 27(21.43%) had secondary level of education and 26(20.63%) were educated upto higher secondary. Whereas among girls, 30(25.64%) of the subject’s fathers were graduates and 26(22.22%) had middle or higher secondary level of education. Considering middle level of education and above, it was found that majority of the subjects’ fathers had education to the extent that they had an understanding of value of education to their children. Since father is the head of the family in the Indian system of living the level of education of the father has got influence over the children’s education. In the present technological era, it is necessary that everyone in India needs to be literate. It could be inferred that in Indian setting education of fathers’ level is found to be less than western countries.
Mothers Education: Table 2 and 26 projected the mothers’ education of the subjects under seven categories. Among boys, majority of the subjects’ mothers 33(26.19%) had no formal education, 26(20.63%) were educated upto higher secondary level and 23(18.25%) of them had secondary level of education. Considering the mother’s education among girls, 27(23.08%) of the subjects’ mothers had secondary level of education, 22(18.80%) had middle school level of education and 21(17.95%) had primary level of education. This finding was different to that of father’s education level. When both father and mother’s have equal level of education, there would be less chance of conflict, complex and misunderstanding and it helps the adolescents to progress in their education. In India, women education is markedly less when compared to men. Girls once they attain puberty, mostly during their secondary level of education are discouraged to pursue higher education. In the present study also it was confirmed that majority of subjects mothers had below higher secondary level of education.

Place of stay: More than half of the male subjects 72(57.14%) and 64(54.70%) of female subjects were from urban area. This finding could be because of modernization, more people migrate from villages and settle in urban areas. The residence has an influence on the level of knowledge of the study subjects. Urbanites are exposed to mass media and gain more and more information with regard to sexual and reproductive health.
**Family Type:** Regarding family type, majority of the male subjects 89(70.63%) and female subjects 87(74.36%) belonged to nuclear type of family as it is inferred that due to socio-cultural changes, joint family norm has been changed in this technical era. In the nuclear family, where in, both parents go for work as a need for economical survival the parents limit the family size.

**Source of Information:** Majority of the boys 56(44.44%) had received information on sexual and reproductive health through friends/neighbours. This finding could be inferred that the adolescents had not been offered education on sexual and reproductive health as teachers are not ready to teach about sexual and reproductive health and also cultural factors might have prevented them from talking to their families about sexual and reproductive health.

Considering source of information regarding sexual and reproductive health, nearly one third of the girls 38(32.48%) had received information on sexual and reproductive health through friends/neighbours while 22(18.80%) received through internet. This finding could be inferred that the adolescents had not been offered education on sexual and reproductive health as teachers are not ready to teach about sexual and reproductive health and also cultural factors might have prevented them from talking to their families about sexuality. As girls may feel embarrassed to talk about sexual and reproductive health with peers, they may prefer to get information through internet.
The Second Objective of the Study was to Assess the Level of Knowledge Attitude and Practice regarding Sexual and Reproductive Health

This section examined the data pertaining to the following objective after analysed the data.

**Knowledge on Sexual and Reproductive Health in the Pre-test**

The pre-test knowledge on sexual and reproductive health among boys revealed that majority 57(45.24%) had inadequate knowledge and only 28(22.22%) of them had good knowledge whereas among girls more than half of them 75(64.10%) had adequate knowledge, 32(27.35%) had inadequate knowledge and only few 10(8.55%) of them had good knowledge in spite of the fact that all participants had received information regarding sexual and reproductive health from sources like family members, neighbours, friends, class teachers and other media resources. This might be because people do not imbibe all information they get and tend to forget most of the information. It is also a matter of motivation and perceived benefits. If people do not see the benefits of a given behaviour they do not practice it, regardless of understanding. It might be that the educational information is insufficient to address the needs of adolescents and the educational methods used are flawed. Another reason could be these informal sources of information on sexual and reproductive health are also not equipped with good knowledge regarding sexual and reproductive health and could not provide adequate information for the needy adolescents.
The findings of the present study were consistent with Kanku T and Mash R (2010) who found that understanding of reproductive health was poor and their understanding of the menstrual cycle was inaccurate among teenagers. Study done by Ab Rahman A et al (2011) also revealed that lack of knowledge regarding important aspects of sexual and reproductive health warrant the need to strengthen sexual and reproductive health education. Nair MK et al also reported that (2011) majority of adolescents were poorly informed about reproductive sexual health matters, particularly about contraceptives.

**Knowledge on Anatomy and Physiology of Reproductive System in the Pre-test**

The analysis of dimension wise level of knowledge on anatomy and physiology of reproductive system among boys in the pre-test revealed that more than half of them 69(54.76%) had adequate knowledge regarding anatomy and physiology of male reproductive system. Vaibhavkumar B et al (2010) conducted a cross sectional study on knowledge and needs about various aspects related to adolescent health in school going adolescents and found that 43.2% of boys and 62.3% of girls was aware about the components of the reproductive System. The present study results also confirmed the similar findings.

Among girls also more than half of them 65(55.56%) had adequate knowledge and 42(35.90%) had inadequate knowledge regarding the anatomy and physiology of female reproductive system in the pre-test. This finding was consistent with the cross - sectional
study conducted by Carvacho IE. et al (2008) on knowledge of some aspects of the female reproductive anatomy and physiology and their association with the socio-demographics of pregnant adolescents found that a majority had little knowledge of anatomy (55.5%), with external organs more easily identified than the internal; of the physiology of reproductive organs (61.0%), and of the physiology of reproduction (76.5%). Marni Sommer (2009) also found that significant gaps in girls' knowledge on body changes, sexual health and underlined the importance of identifying new girl-centered approaches to guidance on bodily development and prevention of sexual and reproductive health problems which were consistent with the findings of the present study.

Another study of Saadet Yazıcı et al., (2011) was not consistent with present study findings that 82.3% of the male and female students are aware of the changes in their own bodies, and 69.2% of them have knowledge about the place and the functions of their reproductive organs.

**Knowledge on Genital Hygiene among Boys in the Pre-test**

In relation to knowledge on genital hygiene among boys in the pre-test, more than one third of the subjects 48(38.09%) had adequate knowledge and nearly one third 40(31.75%) had poor knowledge on genital hygiene. None of the previous studies specifically reported about this finding.
Knowledge on Puberty and Menstruation in the Pre-test

Among girls, more than half of the subjects 62(52.99%) had good knowledge and one third of them 41(35.04%) had adequate knowledge on puberty and the menstrual cycle in the pre-test. A study done by Saadet Yazıcı (2011) also found that 55.2% of the students have adequate knowledge about puberty which was consistent with the finding of the present study. Ali Moazzam et al., (2004) explored qualitative information on existing knowledge and perceptions on puberty and reproductive health needs and to identify effective communication channels for imparting reproductive health education to adolescent males in Pakistan. The study pointed out that there were misconceptions and gaps in knowledge regarding puberty which was inconsistent with the findings of the present study. Marni Sommer (2009) also found that significant gaps in girls' knowledge on mensus.

In the present study, a majority of the female subjects 44(37.61%) had adequate and 43(36.75%) had good knowledge on menstrual hygiene in the pre-test. Nair MK et al., (2011) studied the menstrual problems and menstrual hygiene practices of adolescent girls in the age group 15-19 years and found that menstrual hygiene was adequate in the majority of girls. Yet another study conducted by Tazeen Saeed Ali (2010) to explore the menstrual practices among 1275 female adolescents of urban Karachi, Pakistan showed that 50% of the girls lacked an understanding of the origin of menstrual blood and had fear at the first experience of bleeding.
Knowledge on Responsible Sexual Behaviour in the Pre-test

More than half of the boys had adequate knowledge 68(53.97%) on responsible sexual behaviour and a few of them 20(15.87%) had a poor knowledge; in the pre-test whereas among girls, less than half of them had adequate knowledge 50(42.73%) on responsible sexual behaviour and 37(31.62%) had good knowledge in the pre-test. A Study conducted by Dhital AD et al., (2010) also found that the pre-test knowledge score of responsible sexual behaviour was poor in the experimental and control group which was similar to the findings of the present study.

Knowledge on Sexually Transmitted Diseases in the Pre-test

Among boys, less than one third of them 38(30.16%) had good knowledge and 26(20.63%) had an excellent knowledge regarding sexually transmitted diseases in the pretest. Nearly one third of them 35(27.78%) had poor knowledge and 27(21.43%) had adequate knowledge. Anurag Srivastava et al., (2011) assessed the awareness of HIV/AIDS among adolescents of Bareilly district aged 11-19 years, and found that there was a low level of awareness regarding modes of transmission, methods of prevention, and treatment. The study concluded that the challenge lies in developing programmes to spread awareness and to induce behavioral changes among them. Yet another study was conducted by Abruquah HH et al., (2008) on knowledge, attitudes and sexual practices relating to HIV/AIDS among adolescents and it was found that, generally, knowledge of STIs among adolescents was low. A cross- sectional study conducted by Kennedy
D Mwambete et al., (2006) on knowledge of STDs, and attitude towards sexual behavior and STDs among secondary school students also found similar findings which was consistent with the present study.

Among girls, a majority of them 49(41.88%) had poor knowledge and only 36(30.77%) had an adequate knowledge regarding sexually transmitted diseases in the pre-test. This finding was similar to Amoakah-Coleman M (2006) who examined knowledge, attitude and practices of sexually transmitted infections including HIV/AIDS among adolescents in Ghana and revealed that adolescents have a wide gap between knowledge, attitude and practice with regard to STIs and HIV/AIDS. Another study conducted by Anurag Srivastava et al (2011) among adolescents of Bareilly district also supported this finding which showed low level of awareness regarding modes of transmission, methods of prevention and treatment of sexually transmitted diseases and concluded that the challenge lies in developing programmes to spread awareness and to induce behavioral changes among adolescents.

The reasons for a low level of knowledge regarding sexual and reproductive health might be that the adolescents had not been offered education on sexual and reproductive health and also cultural factors might have prevented them from talking about sexual and reproductive health issues to their families. The adolescents really needed knowledge of sexual and reproductive health as it was
expressed by them as felt learning needs during the first phase of this study.

**Attitude on Sexual and Reproductive Health in the Pre-test**

The analysis of the pre-test attitude on sexual and reproductive health among boys revealed that a majority of them 84(66.67%) had an unfavorable attitude and nearly one-fourth of them 34(26.99%), had moderately favorable attitude on sexual and reproductive health. Among girls also, a majority of them 83(70.94%) had unfavorable attitude and less than one-fourth of them had 18(15.38%) had a favorable attitude on sexual and reproductive health in the pre-test. These findings were consistent with the findings of Rondini S et al (2009) on knowledge, attitude and practices of reproductive health of adolescence in the secondary school student population of the Bolgatanga community. Study conducted by Nigatu Regassa et al., (2011) on higher education students’ attitudes and practice on preventive measures against HIV/AIDS also revealed that most of them had an unfavorable attitude which supported present study findings.

**Attitude on Sexual and Reproductive Health in the Pre-test**

With respect Table 10 revealed the dimension wise attitude on sexual and reproductive health among boys in the pre-test. More than one third of them 50(39.68%) had unfavorable attitude and nearly one third 39(30.95%) had moderately favorable attitude on sex education. Only less than one fifth of them 20(15.88%) had favorable
attitude and 17(13.49%) had highly favorable attitude on sex education. Nearly of half of them 55(43.65%) had unfavorable attitude and more than one third of them 45(35.71%) had moderately favorable attitude towards sexual behavior. Less than one sixth of them 18(14.29%) had favorable attitude and only few of them 8(6.35%) had highly favorable attitude towards sexual behavior.

More than half of them 68(53.97%) had unfavourable attitude and 37(29.37%) had moderately favourable attitude towards high risk behaviour. Only few of them 6(4.76%) had favourable and 6(4.76%) had highly favourable attitude on high risk behaviour. More than half of them 74(58.73%) had unfavourable attitude and 40(31.75%) had moderately favourable attitude towards sexually transmitted infections. Only few of them 8(6.35%) had favourable and 13(10.31%) had highly favourable attitude on sexually transmitted infections.

**Practices related to Sexual and Reproductive Health in the Pre-test**

The analysis of pre-test practice on sexual and reproductive health among boys revealed that more than one third of them 53(42.06%) had adaptive practice followed by 36(28.57%) of them who had moderately adaptive practice; whereas among girls, one-third of them 39(33.33%) had adaptive practice followed by 30(25.64%) had highly adaptive practice and 27(23.08%) had maladaptive practice on sexual and reproductive. Li S et al., (2009) also reported that prevalence of sexual behavior was 47.3% among adolescents of
migrant workers and 34.3% of those adolescents of general residents reported non usage of condom during sexual intercourse in the last three months. Yet another study conducted by Nwaorgu OC et al., (2008) assessed the reproductive health knowledge and practices of 412 junior secondary school pupils from 12 schools in Enugu State, Nigeria also reported similar findings. Simbar M et al.,(2005) studied the reproductive health knowledge, attitudes and practices of youth in the Islamic Republic of Iran. Fifty fourth (8%) reported having sexual intercourse before marriage and majority of them believed in the benefits of reproductive health knowledge for youth but felt that services were inadequate.

As shown in the Table 16, dimension wise practice on sexual and reproductive health among boys in the pre-test, nearly one third of them 42(33.33%) had adaptive practice followed by 32(25.40%) moderately adaptive practice and 23(18.25%) had highly adaptive practice on genital hygiene. Nearly one fifth of them 29(23.02%) reported maladaptive practice related to genital hygiene. More than one third of them 50(39.69%) had highly adaptive practice and 32(25.40%) had adaptive practice on high risk behaviour. Only few of them 16(12.70%) had maladaptive practice and 28(22.22%) had moderately adaptive practice on high risk behaviour. Nearly two third of them 75(59.52%) had highly adaptive practice and 51(40.48%) had maladaptive practice on sexual behaviour.
Dimension wise Practice on Sexual and Reproductive Health among Girls in the Pre-test

As shown in the Table 44, dimension wise practice on sexual and reproductive health among girls in the pre-test. More than half of them 65(55.56%) had maladaptive practice and 42(35.90%) had moderately adaptive practice on menstrual/perineal hygiene. Only few 10(8.54%) had adaptive practice and none of them reported highly adaptive practice on menstrual/perineal hygiene. More than one third of them 40(34.89%) had adaptive practice and 37(31.62%) had moderately adaptive practice on high risk behaviour. Only few of them 11(9.40%) had maladaptive practice and 29(24.79%) had highly adaptive practice on high risk behaviour. Majority of the subjects 110(94.02%) had highly adaptive practice and 7(5.98%) had maladaptive practice on sexual behaviour.

The Third Objective of the Study was to Evaluate the Effectiveness of Behavioural Change Communication on Knowledge, Attitude and Practice Regarding Sexual and Reproductive Health

Knowledge on Sexual and Reproductive Health in the Post-tests

Knowledge on sexual and reproductive health among boys in the post-test revealed that a majority of them 74(58.73%) had good knowledge and 26(20.64%) had excellent knowledge and among girls also a majority of them 90(76.92%) had good knowledge and 16(13.68%) had an excellent knowledge on sexual and reproductive health. Knowledge on sexual and reproductive health among boys in the 1st follow up test revealed that majority of them 70(55.56%) had
good knowledge and nearly one third of them 44(34.92%) had excellent knowledge. Among girls also 76(64.96%) of girls had good knowledge and 39(33.33%) had an excellent knowledge. An analysis of the 2nd follow-up test level of knowledge on sexual and reproductive health among boys revealed that a majority of them 61(48.41%) had excellent knowledge and nearly half of them 55(43.65%) had good knowledge. Among girls also majority of them 66(56.41%) had a good knowledge and 49(41.88%) had an excellent knowledge on sexual and reproductive health. Nair MK et al., (2011) assessed the effectiveness of a school based "Adolescent Reproductive Sexual Health Education (ARSHE) Package" in improving students' knowledge on reproductive sexual health matters. After the intervention; there was a statistically significant increase in the knowledge in various aspects of sexual and reproductive health in both boys and girls which was consistent with the findings of the present study.

These findings were supported by the study conducted by Hettiarachchi R et al., (2011) on effectiveness of an educational intervention on sexual and reproductive health which revealed that subjects in the intervention group had higher mean scores for post intervention knowledge on sexual and reproductive health, pregnancy related issues and sexually transmitted infections.

The findings of the present study were consistent with the study of Malleshappa K et al., (2011) on the effectiveness of a reproductive health education intervention programme in improving the knowledge of adolescent girls aged between 14-19 years. The study also revealed
that significant increase in overall knowledge regarding menstrual cycle, ovulation, fertilization and pregnancy, transmission & prevention of STDs was noted after intervention. Reproductive health program improved students' knowledge and behavior about sexuality and decision-making after the program for both girls and boys by Madeni F (2011) also this study supported the findings of the present study.

**Attitude on Sexual and Reproductive Health in the Post-tests**

The analysis of attitude on sexual and reproductive health among boys in the post-test revealed that a majority 61(48.41%) had favourable attitude and nearly one third of them 38(30.16%) had a moderately favourable attitude on sexual and reproductive health which further improved to 63(50%) who had a favourable attitude and 29(23.02%) had highly favourable attitude in the 1st follow up test and 65(51.59%) had favourable attitude and more than one-third of them 54(42.86%) had highly favourable attitude on sexual and reproductive health in the 2nd follow up test.

The assessment of attitude on sexual and reproductive health among girls in the post-test revealed that a majority of the subjects 53(45.30%) had favourable attitude and nearly one third of them 37(31.62%) had moderately favourable attitude on sexual and reproductive health. In the 1st follow up test, majority of them 54(46.15%) had favourable attitude and nearly one third of them 40(34.19%) had highly favourable attitude, and in the 2nd follow up test, 55(47.01%) of the subjects had a highly favourable attitude and
51 (43.59%) had a favourable attitude on sexual and reproductive health. These findings clearly indicates that after imparting behavioral change communication there was a significant improvement among boys and girls in their attitude level on sexual and reproductive health in the post-tests which was consistent with previous studies.

**Practice on Sexual and Reproductive Health in the Post-tests**

In the post-test, a majority 57 (45.24%) of the boys had a highly adaptive and one third of them 34 (26.98%) had an adaptive practice on sexual and reproductive health. Twenty nine (23.02%) had moderately adaptive and few of them 6 (4.76%) had maladaptive practice in sexual and reproductive health. In the 1\textsuperscript{st} follow-up test, a majority 62 (49.21%) had a highly adaptive practice and one third of them 44 (34.92%) had adaptive practice, 84 (66.67%) had highly adaptive practice and 29 (23.01%) had adaptive practice on sexual and reproductive health in the 2\textsuperscript{nd} follow-up test.

A majority 49 (41.88%) of girls had highly adaptive practice and 48 (41.02%) had adaptive practice on sexual and reproductive health in the post-test and also in the 1\textsuperscript{st} follow-up test 68 (58.12%) had highly adaptive practice and one third of them 39 (33.33%) had adaptive practice which further increased to 81 (69.23%) who had highly adaptive practice and 34 (29.06%) had adaptive practice on sexual and reproductive health in the 2\textsuperscript{nd} follow-up test. These findings clearly show that after imparting Behavioural Change Communication to boys and girls there was a significant improvement
in their practice level on sexual and reproductive health in the post-tests. These findings were consistent with the previous studies.

**Effectiveness of Behavioural Change Communication on knowledge of sexual and reproductive health**

A comparison of pre-test and post-test knowledge scores on sexual and reproductive health among boys reveals that the pre-test mean score was 17.23 ± 6.33 and the post-test mean scores was 26.52 ± 4.30 and 28.55 ± 4.19, 30.04 ± 3.96 in the post-test, 1\textsuperscript{st} follow up test and 2\textsuperscript{nd} follow up test respectively. The calculated ‘F’ value of 880.34 among boys was statistically significant at p<0.001. It implies that there was significant improvement in the post-test knowledge score on sexual and reproductive health after imparting behavioural change communication. Hence it was concluded that behaviour change communication was effective to increase the knowledge on sexual and reproductive health among boys.

The comparison of the pre-test and post-test knowledge scores on sexual and reproductive health among girls reveals that the pre-test mean score was 25.09 ± 6.71 and the post-test mean scores was 40.12 ± 4.43, 42.46 ± 4.19, 44.99 ± 3.66 in the post-test, 1\textsuperscript{st} follow up test and 2\textsuperscript{nd} follow up test respectively. The calculated ‘F’ value of 874.21 was statistically significant at p<0.001. It implies that there was significant improvement in the post-test knowledge score on sexual and reproductive health after imparting behavioural change communication. Hence it was concluded that behaviour change
communication was effective to increase the knowledge on sexual and reproductive health among girls.

Hence, the research hypothesis H\textsubscript{1} stated earlier “There will be a statistically significant difference in the scores obtained on the knowledge on sexual and reproductive health prior to and after the behavioural change communication” was accepted. The above findings were consistent with the findings of previous studies.

**Effectiveness of Behavioural Change Communication on attitude of sexual and reproductive health**

A comparison of pre-test and post-test attitude scores on sexual and reproductive health among boys reveals that the pre-test mean score was 3.66 ± 4.12 and the post-test mean scores were 10.50 ± 4.08, 13.11 ± 3.66, 15.17 ± 2.68 in the post-test, 1\textsuperscript{st} follow-up test and 2\textsuperscript{nd} follow up test respectively. The calculated ‘F’ value of 595.92 was statistically significant at p<0.001. It implies that there was significant improvement in the post-test attitude score on sexual and reproductive health after imparting Behavioural Change Communication. Hence it was concluded that behaviour change communication was effective to improve the attitude on sexual and reproductive health among boys.

A comparison of pre-test and post-test attitude scores on sexual and reproductive health among girls reveals that the pre-test mean score was 2.78 ± 7.45 and the post-test mean scores were 10.93 ± 4.74, 13.07 ± 4.33, 14.46 ± 3.64 in the post-test, 1\textsuperscript{st} follow-up test and
2nd follow-up test respectively. The calculated ‘F’ value of 341.72 was statistically significant at p<0.001. It implies that there was significant improvement in the post-test attitude score on sexual and reproductive health after imparting Behavioural Change Communication. Hence it was concluded that behaviour change communication was effective to improve the attitude on sexual and reproductive health among girls.

Hence the research hypothesis H\textsubscript{2} stated earlier “There will be statistically significant difference in the scores obtained on the attitude of sexual and reproductive health prior to and after the behavioural change communication” was accepted. The above finding is consistent with findings of previous studies.

**Effectiveness of Behavioural Change Communication on practice of sexual and reproductive health:**

The comparison of pre-test and post-test practice scores on sexual and reproductive health among boys depicts that the pre-test mean score was 7.57 ± 2.29 and the post-test mean score were 8.67 ± 2.07, 9.09 ± 1.69, 9.63 ± 1.61 in the post-test, 1\textsuperscript{st} follow-up test and 2\textsuperscript{nd} follow up test respectively. The calculated ‘F’ value of 175.73 was statistically significant at p<0.001. It implies that there was significant improvement in the post-test practice score on sexual and reproductive health after imparting Behavioural Change Communication. Hence it was concluded that behaviour change
communication was effective to improve the practices related to sexual and reproductive health among boys.

The comparison of pre-test and post-test practice scores on sexual and reproductive health among girls depicts that the pre-test mean score was $5.76 \pm 2.02$ and the post-test mean score were $7.07 \pm 1.48$, $7.55 \pm 1.35$, $8.00 \pm 1.08$ in the post-test, 1st follow up test and 2nd follow up test respectively. The calculated 'F' value of 150.33 was statistically significant at $p<0.001$. It implies that there was significant improvement in the post-test practice score on sexual and reproductive health after imparting behavioural change communication. Hence it was concluded that behaviour change communication was effective to improve practices related to sexual and reproductive health among girls.

Hence, the research hypothesis $H_3$ stated earlier “There will be a statistically significant difference in the scores obtained on the practice related to sexual and reproductive health prior to and after the behavioural change communication” was accepted. The above finding is consistent with the findings of some previous studies.

The findings of the present study were compared with the findings of earlier researches that were quoted in the review of literature chapter. Malleshappa K et al., (2011) determined the effectiveness of a reproductive health education intervention programme in improving the knowledge of adolescent girls aged between 14-19 years over a period of eight months. The findings
revealed that there was a significant increase in overall knowledge regarding menstrual cycle, ovulation, fertilization and pregnancy by 44.5% (95% CI = 42.5, 46.5; p <0.001); knowledge regarding contraception improved remarkably from 33.7% to 97.4%( p <0.0001); and a significant improvement in the knowledge about transmission and prevention of STDs was noted. Yet another study of Madeni F. et al., (2011) revealed the effectiveness of reproductive health awareness program on the improvement of reproductive health for adolescents in urban Tanzania. The findings of the present study were consistent with the previous studies.

**The Fourth Objective of the Study was to find out the Correlations among the Knowledge, Attitude and Practice Regarding Sexual and Reproductive Health**

A correlation analysis of pre-test knowledge and attitude scores on sexual and reproductive health among boys depicts that the calculated ‘r’ value of 0.338 shows a positive correlation which was statistically significant at the p<0.01 level. It could be inferred that an increase in the knowledge increases a favorable attitude towards sexual and reproductive health among boys. The correlation analysis of pre-test knowledge and attitude scores on sexual and reproductive health among girls depicts that the calculated ‘r’ value of 0.440 shows a positive correlation which was statistically significant at the p<0.01 level. It could be inferred that increase in knowledge increases a favorable attitude towards sexual and reproductive health among girls also. Thorndike an educational psychologist postulated a learning
theory where in behavior that is rewarded tend to occur repeatedly. Those behaviors that are punished tend to decline or disappear. When the study subjects showed significant hike in post-test knowledge score, it could be attributed to Thorndike law of effect. Hence the improved knowledge score improve the attitude score also.

Hence, the research hypothesis H4 stated earlier, “There will be a statistically significant correlation between knowledge and attitude on sexual and reproductive health.” was accepted. None of the previous studies reported these findings.

Correlation analysis of pre-test knowledge and practice scores on sexual and reproductive health among boys indicates that the calculated ‘r’ value of 0.343 shows a positive correlation which was statistically significant at the p<0.01 level. This clearly shows that when the knowledge of boys on sexual and reproductive health increases their adaptive practice also increases and vice versa. Correlation analysis of pre-test knowledge and practice scores on sexual and reproductive health among girls indicates that the calculated ‘r’ value of 0.478 shows positive correlation which was statistically significant at p<0.01 level. This clearly shows that when the knowledge of girls on sexual and reproductive health increases their adaptive practice also increases and vice versa.

Hence, the research hypothesis H5 stated earlier “There will be statistically significant correlation between knowledge and practice on
sexual and reproductive health” was accepted. None of the previous studies reported these findings.

Correlation analysis of pre-test attitude and practice scores on sexual and reproductive health among boys indicates that the calculated ‘r’ value of 0.283 shows positive correlation which was statistically significant at p<0.01 level. This clearly shows that when the favorable attitude of boys on sexual and reproductive health increases their adaptive practice also increases and vice versa.

Correlation analysis of pre-test attitude and practice scores on sexual and reproductive health among girls indicates that the calculated ‘r’ value of 0.385 shows a positive correlation which was statistically significant at the p<0.01 level. This clearly shows that when the favorable attitude of girls on sexual and reproductive health increases their adaptive practice also increases and vice versa.

Hence the research hypothesis $H_6$ that was stated earlier “There will be statistically significant correlation between attitude and practice on sexual and reproductive health” was accepted. None of the previous studies reported these findings.

**Additional Findings**

In addition to the study objectives and hypotheses, the researcher elicited other thought provoking and significant findings related to sexual and reproductive health among study subjects.
More than half of the male 86(68.3%) and only few female 20(17.1%) had experienced sexual fantasy any time.

Most of the of male subjects 104(82.5%) experienced forced sexual activities by strangers, relatives or old persons whereas 97(82.9%) of the female subjects didn’t experienced forced sexual activities by strangers, relatives or old persons.

Majority of the girls 98(83.8%) of the girls ever had that anybody touched private parts without their consent.

Nearly three third of the boys 94(74.6%) and 91(77.8%) of the girls had sexual intercourse before.

More than half 68(54%) of the male subjects used a condom and only 23(19.7%) of the girls reported using a condom by their partners.

Majority of the boys 96(76.2%) and 103(88.0%) of the girls didn’t avail health services for any of the sexual reproductive problems.

More than half of the boys 68(54%) and 75(64.1%) of girls said NO when compelled for any risky behaviour.

This chapter dealt with discussion of the study findings.

Summary, conclusions and recommendations are discussed in the next chapter.