CHAPTER 2

REVIEW OF LITERATURE

Review of literature is a key step in the research process. It refers to an extensive and systematic examination of publications relevant to the research problem. The review of literature relevant to the study is presented in this chapter as two sections.

2.1. Related literature
2.2. Conceptual framework

2.1. RELATED LITERATURE

Related literature to the present study has been presented under the following subheadings:

2.1.1. Adolescent health
2.1.2. Adolescent reproductive health
2.1.3. Studies related to adolescent reproductive health
2.1.4. Adolescent Family Life Education (AFLE)
2.1.5. Studies related to Adolescent Family Life Education and its effects

2.1.1. ADOLESCENT HEALTH

Adolescence is a time of considerable changes virtually in all aspects of functioning leading to changes in physical structure, physiological and endocrine changes, changes in the pattern of thinking, attitude, relationships and moral standards. It is a period of change and growth in the body system including attainment of puberty. Puberty is a period that is characterized by the beginning of the functioning of sexual organs and signifies the physiological changes in the body to reach sexual maturity. The onset of puberty leads to an increase in the growth spurt. During the pubertal growth spurt, four important physical changes
take place which transforms the child’s body into an adult. According to Nair (2002), the first change is in the size of body in terms of height and weight. Secondly, there is a change in the body proportion. Thirdly, the development of primary sexual characteristics. In girls, the marker event is the beginning of menstruation and in boys, genital growth and the first ejaculation. The fourth physical change is the development of secondary sexual characteristics. Breast development, appearance of pubic and axillary hair and widening of hip occurs in girls. In boys, voice deepens, shoulder widens and growth of pubic and axillary hair occurs. It is also important to realize that the onset of puberty varies from boys to girls. In girls, the average age is around 12-13 years but may range from 10-16 years.

Today’s world offers adolescents both remarkable opportunities as well as risks to their health. Because of their sheer number, they constitute 23% of population in India as reported by Roy et al. (2000). In the present situation in the country, the adolescents are able to attend schools and benefit from technological progress comparing to earlier years. At the same time, millions of adolescents face problems related to poverty, inadequate education and work opportunities, exploitation and gender discrimination. Rapid urbanization, telecommunication, travel and migration also bring both new possibilities as well as new health risks to adolescents. These conditions may directly affect their health and undermine the traditional social support that help adolescents to prepare for adulthood. Moreover, society’s expectations of behaviours, roles, access to resources and prospects for development vary between adolescent boys and girls (Chopra, 2007).
Health related perspectives focus upon the absence of mortality and morbidity, and the development of healthy lifestyles and avoiding risk behaviours. There are four dimensions of adolescent health. The first dimension is to master the developmental tasks which include achieving independence, adjusting to sexual maturation, establishing cooperative relationships, and achieving a core set of basic beliefs and values. Coping and well being is the second dimension of adolescent health which deals with the onset of puberty, new cognitive abilities and change of social environment involving the school and the employment transitions.

Absence of physical and mental illness is the third dimension of adolescent health. The common physical problems are related to nutrition and menstruation. The common mental disorders found among adolescents are anxiety, depression, conduct disorders and suicides. Suicide attempts appear to be on the increase among adolescents and many are the victims of violence, including sexual abuse. The fourth dimension is healthy behaviour and the related issues are nutrition and healthy weights, physical activity, healthy sexuality, road safety, suicide and mental health (Raphael, 1996). Henceforth, the health problems of adolescents can be categorized into sexual and reproductive health problems, nutritional problems, mental health problems, substance abuse, accidental and intentional violence (Mehra & Agarwal, 2004).

Determinants of adolescent health

According to Mehra and Agarwal (2004), the determinants of adolescent health are classified into nutritional determinants, biological determinants and social determinants. The nutritional determinants include anemia and chronic
energy deficiency. An adolescent girl requires increased nutritional requirements during adolescent growth spurt. Anemia is significantly associated with a compromised pubertal growth spurt and cognitive development among girls aged 10-19 years (Dayal, Motihar, Kanani & Mishra, 2003). The authors have also stated that prevailing malnutrition, anemia, growth stunting and lack of immunization among adolescents have adverse impact on Maternal Mortality Rate (MMR), Infant Mortality Rate (IMR), morbidity rates and have high intergenerational effects. The National Family Health Survey-2 (NFHS-2) found that 56% of adolescent girls in the age group of 15-19 are anemic in India. Young adolescents have low Body Mass Index (BMI) since the BMI increases markedly during adolescence as pubertal changes occur. A low BMI is an indicator of chronic energy deficiency and is particularly important during reproductive years (Singh & Mishra, 2001).

The biological determinants of adolescent health include the physical maturity and physiological changes in the body. The development of the pelvic birth canal is slower than that of the early teenage spurt of long bones. The birth canal does not reach its mature size until several years after growth in height has ceased by the age of 18 years. Menarche is a hallmark of change occurring in a young female adolescent’s body. This crucial event affects a girl’s perception of her physiological, psychological and social development (Herman-Glidden et al., 1997). The pubertal changes that take place in girls make them more vulnerable to health problems. As many as 40-45% of adolescent girls report menstrual problems in India (IIPS, 2000).
Many of the factors that underlie unhealthy development in adolescents are from the social environment. The social determinants of adolescent health include early marriage, early child bearing, educational status of adolescent girls, poverty, unemployment and the gender inequity. The social environment must foster personal development and encourage adolescents to adopt healthy behaviours. Mehra and Agarwal (2004) reported that in adulthood, 70% of mortality is linked to habits picked up during adolescence like risk taking behaviour, substance abuse, eating habits and conflict resolution. Family relationship affects the transmission of appropriate health messages to adolescents leading to adoption of risk behaviours.

2.1.2. ADOLESCENT REPRODUCTIVE HEALTH (FAMILY LIFE)

Sexual development is a normal part of adolescence. Fortunately, most adolescents go through these changes without significant problems. Nonetheless, all adolescents need support and care during this transition to adulthood, and some need special help. The lives of millions of adolescents worldwide are at risk because they do not have the information, skills, health services and support they need to go through sexual development during adolescence as reported by Raphael (1996).

Sexuality is an integral part of human life. It carries the awesome potential to create a new life. It can foster intimacy and bonding as well as shared pleasure in the relationships. It fulfills a number of personal and social needs, and we value the sexual part of our being pleasures and benefits it affords. Yet, when exercised irresponsibly, it can also have negative aspects on reproductive health. Reproductive health is bound to both physical and mental health. The U.S.
Department of Health and Human Services (2001) stated that reproductive health is not only limited to absence of diseases, it also includes the ability to understand and weigh the risks, responsibilities, outcomes, impact of sexual actions and to adopt healthy behaviours and life styles.

Adolescent reproductive health refers to the physical and emotional well being of adolescents. As a group, however adolescents have sexual and reproductive health needs that differ from those of adults in important ways and which remain poorly understood or underserved in much of the world (WHO, UNFPA & UNICEF, 1997). The main issues in adolescent reproductive health are puberty, adolescent pregnancy, unwanted pregnancy, unsafe abortion, Sexually Transmitted Infections including HIV/AIDS and sexual violence or coercion as reported by Brown, Jejeebhoy, Shah and Yount (2001).

Menstruation is the process of shedding the cyclic building of uterine tissue, blood vessel and the unfertilized ovum when a pregnancy has not occurred. Though menstruation is a normal physiological process, taboos, myths and misconceptions associated with menstruation have restricted the adolescent’s social life and affect their reproductive health in many ways. During the early years of menstruation, a number of adolescent girls experience disturbing symptoms in relation to their menstrual periods. Rani and Jayasree, (2006) have reported that the more common symptoms during menstruation are headache, backache, cramps and severe abdominal pain. Menstrual hygiene plays an important role in preventing the Reproductive Tract Infections (RTIs) among adolescent girls thereby protects their reproductive health.
In most countries of the South Asian region, nearly 60% of all girls are married by the age of 18 years, with one-fourth girls marrying by the age of 15 years (National Demographic Health Surveys, 1996-2001). Indian culture promotes universal marriage and the national average age at marriage for women in India is 16.4 years according to International Institute of Population Sciences (IIPS) (2000). Because of early marriage, the period of exposure to sexual activities also becomes longer as the average age at menarche continues to decline. In developing countries like India, especially in rural areas, consequence of early marriage is closely associated with early initiation of sexual activity. Marriages often take place even before the girls have attained puberty since they hope that the early marriage will benefit them both financially and socially. In India, every third adolescent girl in the age group of 15-19 years is married. Around 57% of girls in India are married before the age of 18 years. Every second married adolescent girl has given birth to a child. One fourth of the young girls in the age group of 20-24 years were married before the age of 15 and one tenth were married even before they were 13. About more than 15% of the girls in the State of Rajasthan are married even before they are 10 year old (NFHS- 2).

Table 1
Marital Status of Adolescent girls in Tamilnadu

<table>
<thead>
<tr>
<th>Age (in years)</th>
<th>Unmarried</th>
<th>Married</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-12</td>
<td>100.0</td>
<td>-</td>
</tr>
<tr>
<td>13-14</td>
<td>99.3</td>
<td>0.7</td>
</tr>
<tr>
<td>15-19</td>
<td>80.5</td>
<td>19.5</td>
</tr>
<tr>
<td><strong>Rural</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-12</td>
<td>99.5</td>
<td>0.5</td>
</tr>
<tr>
<td>13-14</td>
<td>99.2</td>
<td>0.8</td>
</tr>
<tr>
<td>15-19</td>
<td>72.1</td>
<td>27.9</td>
</tr>
</tbody>
</table>

Source: Family Welfare Department, Tamilnadu, 2001
The above table shows that in rural areas, 27.2% of adolescent girls in the age group of 15-19 are married in spite of the Indian Child Marriage Restraint Act (1978) which inhibits marriages of girls until the age of 18. The use of law as means of regulating early marriage is not sufficient. There is a need to provide the adolescents with education and economic activities to delay marriage.

Early marriages usually have adverse effects on the health and development of adolescent girls, since a young girl has little ability to negotiate sexual activity. The maternal mortality in the age group of 15-19 is one of the highest in India. Apart from increasing risk of deaths, there are increased risks of premature labour, and complications during delivery, resulting in low birth weight babies and a higher chance that the new born will not survive. The health problems linked to early marriages not only affect the pregnant mother and the fetus but also continue after birth. A larger proportion of children (over 3,00,000) born to adolescent mothers (15-19 years) die in infancy, and further found, that their survival beyond infancy have a greater likelihood of being low birth weight than others (UNICEF,2001). Another severe consequence of early marriage is that the mental health of young girls is seriously affected leading to depression.

**Adolescent pregnancy**

The issue of adolescent pregnancy is increasingly being perceived as a critical challenge facing modern society. A major concern about adolescent pregnancy is its impact on the overall health and well being of the mother and child. Adolescent girls face considerable health risks during pregnancy and child birth accounting for 15% of the global burden of disease for maternal conditions and 13% of all maternal deaths. Pregnancy related deaths are the leading cause
of mortality for 15-19 year old girls (married and unmarried) worldwide. Among those giving birth, (14 million in the age group of 15-19) maternal mortality is twice as high as for women in their twenties. The risk of death during the first year of life is 1-5 times higher for infants born to mothers under 20 years of age than those born to mothers aged 20-29 years (WHO, 2003).

In India, more than 20% of the over 15,00,000 thousand married girls under the age of 15 years have become mothers. This means that close to 3,00,000 girls under the age of 15 are not only married but also have already borne children at least once. In the 15-19 years age bracket, there are 1,77,000 thousand married girls with 4 children, over 6,00,000 thousand 15-19 year olds with two children and more than 1,34,000 thousand with three children each (MAMTA, 2006).

IIPS (2000) found that in India, 10% of all adolescent pregnancies end in miscarriages or stillbirths compared to 7% among older women. According to National Family Health Survey - 2, unplanned pregnancies are common in adolescents. Pregnancy in an unmarried girl is taken as a sign of improper behaviour. Many of the pregnancies among adolescents end in abortions. Therefore, unmarried adolescents constitute a significantly large proportion of abortion seekers. A large number of adolescent abortion seekers suffer due to complications like haemorrhage, septicemia, cervical and vaginal lacerations, pelvic abscess and secondary sterility. In most Asian countries, abortion is still illegal though the laws are relaxed. Adolescents are more likely than older women to have illegal abortions. A noteworthy proportion of maternal mortality is due to unsafe abortions. The unmarried adolescents delay seeking abortion,
resort less skilled care providers, delay in seeking care for complications and therefore aggravating morbidity and mortality (Roy et al., 2000).

About 19 million of the 45-46 million abortions done worldwide each year are unsafe, around 40% of those 19 million unsafe abortions occur in young people in the age of 15-24 years. Induced abortions are yet another important reason for poor adolescent reproductive health. It is also reported that 80% of adolescent girls seeking abortion did not know that sexual intercourse could lead to pregnancy and STIs. And 90% did not know about contraception (Chhbra, 1997).

**Adolescent reproductive health risks/STIs**

The age of experimentation, adventure and exploration puts the adolescents into the risk of ailments such as Sexually Transmitted Infections (STIs) including HIV/AIDS. The consequence of unprotected sexual intercourse apart from unplanned pregnancy is the risk of acquiring an STI. In India, STIs rank third among the major communicable diseases. STIs often go undetected or untreated among adolescent girls who are embarrassed or stigmatized by the presence of an STI and are reluctant to seek help. Yet, STI agents such as Chlamydia and Human papilloma virus can have direct cervical cancer. STIs also facilitate HIV. As many as 25% of patients attending Government STD clinics in India are younger than 18 years as reported by Ramasubban (2000).

About half of the new HIV infections now affect 15-24 years old, representing more than 6,000 new infections per day in this age group. It is estimated that 50% of all new HIV infections in the world are among young people and that 30% of the 40 million people living with HIV / AIDS are in the
15-24 years age group (WHO, 2004). In India, it has been observed that an increasing number of youth are being infected with AIDS. Among them, 35% of cases of AIDS reported are below 25 years of age and 50% of new infections are in the age group of 15-24 years. The size of youth population and their lack of knowledge about HIV/AIDS is an important issue in reducing HIV infections. It has been observed that only 20% of youth know two preventive measures of HIV infection and 63% have not heard about AIDS as reported by Sanjana (2006).

2.1.3. STUDIES RELATED TO ADOLESCENT REPRODUCTIVE HEALTH (FAMILY LIFE)

The adolescent reproductive health problems are signified by various studies. Quantitative studies which were done in different countries as well as in India are available in the literature to address the issues related to the knowledge, attitude and practice of adolescent girls about family life.

Knowledge about family life

Molina, Araa, Ibazeta and Longos (2007) assessed the knowledge of secondary school students about reproduction, sexuality and its relationship with initiation of sexual activity in Chile. It was reported by the authors that 45.9% of the private school students and 27.9% of public school students felt that the information that they received about sexuality from the school was inadequate and the knowledge of these students about human reproduction and sexuality was inadequate. The study also revealed that the adolescents who had a highest overall level of knowledge on human reproduction and sexuality had lower levels of sexual activity. Similar findings were reported in another study undertaken in Chile by Millan, Valenzuela and Vargas (1995) among 948 public school students.
of Santiago’s poorer communities. This study concluded that 67% did not know the fertile and infertile times of a girl’s menstrual cycle and lack of information was the main reason for the low use of contraceptives.

A study was done by Buga, Amoka and Ncayiyana (2006) among 1025 female adolescents from 21 secondary schools in South Africa. The knowledge about reproduction was found to be low, with only 19% of them able to identify the fertile phase of the menstrual cycle. The study also reported that the adolescent girls had poor knowledge about reproductive biology and contraception. Similar findings were reported by few other African studies too. Irinoye, Ogungbemi and Ojo (2003) examined the knowledge of 200 school going adolescent girls in Lie-Ife, Nigeria and found that only 5% of respondents could correctly define menstruation. A study (Abioye-Kuteye, 2000) on menstrual knowledge among secondary school girls in Nigeria also reported that 40% of them had inadequate knowledge about menstruation. These study findings are consistent with another study by Liu (1997) who found that 63.8% of adolescent high school girls from Weifang city did not have previous knowledge about puberty.

The knowledge of adolescent girls about menstruation in South East Asian region of the world was also examined by various studies. A study by Tang, Young and Lee (2003) among Chinese adolescent girls on the psychosocial correlates of emotional responses showed that the girls were not prepared adequately for menstruation. Two studies done at Nepal (Sharma., & Gupta, 2003; IIPS, 2000) reported lack of information among adolescent girls regarding pubertal changes, menstruation, menstrual hygiene and pregnancy.
A survey conducted among 7th and 8th grade black US inner city adolescents indicated that these adolescents were aware of the contraceptive methods but did not have the practical information about the method of use and the effectiveness of contraceptive methods. Many students were uninformed about the circumstances under which pregnancy can occur. The study recommended for more systematic research assessing the effectiveness of Family life education in young teens (Herz, Goldberg, & Reis, 2006). A cross sectional study done by Salako, Iyaniwura, Jeminusi and Sofowora (2002) among 1140 school adolescents in Ikenne, Nigeria also revealed poor knowledge on contraception and its uses. Similar to the previous study, this study too highlighted the need for family life education program for these adolescents.

Besides lack of information, misinformation and misunderstanding about conception and contraceptives, STD risks abound among adolescents are major findings of several studies. A study done in Jamaica by Eggleston, Jackson and Rountree (1996) among 500 school going adolescents points out that the adolescents had inadequate information about reproductive health issues. A small percentage of girls (27%) alone knew that it is possible to get pregnant in the first intercourse itself and only 4% of them knew the fertile period of conception.

One another Indian study done in Haryana by Trikha (2001) on abortion scenario of adolescents in the age group of 14-19 years revealed that 90% of adolescent girls undergoing abortions were unmarried and 11% of them were undergoing abortions for the second or third time. 42% sought abortion in the
second trimester of pregnancy. The abortions carried out at unapproved centers by unqualified personnel were 56%.

The source of information about reproductive and sexual health for adolescents was explored in several studies. The study among Lebanese adolescents by El-Kak, Soweid, Taljel, Kanj and Shedia-Rizkallah (2001) reported that friends were cited as the first source of information (60%) about sexual health, media (52%) as the second source of information and parents (32%) as the third source. The majority of the students (91%) supported the sex education program in the school. One another regional study done by Aten, Siegel, and Roghmann (1996) in the United States too showed that the adolescents obtained health related knowledge from the school health nurse (42%), from media (34%), from parents (28%) and from friends (23%). Khanna, Goyal, and Bhawsar (2005) reported that mothers, sisters and friends were found to be the major source of information about menarche and much of this information imparted were in the form of restrictions on the girl’s movements and behaviour in the State of Rajasthan in India.

Indian studies also reveal that adolescents have inadequate knowledge regarding reproductive health (family life). Mukerjee et al. (2001) in their study among school going teenagers of rural Bengal reported that though the teenagers had a satisfactory knowledge about legal age at marriage, they had lack of information about various issues of reproductive health. Dalvar (2000) studied the knowledge of adolescent girls on female pubertal changes in Delhi and reported that only 60% of the adolescent girls knew menstruation as a sign of puberty, 40% knew about breast development and only 13% knew that growth of
pubic hair is a sign of puberty. Kumar (2000) conducted a cross sectional study in rural areas of Himachal Pradesh to assess the knowledge of adolescent girls about reproductive health. In this study, 643 unmarried adolescent girls aged 15-19 were interviewed using a semi structured interview guide. The overall knowledge of adolescent girls on reproductive health was found to be very low which was a similar finding in another study done in Haryana among rural adolescent girls (Singh, Devi & Gupta, 1999).

Knowledge regarding menstruation and menstrual hygienic practices was studied by some researchers (Mandal, 1994; George, 2003; Khanna et al., 2005; Kushwaj & Anaj, 2007). The researchers reported that a significantly larger proportion of the girls were not aware of menstruation when they first experienced it and the studies also highlighted the need to educate the adolescent girls about menstruation and menstrual hygiene. A study conducted by Rani and Jayasree (2006) among 400 adolescent girls in Chittoor District of Andhra Pradesh, on menstruation and menstrual hygiene, found that the adolescent girls had poor knowledge about menstruation. A community based cross sectional study done by Prasad et al. (1997) in a rural area of Tamilnadu among 491 married adolescents of 16-22 years indicated that the knowledge on menstruation and menstrual hygiene was found to be poor. However similar study done in Belgaum, Karnataka by Kamble (2001) revealed that 61.66% of girls had an average knowledge regarding menstruation and menstrual hygiene.

Studies on reproductive health problems among adolescent girls are also studied and documented in the literature. A survey done on the reproductive health problems of 352 adolescent girls from rural and tribal areas of
Thiruvanathapuram District of Kerala by Sajitha (2006) revealed that majority of the girls had menstrual problems followed by reproductive tract infections. Most of them were aware of the menstrual irregularities but very few have undergone treatment for menstrual irregularity.

Gupta, Mathur, Singh and Saxena (2004) in their study on reproductive health awareness of 8453 school going unmarried rural adolescents, only 39.5% were aware of AIDS, 18% were aware of STDs and only 19.8% of adolescents were aware of at least one method of contraception. Awareness of reproductive health matters was more among boys compared to girls and more in late teens (15-19) than in early teens (10-14). Among the 10-14 year teens, 40% had very little knowledge about sex organs, 50% were aware of condoms and were confused with the modes of transmission of HIV. The study showed tremendous lacunae in awareness of all aspects of reproductive health matters. It concluded suggesting the need for Information, Education and Communication (IEC) strategies to focus on raising the awareness of adolescents on reproductive health.

Knowledge about AIDS was studied by three researchers (IIPS, 2000; Trikha, 2001; Chatterjee, 2001). These studies reported that almost half of the study subjects had inadequate knowledge about AIDS. Similar findings were noted in other studies too. Abraham (2001) conducted a study on understanding youth sexuality among the college students of Mumbai city. The study found that 26.1% of boys reported sexual intercourse and 3% of girls reported the same. The general level of knowledge regarding the human reproductive system, contraception and STDs was very low. Lal, Vasan, Sarma and Thangappan
(2000) examined the knowledge of adolescent girls of 18-22 years of age in Thiruvananthapuram District, Kerala, India. Of the 461 adolescent girls, 45% said that AIDS is not curable, 34% were aware of the signs and symptoms of STIs and 47% said that AIDS is a sexually transmitted disease. The study identified substantial lacunae in the knowledge of adolescent girls about AIDS and suggested to target the rural adolescent girls in the National AIDS education and in the awareness camps. Studies done in Pondicherry and Tamilnadu (Joseph et al., 1997; Narayanan, Srinivas, Pelto et al., 2001) among adolescent girls found that majority of them had inadequate knowledge about human reproduction, menstruation, contraception and AIDS.

The above studies documented in the literature reveal that the knowledge levels on topics such as reproductive system including puberty, menstruation, contraction and AIDS were low. Adolescents need education and appropriate services related to sexuality.

**Attitude towards family life**

Frank and Williams (1999) conducted a study on the attitude about menstruation among pre and post menarcheal girls in West Florida. The findings reported that the menstrual attitude differs with ages of girls. The study recommended to provide a comprehensive menstrual education to adolescent girls as they mature. A study by Irinoye et al. (2003) on the attitude of 200 school going adolescent girls towards menstruation in Ile-Ife, Nigeria, revealed that 21.43% of the respondents had potentially health promoting attitude and 35.71% had potentially not health promoting attitude and 42.86% potentially harmless attitude.
El-Kak et al. (2001) had undertaken a study to assess the attitude of Lebanese high school students towards sexual and reproductive health. The findings showed that 91% of students had a positive attitude towards sex education program. A study by Sharma and Gupta (2003) in Nepal revealed that 48% of adolescents commented that sexuality before marriage is not good and 20% of them said that premarital sex can be practiced. The Uganda study too reported that the adolescent girls had a positive attitude towards condoms (Barnett, 2007).

Similar study findings were reported by many Indian studies. The multi-centric study by Gupta et al. (2004) revealed that the attitude of adolescent girls towards marriage at the legal age was favourable. Chatterjee (2001) conducted a study in Calcutta to assess the attitude of senior school students about AIDS and reported that 45.8% of adolescent girls had a positive attitude towards nursing AIDS patients. Seethamma (2004) in Karnataka found that the mean attitude score of adolescent girls about menstrual hygiene was 79%. However, the Kerala study by Lal et al. (2000) showed that the overall attitude of students towards AIDS was unfavourable. This study also identified that the students from urban areas as well as from Christian religion demonstrated more favourable attitude towards AIDS.

Gowri (2006) investigated the attitude of adolescent girls in Chennai towards sex education. It was surprising to note that 41% of them had unfavourable attitude and only 47% of them had favourable attitude towards sex education. While assessing the attitude towards the selected aspects of family life, it was found that 78% of the adolescent girls had a positive attitude towards
contraceptive methods, 51% of the girls said that premarital sexual activity is modern and is accepted and 53% of them said that premarital sexual activity will affect their married life. Thakhor (1998) also found that 97% of school students expressed the need for sex education. All the above findings reported by these studies reveal that the attitude among adolescents is more favourable towards family life.

**Practice related to family life**

A study done by Buga, et al. (2006) on the behaviours related to sexuality among school girls in Transkei, South Africa revealed that 74.6% of adolescent girls were already sexually active and 18.7% had initiated sex before menarche. Only 23.5% of these teens had ever used contraception. The reasons provided by the inexperienced girls for delaying sexual activity included religious values (25.4%), fear of pregnancy (23.8%), wish to wait for marriage (20.0%), fear of AIDS (15.6%) not emotionally ready (8.6%), and fear of Sexually Transmitted Infections (6.4%).

The Chile study on Santiago’s poorer communities found that 57% of boys and 59% of girls said that condoms could be reused. In South America, only 43% of married adolescents aged 15-19 are using contraception comparing to 29% of unmarried sexually active adolescents. In Western Africa, only 5% of married teens use contraception compared to 34% of sexually active unmarried teens as reported by Family Health International (as cited in Barnett, 2007).

In South East Asia, 36% of married youth use contraception compared to 28% of unmarried adolescents (Barnett, 2007). Zulkifli and Low (2000) investigated on sexual practices in Malaysia among 468 unmarried adolescents.
It was shown that the proportion of unmarried adolescents who had sexual intercourse was about 13%. More of boys had the sexual experience (18.8%) than the girls (7.11%) Among those who had sexual experience, 72% did not use contraceptives. Jejeebhoy et al. (1999) studied on sexual and reproductive health of adolescents in rural China and reported that significant proportion of unmarried adolescents experienced unprotected sex, unwanted pregnancy and STDs.

A community based study by Prasad et al. (2005) on RTI prevalence among 451 married women aged 16-22 in rural Tamilnadu, India revealed that 49% of the study subjects suffered from any one of the RTIs. In fact, the authors reported that two third of these young women with symptoms did not seek care, and among those who did, over three in four sought treatment from unqualified sources such as home treatment or unqualified private practitioners.

Menstrual hygienic practices among adolescent girls were studied by several researchers. The Nigerian study done by Irinoye et al. (2003) among 200 school going adolescent girls in Lie-Ife to determine the menstrual hygienic practices revealed that they used sanitary pads, cloth, toilet rolls, cotton wool and tampon to manage menstruation. During menstruation, 39.3% of them were practicing healthy practices, 21.43% as potentially harmful practices and 39.3% uncertain practices. A similar study (Abioye-Kuteyi, 2000) on the menstrual practices of secondary school girls in Nigeria also revealed that 66.3% of the adolescent girls used unsanitary materials as menstrual absorbent and the findings emphasized that there was an acute need for education and psychological preparation of girls on menstruation. Similar finding was also seen in another study by El-Gilany, Badawi and El-Fedawy (2005) in Mansoura, Egypt.
The Indian study done by Khanna et al. (2005) in Rajasthan on menstrual practices revealed that more than three fourth of the adolescent girls used old cloth during menstruation. There was a relationship between the menstrual hygienic practices and the prevalence of reproductive tract infections. A study was conducted by Kamble (2001) to assess the practices related to menstrual hygiene among girls studying in selected high schools in Belgaum city, Karnataka, India. This study found that 87.66% of adolescent girls followed correct practices. Sajitha’s study (2006) among 352 adolescent girls from rural and tribal areas of Thiruvanathapuram District of Kerala found that though majority of them were aware of the menstrual irregularities, very few were undergoing treatment for menstrual irregularity.

A study done by Rani and Jayasree (2006) among 400 adolescent girls in Chittoor District of Andhra Pradesh, on menstruation and menstrual hygiene revealed that majority of the adolescent girls had a poor menstrual hygiene index followed by fair level of practice scores. Socio economic and cultural practices showed a direct relationship with menstrual hygienic practices.

James (1997) stated that educationally prepared girls tend to use sanitary napkins, change napkins more frequently and approach the process of menstruation more practically. All the above cited studies reveal that the menstrual hygienic practices among majority of adolescent girls are inadequate or poor.

2.1.4. ADOLESCENT FAMILY LIFE EDUCATION (AFLE)

Education is considered as one of the most potent instruments of peaceful social change and also significant means to develop self actualization and self
realization. Adolescent Family Life Education (AFLE) is one of the educational interventions that are aimed at enabling the existing health system to respond to the emerging needs and requirements of adolescents. AFLE influences the attitude and behaviour of adolescents in relation to sexual and reproductive health. These programs also help adolescents to enhance communication, and negotiation skills, clarify their values and change risk behaviours. Sweden is the only country where sex education is compulsorily provided to the adolescents in the schools since 1956. AFLE was launched in other countries of the world, when comprehensive efforts were initiated to start the population education during early 1970s as a complementary strategy to help nations attain their demographic goals. Since sex related elements have been considered socio-culturally sensitive, it was preferred to name it as Family Life Education. It would be necessary to educate adolescents in sexual development, sexuality, reproduction including conception, contraception and STIs, so that the educational intervention will have an impact on their attitude and behaviour and ultimately will result in health promotion in adolescents (Pandey, 2004).

**Definition and objectives of AFLE**

Family life education has been conceptualized differently in various context, and hence it has been defined in different ways. The U.S Department of Health and Human Services (2001) defines family life education “as a field of study that examines knowledge, attitude, behaviour and values that promote healthful sexuality with those relationships”. The definition adopted by the International Planned Parenthood Federation (2002) says that “Family Life Education is an educational process designed to assist adolescents in their physical, social, emotional and moral development as they prepare for adulthood,
marriage, parenthood, ageing as well as their social relationships in the socio-cultural context of the family and society”. According to yet another definition, family life education has been conceived as “an education for human development, which seeks to ensure that each individual approaching adulthood is equipped with the skills and personal reserves to cope with challenges of everyday life in society, within acceptable societal structures and to adapt to change with experience and equilibrium” (Pandey, 2004). The World Health Organization defines AFLE as “an educational program which addresses the biological, socio-cultural, psychological and moral dimensions of sexuality from the cognitive, affective and psychomotor domains including skills to communicate and make responsible decisions” (WHO, 2004).

Family life education aims at enabling the adolescents to understand the importance of the institution of family, to appreciate physical, physiological, psychological and social changes and developments during the process of growth, conception, and consequences of adolescent pregnancy. It further aims to help adolescents to be aware of the HIV/AIDS pandemic, understand the significance of marriage, develop a positive attitude and achieve responsible parenthood and behaviours towards family life. AFLE seeks both to reduce the risks of potentially negative outcomes from sexual behaviour like unwanted or unplanned pregnancies, Sexually Transmitted Infections including HIV/AIDS and to enhance the quality of relationship. It is also about developing adolescent’s ability to make decisions over their entire life time (Pandey, 2004).

Need for AFLE

The need to impart education in this sensitive area is felt primarily because the current generation of adolescents are more than a billion strong, and will be
the largest generation in history to make the transition from children to adults. In India, individuals have been receiving information about these matters directly through different sources available in their respective socio-cultural settings. A number of studies lend support to the fact that adolescents desire and seek authentic knowledge on sexual development which they experience as stated by Pandey (2004). But sex being a taboo, no authentic source has been available to them through which they can get such knowledge. This situation creates anxieties, confusion and generates myths and misconceptions among adolescents about various aspects of their growing up. These myths and misconceptions are carried over to their adulthood, adversely affecting their attitude and behaviour through out their lives.

Studies conducted in different settings have found the growing incidence of premarital sexual relationship among adolescents. It is therefore necessary to equip adolescents well with adequate knowledge about family life so that they manage their sexual development responsibly and develop a healthy attitude towards sex (Nair, 2004). The media reports highlight almost regularly the growing incidence of sex crimes in our society. The particular matter of great concern is the problem of sexual abuse and exploitation of young girls and even minors. These situations demand urgent educational intervention, so that the adolescent girls are made aware of the implications of sexual development and to safe guard themselves against such inhuman incidents. There is a need to reinforce social and cultural values that militate against irresponsible sexual behaviour because of urbanization, migration to slums in the cities and the changing life styles. The AIDS pandemic has added urgency to introduce AFLE. As reported by Pandey (2004), studies have come out with the findings that
adolescents are the greatest victims of HIV infection. Since there is no vaccine or
cure available for HIV/AIDS, preventive education is the only means to promote
behavioural changes which can prevent HIV infection.

Even when adolescent education is not imparted, children and
adolescents are exposed to superficial sex related information, and that too
mostly in a crude manner, through other sources like cinema, films, magazines,
videos, commercial advertisements and certain sensuous programs telecasted in
the television. Even the newspapers are devoting increasing space to sex related
stories. Therefore, it is better to impart adolescent Family Life Education, and the
adolescents will definitely appreciate such exposures in proper perspective.

When the teachers and the community health nurses are sensitive to the
need of adolescents and provide guidance to them to cope with their problems,
the relationship has become better and the environment has improved. There has
been a significant change in the perception of adult members, particularly parents
and teachers, towards the introduction of adolescent family life education. A
number of studies conducted in different states have found that parents and
teachers overwhelmingly support the introduction of adolescent education. The
knowledge gained and skills developed will contribute to the individual’s ability to
cope both with social change and with relationships in society as a citizen,
spouse or parent.

2.1.5. STUDIES RELATED TO ADOLESCENT FAMILY LIFE EDUCATION AND
ITS EFFECTS

The most effective family life education programs are those that include
more information on reproductive health. For teenagers who are already sexually
active, family life education can encourage correct and consistent use of contraceptives or STD protection. Fears that family life education programs encourage or increase sexual activity appear to be unfounded, research suggests. However evaluations that have been done among adolescents in both developing and developed countries show that formal family life education program increases the knowledge on reproductive health and can improve the use of methods to protect against pregnancy and STIs including HIV/AIDS (Pandey, 2004).

SIECUS (1999) reported that a vast majority of Americans support sexuality education for teenagers, of whom, 93% believed that it should be taught in high schools and 84% believed it should be taught in middle or junior high schools. The teenagers also expressed the need for medically accurate and responsible sex education. Nearly half of the high school students nationwide report that they need basic information on birth control, HIV/AIDS, and other Sexually Transmitted Infections. The adolescents also wanted to have more information on where to get contraception.

The World Health Organization (WHO) recently published a review of 1050 scientific articles on sex education programs. This review revealed that there was no support for the contention that sex education encourages sexual experimentation or increased sexual activity. If any effect is observed, almost without exception, it is in the direction of postponed initiation of sexual intercourse and/or effective use of contraception. It further suggested that failure to provide appropriate and timely information misses the opportunity of reducing the
unwanted outcomes of unmarried pregnancy and transmission of STIs and is therefore in the disservice of the youth (Grunseit & Kippax, 2006).

Knowledge

Banda (2002) conducted a study in Malawi among 300 adolescent girls on the effect of Family Life Education. The results revealed that statistically significant increase in the knowledge about anatomy and physiology of the female reproductive system and menstruation was seen among the girls who attended the family life education. Ancheta, Hynes and Shrier (2005) evaluated the reproductive health education and sexual risk among high risk female adolescents in Boston, USA. This study indicated that the parents discussed about menstruation more frequently than the other topics of family life. The median age of formal instruction was 12 years. 26% of them received their formal family life education just before or after marriage. Ancheta also found that the early reproductive health education was associated with increase in their knowledge level.

Zabin (2006) conducted a study to evaluate the school based approach to teen pregnancy prevention among 1700 adolescents in two of the Baltimore innercity schools in U.S.A. There was a significant increase in the level of knowledge on sexuality and contraception among the students who had attended the sessions on sexuality and contraception than the control group students. Similar study by Eggleston et al. (1997) examined the impact of school based sexuality education program in Jamaica and their study finding also supports the above finding. A quasi – experimental study was done by Herz et al. (2006) to assess the impact of family life education program on the minority elementary
school students in Chile inner city. In comparison to the control group, the program participants displayed improved knowledge about conception, reproductive physiology, birth control methods, and ill effects of adolescent pregnancy.

Yet another quasi-experimental study done among Nigerian and Ghananian unmarried adolescent girls (Brieger, Delano, Lane, Oladepo & Odyediran, 2001) to evaluate an adolescent reproductive health peer education program reported that there were significant differences found overtime and between intervention and control groups concerning reproductive health knowledge and use of contraceptives in the previous 3 months. The outcome of the reproductive health education program provided evidence that the peer education was more effective at improving knowledge among adolescents in school settings. This study also found that friends were the prime source and health care providers as the second source of information about reproductive health.

Fawole, Asuru, Oduntan, and Brieger (1999) evaluated the effectiveness of a school based AIDS education program for secondary school students in the local government area of Ibadan, Nigeria. Evaluation of the intervention was carried out after 6 months. Baseline data showed that there was no significant difference in the knowledge and attitude on HIV/AIDS and their sexual behaviour. End line comparisons however, revealed that the knowledge about HIV transmission and prevention was significantly higher (p<0.05) in the intervention group. Furthermore, 92.8% of the intervention group students as compared to only 56.7% of the controls felt AIDS constituted a problem in Nigeria. In
conclusion, the education program was successful in improving the student’s knowledge regarding HIV/AIDS. This finding is consistent with the findings of several studies (Kane et al., 1993; Rusakaniko et al., 1997) done in Africa which also showed an increase in the knowledge level of reproductive health, contraception and AIDS.

Donati, Grandolfo, Spineeli and Medda (1996) conducted a study on knowledge and attitude of reproductive health among adolescents of 14-21 years in the secondary schools of Rome. Five sex information programs were conducted. During the pretest, 20-50% of adolescents answered all questions about reproductive physiology and contraception. After the sex education program 70-100% of the adolescents answered the questions related to reproductive physiology and contraception correctly. The fertile period of the menstrual cycle was correctly stated by 48% of adolescents during pretest and 88% during posttest. Further, the authors reported that 87% of them knew that condom provides protection against STDs.

Butts and Hartman (2002) assessed the effectiveness of behavioural intervention to reduce HIV risk in adolescents. The result revealed that there was a significant difference between the pretest and posttest knowledge mean scores. Further, the study also revealed that there is a need for community based program in which teenage participation is vital to have positive reaction of adolescents. Nurses can play a vital role in implementing a comprehensive, theory based program in community settings. Dhital, Badhu, Paudel and Uprety (2001) conducted an experimental study with pretest – posttest control group design to evaluate the effectiveness of a structured teaching program in
improving the knowledge of 200 school going students on reproductive health in
four selected schools in Dharan town of Nepal. The mean pretest and posttest
score were compared between two groups and the difference was statistically
significant (p<0.001). The knowledge about reproductive health was better in the
experimental group suggesting the use of structured teaching program was
effective in improving the knowledge of adolescents on reproductive health.
Chen’s (1997) study among adolescent girls in China investigated the
effectiveness of sex education program. The posttest was conducted after one
month. It was found that the mean knowledge score on sexual health increased
from 4.86 to 17.20. It was concluded that sex education is essential and effective.

Literature review indicates that most of the Indian studies are done in
urban areas and there are only few studies available which are done in rural
areas. Awasthi, Pande and Nichter (2004) conducted a study in Lucknow, India
on developing an interactive STD prevention program for youth. This community
based intervention in STD prevention practices among the participants showed
that the knowledge level had increased after the intervention program. Parwej,
Kumar, Walia and Agarwal (2005) measured the effectiveness of a reproductive
health education package in improving the knowledge of adolescent girls aged
15-19 years in Chandigarh, India. Change in the score in the intervention and
control groups was tested by ANOVA taking age and socioeconomic status as
covariates. Reproductive knowledge score improved significantly after
intervention in conventional education (27.28) and peer education group (20.77)
in comparison to the controls (3.64) Posttest scores were not significantly
different between the conventional and peer educational groups (40.52 and 43.65
respectively). Though the time taken in delivering the peer education intervention
was almost one third of the time taken to implement conventional education, peer education and conventional education strategies were effective in improving the reproductive health knowledge of adolescent girls. Further, it was found that peer strategy was less time consuming.

Sharma, Mohapatra and Gupta (2002) conducted a study on the Sociological Intervention Package (SIP) for developing awareness on high risk sexual behaviours. The study finding showed that the mean increase in the awareness of unmarried adolescent girls was 17.82%. The study concluded that the intervention package has significantly enhanced the awareness status regarding safe sexual behaviours. Itti (2003) conducted a study to evaluate the effectiveness of a structured teaching program on selected aspects of reproductive health among the rural adolescent girls in Karnataka, India. There was a significant increase in the posttest knowledge score (34.35) on reproductive health compared to the pretest knowledge score (21.81) (p < 0.0001). Family Life Education Program for adolescent high school girls in Kerala, India had revealed that there was an increase in the knowledge about adolescent health issues, family planning methods and STIs including AIDS after a gap of six months (Nair, 2004).

Dhanalakshmi’s study (2007) in Vellore, Tamilnадu revealed that the adolescents had inadequate knowledge regarding menstruation (83.8%), pregnancy (77.4%) and sexual behaviour (80.6%). The structured teaching program was found to be effective. There was a significant increase in the mean score difference of pretest and posttest knowledge on reproductive health between experimental and control group (p < 0.001). Revathy’s study (1996)
done in a rural area of Tamilnadu reported that the overall mean knowledge score increased after the structured teaching program on reproductive health from 12.07 to 48.77. There was a highly significant difference found in the mean score difference between experimental and control group (p<0.001). This finding is consistent with the study finding of Handa (1995) in which evaluation of the sex education program showed that the knowledge scores in the posttest increased.

**Attitude**

Herz et al. (2006) conducted a quasi experimental study to assess the impact of family life education program on the minority elementary school students in Chile inner city. In comparison to the control group, the program participants displayed a positive attitude towards family life. A school based sexuality education program was conducted in Jamaica found that the sexuality education had a positive influence on attitude of adolescents towards sexuality and pregnancy (Eggleston et al., 1997).

An evaluation of an adolescent reproductive health peer education program in West Africa was done among Nigerian and Ghananian unmarried adolescent girls between 15 and 19 years by Brieger et al. (2001) reported that the reproductive education program promoted a better attitude towards reproductive health. In Nigeria, another evaluative study was done to assess the effectiveness of a school based AIDS education program for secondary school students by Fawole et al. (1999). It compared the attitude of 233 senior students who received comprehensive health education intervention with 217 controls and the study revealed that the education program was successful in improving the student’s attitude towards HIV/AIDS.
An experimental study with pretest – posttest control group design was conducted in Nepal among 200 school going adolescents to evaluate the effectiveness of a structured teaching program by Dhital et al. (2001). The study reported that the posttest scores on the attitude towards reproductive health was better in the experimental group than in the control group (p<0.001). The study concluded that the use of structured teaching program was effective in improving the attitude of adolescents towards reproductive health.

A study conducted among Chinese adolescent girls investigated the effectiveness of sex education program. The posttest was conducted after one month. It was found that the mean attitude score on sexual health increased from 31.8 to 42.3 and the sex education program was found to be effective (Chen, 1997). Another Indian study done by Siva and Jayakaran (2000) on alternative approach to adolescent reproductive health education in rural schools of Tamilnadu, showed that 35% of the girls said premarital sex is one of the dangerous behaviour in adolescents and 92.5% of the girls had a favourable attitude towards reproductive health.

Practice

The Malawi study among 300 adolescent girls on the effect of Family Life Education by Banda (2002) revealed a statistically significant difference in the practice related to sanitary towel care after the education program (p<0.001). The impact of school based sexuality education program in Jamaica among 945 students aged 11-14 years revealed that the adolescents in the intervention group were more than twice as likely to use contraception (Eggleston et al., 1997). Kirby et al. (1994) identified 33 studies done in North America on school based adolescent sex education and AIDS education programs and measured the
impact of these programs. They found that these programs did delay the initiation of sexual intercourse, reduced the number of sexual partners and increased in the use of condoms and other contraceptives. These effective programs have the potential to reduce exposure to unintended pregnancy and Sexually Transmitted Infections including HIV/AIDS.

The West African study among Nigerian and Ghananian unmarried adolescent girls between 15 and 19 years (Brieger et al. 2001) on implementation and evaluation of an adolescent reproductive health peer education program reported that there were significant differences found overtime and between intervention and control groups concerning use of contraceptives in the previous 3 months. The outcome of the reproductive health education program provided evidence that the peer education was more effective in terms of behaviour change in school settings.

The Nigerian study on effectiveness of a school based AIDS education program for secondary school students done by Fawole et al. (1999) reported that the subjects in the intervention group (233 senior students) received comprehensive health education intervention and there were 217 controls. The study showed a decrease in the number of sexual partners among the intervention group from 1.51 to 1.06 while their condom use was on the increase. Kane (1993) in Banjul, The Gambia, found that the contraceptive use of female adolescents who had attended FLE programs was higher than those who did not attend.

European countries have already demonstrated great success with responsible sexuality education programs. The Netherlands, where sexuality
education begins in preschool and is integrated into all levels boasts the lowest teen birth rate. The Dutch teenage abortion rate is more than three times lower than that of the U.S and its overall AIDS case rate is more than eight times lower. In Germany, where sexuality education is comprehensive and targeted to meet the reading and developmental needs of the students, the teen birth rate is more than four times lower than that of the U.S and its overall AIDS rate is 11.5 times lower. France has a nationally mandated sexuality education program that begins when the students are 13. Their teen birth rate is approximately six times lower than that of U.S, the teen abortion rate more than two times lower and the AIDS rate more than three times lower (Berne & Huberman, 1999; Singh & Darroch, 2000).

Chen (1997) conducted a study among Chinese adolescent girls to assess the effectiveness of sex education program. The posttest was conducted after one month and it revealed that the mean practice score on sexual health increased from 50.8 to 79.0 which indicated that the sex education program was effective.

**Conclusion**

The literature review has given an overview about the adolescent reproductive health problems as well as about the family life education. Research done in different parts of the world revealed that experimental studies in this area were scarce. Moreover among the Indian studies only few studies are reported from South India regarding the effectiveness of family life education program. There is a felt need for measurement of impact of family life education program using larger sample. Therefore a study in rural setting on a large sample using experimental study design is attempted.
CONCEPTUAL FRAMEWORK

The conceptual framework of the present study is based on the Health Promotion Model by Pender, Murdaugh, and Parsons (2002). The Health Promotion Model (HPM) was designed to be a complementary counterpart to models of health protection and it is based on constructs from Expectancy Value theory including Health Belief model (1975) and Social Cognitive Theory (1997). The Health Promotion Model represents a theoretical perspective that explores the factors and relationships contributing to health promoting behaviour and therefore to the enhancement of health and quality of life. HPM is a guide for exploration of the complex bio-psychosocial processes that motivate individuals to engage in health behaviours directed towards the enhancement of health. Health promotion is directed at increasing the client’s level of well being. The model focuses on three components that enhances or decreases participation in health promoting behaviours. They are the individual characteristics and experiences, activity related affect and the health promoting outcomes. Nursing intervention has an important role in promoting health behaviour by influencing these components and results in improved health and better quality of life at all stages of development (Pender, Murdaugh & Parsons, 2002). Application of this model in the health promotion of adolescents has been reviewed by Srof and Velsor- Friedrich (2006).

The first component is the individual characteristics and experiences. The individual characteristics and experiences are the innate factors as well as individual experiences that inform future behaviour. The second component of the HPM model is the activity related affect. It refers to the variables affecting the likelihood of initiating the health promoting behaviours. The third component is
the health promoting outcome. It is believed that the individual characteristics, the personal and the socio-demographic factors and the activity related affect are considered to influence the future behaviour of clients leading to positive health promoting outcomes.

In the context of the present study, the individual characteristics and experiences include the socio-demographic and personal characteristics of adolescent girls and their parents. The socio-demographic characteristics of adolescent girls are age, religion, education, occupation, family income and type of family and their personal characteristics are attainment of menarche, age at menarche, information received about menarche, sexuality, source of information about menarche and sexuality and presence of menstrual problems. It also includes the socio demographic characteristics of their parents (education and occupation). The variables affecting the health promoting outcomes are the knowledge, attitude, and practice of adolescent girls about family life.

The individual experiences refer to the current knowledge, attitude and practice of unmarried rural adolescent girls about the following selected aspects of family life

- Human reproductive system including puberty
- Menstruation and menstrual hygiene
- Responsible sexual behaviours
- Pregnancy / Conception
- Contraceptives
- Sexually Transmitted Infections (STIs)
- HIV/ AIDS
The activity related affect in this study refers to the Adolescent Family Life Education (AFLE) program. The AFLE program is an interventional activity related affect which contribute to the changes in the health promoting outcomes (knowledge, attitude and practice). The concept of intervention with Adolescent Family Life Education (AFLE) program that causes the nursing intervention to be formalized and internalized into a commitment to oneself. AFLE directly influences the knowledge thereby the attitude and practice of adolescent girls about family life.

In the present study, it is presented that the adolescent girls in the experimental group, who had participated in the AFLE program will have an improvement in their knowledge, attitude and practice about family life which in turn will lead to health promoting outcome. And, among the girls who did not participate in the AFLE program (control group), there will not be any change in the knowledge, attitude and practice related to family life.
Individual Characteristics and Experiences

Current Knowledge, Attitude and Practice of Rural Adolescent Girls about Family Life
- Human reproductive system including puberty
- Menstruation and menstrual hygiene
- Responsible sexual behaviour
- Pregnancy / Conception
- Contraceptives
- Sexually Transmitted Infections
- HIV/ AIDS

Activity – Related Affect

Experimental Group
- Pretest
- AFLE
- Posttest

Control Group
- Pretest
- No AFLE
- Posttest

Health Promoting Outcomes
- Adequate Knowledge
- Favourable Attitude
- Adequate Practice
- Inadequate Knowledge
- Unfavourable Attitude
- Inadequate Practice

Socio-demographic and Personal Characteristics of Adolescent Girls
- Age
- Religion
- Education
- Occupation
- Family income
- Type of family
- Attainment of menarche
- Age at menarche
- Information about menarche and sexuality
- Source of information
- Menstrual problems

Socio-demographic Characteristics of parents of Adolescent Girls
- Parent’s Education
- Parent’s Occupation

FIGURE 1. CONCEPTUAL FRAMEWORK
Based on Health Promotion Model by Pender, Murdaugh & Parsons (2002)