Review Article

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Sex Education and Adoption Education among Adolescent: A Comprehensive Review of the Literature

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Abstract

This review article focuses on perspective of awareness on healthy sex practice among adolescent through proper sex education and adoption of sex education in their practical life. Current information shows that adolescents are inadequately informed about their own sexuality, physical wellbeing and their health, the major source of information being the media and peers. Whatever knowledge they have is incomplete. Low rate of educational attainment, limited sex education activities, and inhibited attitudes towards sex, attenuate this ignorance leading to unwanted pregnancy, illegal abortion, mortality and morbidity among young girls. Knowledge based on gender, education, and place of residence with uneducated rural girls having the least information. Adolescents need the opportunity to express positive relationships, constructive behavior, to learn skills and acquire knowledge. They need access to information counseling and services that will help them to establish healthy relationship and protect themselves from unwanted pregnancy and STDs.

Keywords: Sex Education; Adolescent; STDs; Knowledge; Attitude.

Introduction

Adolescence is the period of transition from childhood to adulthood. It is the period of life between ages of 10-19 years. This period is very crucial, since these are the formative years of life of an individual, when major physical, psychological and behavioral changes take place. This is an impressionable period of life. This is also a period of preparation for undertaking greater responsibilities including healthy responsible parenthood in future. Adolescents form prospective human resource for the society.

In the world, one in every five people is an adolescent. Out of 1.2 billion adolescents' worldwide, about 85% live in developing countries and the remaining live in the industrialized world.

In India there are 15 million adolescents compromising 21% of India's total population. The health related experiences, attitude and behavior of these youth are intimately linked with their social, educational and economic aspirations and options have a strong impact on the future of Indian society. In India 33% of women are married at the age of 15 and almost two- third by the age of 18. Only 7% of married adolescents in India use any one method of

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contraception. Adolescents lack information about sexuality.

Sexuality is a fundamental aspect of human life: it has physical, psychological, spiritual, social, economic, political and cultural dimensions.

Sexuality education is the lifelong process of acquiring information and forming attitudes, beliefs, and values about identity, relationships, and intimacy. It encompasses sexual development, reproductive health, interpersonal relationships, affection, intimacy, body image, and gender roles. Sexuality education addresses the biological, socio-cultural, psychological, and spiritual dimensions of sexuality.

Sexuality education first established on a national scale in Europe in the 1960s, developing countries introduced school-based sexuality education in the 1980s. The emergence of HIV/AIDS gave many governments the impetus to strengthen and expand sexuality education efforts and, currently, more than 100 countries have such programs, including almost every country in sub-Saharan Africa (McCauley and Salter, 1995; Smith, Kippax, and Aggleton, 2000; Rosen and Conly, 1998). U.N. organizations such as UNFPA, UNESCO, and UNICEF have traditionally been the leading international supporters of sexuality education. The World Bank, through its intensified efforts to help countries fight HIV/AIDS, has also become a major funder (World Bank, 2002b). Many other bilateral donors and private foundations and organizations support and promote sexuality education worldwide.

The need for demand is growing in developing countries for sexual and reproductive programmes for young people. Research indicates that current program do not match the needs and health seeking behaviors of young people. Behavioral theories and experts agree that adolescents must be taught generic and health specific skills necessary for adopting healthy behaviors.

Emergence of AIDS has focused everybody's attention towards the role of sex education. AIDS and other sexually transmitted diseases (STDs) are common today, but many parents, teachers and students do not understand these diseases and their prevention. Young people for a variety of reasons such as developmental issues, peer pressure, social influences etc. is becoming sexually active at an early age more than ever before. However, this early sexual activity is often not accompanied by knowledge about its consequences.

The absence or lack of sex education puts the youth at risk for unplanned pregnancy and various STDs. It also results in to a phenomenon of unwed mothers, which is quite common in Europe, Africa and America and also being reported from India. Unplanned pregnancy when subjected to termination may cause maternal morbidity as well as mortality.

A study of nurses who care for adolescents indicated that although nurses recognize the importance of sexuality, they are not addressing sexuality issues in their practice because of lack of knowledge, embarrassment, and their belief that the patient would be embarrassed. This review article focuses on need for sex education, counseling and services among adolescent that will help them to establish healthy relationship and protect themselves from unwanted pregnancy and STDs.

Importance of Sexuality Education Programs

Sexuality education aims to achieve a range of outcomes, these objectives include:

- Reduced sexual activity (including postponing age at first intercourse and promoting abstinence);
- Reduced number of sexual partners;
- Increased contraceptive use, especially use of condoms among youth who are sexually active for both pregnancy prevention and prevention of HIV/AIDS and other sexually transmitted infections (STIs);
- Lower rates of child marriage;
- Lower rates of early, unwanted pregnancy and resulting abortions;
- Lower rates of infection of HIV/AIDS and other STIs;
- Improved nutritional status. Sexuality education programs are part of a suite of proven interventions that include activities such as peer education, mass media, social marketing, youth-friendly services, and policy dialogue and advocacy. School and livelihood opportunities complement and reinforce these approaches.

Strategies to overcome opposition to sexuality education are:

- Inform the debate
- Involve traditional and religious leaders..
- Communicate openly
- Involve caring adults
- Mobilize the community

- Training teachers.
- Selecting and motivating teachers

Literature Studies show that Effective Program can:

- Reduce misinformation;
- Increase correct knowledge;
- Clarify and strengthen positive values and attitudes;
- Increase skills to make informed decisions and act upon them;
- Improve perceptions about peer groups and social norms; and
- Increase com abstains from or delays the debut of sexual relations;
- Reduce the frequency of unprotected sexual activity;
- Reduce the number of sexual partners; and
- Increase the use of protection against unintended pregnancy and STIs during sexual intercourse. communication with parents or other trusted adults.

In order to collect the information, the investigator used online sources like PubMed, Google and also surveyed latest books and journal. Review was done on the research and non-research literature.

The reviewed literature has been focused on following areas.

- Need for sex education.
- Knowledge on sex education.
- Contraception.
- Human sexuality and sexual behavior.
- Sexually transmitted disease.

Need for Sex Education

Major Goals of Sexuality education are:

- Improving knowledge, attitudes, and behaviors
- Increasing utilization of YRH services and products
- Creating a supportive environment
- Explain and clarify feelings, values and attitudes
- Develop or strengthen skills
- Promote and sustain risk-reducing behavior.

A study investigated the needs and preferences regarding sex education among college students. The study was conducted on four campuses of a university with nearly 30,000 undergraduate students located in Eastern China. Results showed that before college, 47% of respondents had received no school –based education on sexual behaviour; however all respondents had taken a class covering reproduction, typically beginning in middle school (78%). Higher proportions of males than females favored including sex therapy and masturbation in a hypothetical course. Males and females differed on how best to convey information on sexuality with females generally favouring private methods, such as reading. The study findings concluded that comprehensive school based sex education is needed for Chinese youth [1].

A study investigated the association between sex education and youth's engagement in sexual intercourse, age at first intercourse, and birth control use at first sex. The sample included 2019 never-married males and females aged 15-19 years. The result of the study showed that receiving sex education was associated with postponing sexual intercourse until age 15 and using birth control methods, the first time they had sexual intercourse [2].

A study investigated the effectiveness of diverse campaigns on sexual education carried out in Spain. The results of this analysis showed a progressive increase in the percentage of abortions among teenagers between 15 and 19 years. The total numbers of pregnancies have grown from 20% in 1990 to 44% in 2000 arriving at 46.6% in 2003. The findings revealed that, the number of abortions in the last 5 years has multiplied by three without achieving stabilization in the number of new abortions per year and the evolution of the declared sexually transmitted diseases shows an increase of 79% in syphilis and a 45.8% in uncomplicated gonorrhoea [3].

A study was conducted on evaluation of drama-in –education programme to increase AIDS awareness in South African high schools. One thousand and eighty students participated in the first survey and 699 in the second. Improvement in knowledge ($P=0.0002$) and attitude ($P < 0.00001$) about HIV/AIDS was demonstrated in pupils at schools receiving the drama programme. The findings indicated that adolescents' risk of becoming infected with HIV is increased by a lifestyle involving a greater degree of exploration, experimentation, and rebellion. The high prevalence of sexually transmitted diseases and the high rate of adolescent pregnancy confirm the existence of a pattern of early onset of sexual intercourse, multiple partners and a low

incidence of condom use [4].

A study was done to test the effects of HIV/AIDS education program. A total of 2026 sixth and seventh grade pupils participated at baseline survey (85%) and 1785 at follow-up. The program was designed to reduce children's risk of HIV infection and to improve their tolerance of and care for people with AIDS. Result showed that intervention pupils reported significantly higher scores for the outcome measures than pupils attending the comparison schools [5].

A study was conducted among the Secondary school teachers with the view point on sex education. This study assessed the knowledge of human sexuality among 351 secondary school teachers in Ibadan, Nigeria, and their attitude towards inclusion of sex education in the schools' curriculum. Results revealed that one of the respondents was able to define sex education adequately and 34.8% could not identify content areas of sex education for inclusion in the school curriculum. Surprisingly, married female teachers and those aged 40 years and above were less favourably disposed to the introduction of sex education in schools [6].

A cross-sectional study was done on teacher's perception on sex education. A total of 249 teachers were studied. Their mean age was 38.7 years +/- 8.08 SD. Two hundred and ten teachers (84%) were females. Two hundred and twenty-four teachers (90%) were married and 168 (67.5%) were of Roman Catholic faith. The awareness of reproductive health activities was high. There was a high proportion of respondents who approved of sex education for adolescents (77.5%) and an equally high proportion who believed that it was important (89%). One hundred and ninety-eight (79%) of the respondents were willing to conduct sex education. It was concluded that secondary school teachers in Enugu urban were willing to offer sex education to adolescents under their care irrespective of their religion, sex or marital status [7].

A study investigated the knowledge about sexuality among middle school students. In exchange for a free physical examination, 116 youths from middle schools in Texas consented to answer open-ended questions about their sexual behaviour, contraceptive knowledge, and type and source of knowledge of sexuality. The students ranged in age from 12-15 years (mean age, 13 years); 27% were Hispanic and 73% were black. Sex education was not a part of the curriculum at the 4 schools from which respondents were drawn. When asked what sex meant to them, 37% of female adolescents and 23% of males indicated they did not know or it did not mean anything. Among female adolescents, 53% listed their mother as their primary source of knowledge about sexual matters and 6% listed a friend. Among males, fathers (17%) and friends (17%) were the most frequent knowledge sources [8].

Knowledge and Attitude towards Sex Education

A cross-sectional study was conducted on knowledge and attitude of adolescent girls towards reproductive health and related problems at Bilaspur. The sample consisted of 500 randomly selected adolescent girls in the age group of 15-19 years. The findings revealed that about two-third (75.6%) of the girls were aware about all the signs of adolescence and 88.8%were aware about the need for healthy life. Majority (80%) had idea about various aspects of sex education.80.4% of girls had sex education. Emergency contraceptives were known only to 19.6 %. 31.6% were aware about STDs could be prevented by the use of condoms. Only 51.2% were aware about right legal age of marriage for girls [9].

A study was conducted to determine knowledge of human sexuality, physiology of reproduction and contraception, among first Year College girls and also assessed parental education and socioeconomic back ground on their level of awareness. A sample of 530 females from three girls colleges were provided questionnaire. Findings showed that 59% possessed adequate knowledge regarding sexual matters and was positively related to educational status of their parents and residence in hostel. None of them had experienced sex and all of them had heterosexual inclination. The investigator emphasized the significance of incorporating sex education in to school curricula so that girls acquire correct knowledge from reliable and socially acceptable sources rather than from pornography [10].

A study was conducted on knowledge and acceptance of sex education at Agbo-Oba, Nigeria. Data on knowledge and attitudes toward sex education was collected from 178 females and 224 males, 15 years of age or older,. 63.4% of the male respondents and 70.2% of the female respondents had some knowledge of sex education. In all age groups, at least 60% of the respondents knew about sex education. Respondents' source of sex education included parents (24.6%), friends (36.8%), school teachers (18.4%), books and magazines (64.7%), health personnel (6%), and churches (1.5%). Respondent knowledge of specific components of sex education was limited [11].

A study was conducted to assess the knowledge

and attitude towards sex education among secondary school teachers in Enugu. A cross-sectional study of 300 teachers drawn from nine randomly selected secondary schools in Enugu metropolis was carried out. Pre-tested self administered structured questionnaire was used as instrument for data collection. Results showed that (23.0%) had adequate knowledge on sex education and 282 (94.0%) approved the inclusion of sex education into the school curriculum. The commonest reason for disapproval of sex education was fear that it would lead to promiscuity amongst the students. Educational status and marital status of the teachers were significant determinants of positive attitude to sex education $p<0.05$. The most appropriate age to introduce sex education according to the teachers was 11-15 years. Two hundred and thirty eight (79.3%) respondents were of the opinion that teachers needed to be trained to provide sex education to students and 244 (81.3%) admitted that sex education was not in the school curriculum. So the secondary school teachers are in support of provision of sex education to students. So that there is need to include sex education in the school curriculum [12].

A study evaluates the effectiveness of a school-based AIDS education program for secondary school students in the local government area of Ibadan, Nigeria. It compared the knowledge, attitude, and sexual risk behaviors of 233 senior students who received comprehensive health education intervention with 217 controls. Baseline data showed that there was no significant difference between the two groups as to their knowledge and attitudes on HIV/AIDS and their sexual behaviour. End line comparisons, however, reveal that the knowledge about HIV transmission and prevention was significantly higher (P 0.05) in the intervention group. Furthermore, 92.8% of the intervention students as compared to only 56.7% of the controls felt AIDS constituted a problem in Nigeria, indicating better attitudes among the intervention group. In conclusion, the education program was successful in improving the student's sexual practices as well as their knowledge and attitudes regarding HIV/AIDS.[13]

An experimental study was conducted on the effectiveness of structured teaching program in improving knowledge and attitude of school going adolescents on reproductive health in in Dharan town of Nepal. Structured teaching program consisting of information on human reproductive system was used as a tool of investigation for the experimental group, whereas Conventional teaching method was used for the control group. A total of 200 Adolescent school students were included in this study. The mean (+/-SD) pre-test score of the experimental group on knowledge of reproductive health was 39.83 (+/- 16.89) and of the control group was 39.47(+/- 0.08). Post-test score after administration of the structured teaching program was (84.60+/-10.60) and of the control was (43.93+/-10.08). Hence the study findings revealed that use of structured teaching program is effective in improving knowledge and attitude of the adolescents on reproductive health [14].

A study was done to assess the knowledge, attitude, and practices of Omani adolescents about reproductive health in a secondary school; a sample of 1670 boys and 1675 girls were studied through a self – administered questionnaire the adolescents were asked about puberty, marriage birth spacing, AIDS and sexually transmitted infections. Only half of the sample knew the changes at puberty of their own sex, while even fewer knew the changes in the opposite sex. Girls were inclined significantly towards later age of marriage than boys. About two – third of the adolescents had a positive attitude toward modern contraceptive methods and intended to use them in the future. Knowledge of fertility period and sexually transmitted infections were poor [15].

A descriptive cross-sectional survey was carried out to assess knowledge, attitude and perceptions of the teacher's role in sex education in public schools in Nigeria. The study collected information from 305 secondary school teachers selected by multi-stage random sampling method from Osun state, Nigeria, using a pre-tested semi-structured questionnaire. The finding revealed that knowledge about key reproductive issues was poor and inadequate. Knowledge of more than one contraceptive method was low (39.0%), Condom was most frequently mentioned (59.3%). The teachers exhibited poor perception of their role in sex education to their students. 52.8% of teachers placed the sole responsibility for sex education on parents and only 20.7% found that it should start before age 10 years of age [16].

Contraception

STDs and HIV infection are other major morbidities of sexual activity. While adolescents and young adults age 15 to 24 accounts for only one-quarter of the sexually active population in the U.S., nearly one-half of all new cases of STDs occur in this age group [17,18] Teens age 10-19 are at higher risk for acquiring STDs for a variety of behavioral, biological and cultural reason [17,18,19] Nearly 4 million new STD cases occur each year among teens [17]. As a result, about one-third of all sexually active young people

become infected with an STD by age 24 [17]. Data from the 2006 STD Surveillance Report demonstrated increases in rates of gonorrhea, syphilis, and chlamydia in the 15-19 year old age group. This data covered Region V which includes Ohio[19].

A study investigated a comparative analysis of parents' and teachers' view points on contraceptive practice among adolescents in Port Harcourt, Nigeria. The study compares the viewpoint of parents and teachers on contraceptive practice by sexually active adolescents in the study environment. Findings showed that there was significant difference in opinion ($P < 0.05$) between parents and teachers on the use of contraceptives by adolescent girls. Most (79.1%) parents did not encourage girls to use contraceptives. However, a substantial number (45.8%) of teachers would similarly not encourage adolescents to use contraceptives. Based on the findings, it was concluded that for family planning program directed towards adolescents to succeed parents' and teachers' view point must be put into consideration. In addition, teachers and parents need training in reproductive health [20].

A study was conducted among in-school adolescents in six secondary schools in the health districts of Ikenne Local Government to assess the sexual behaviour, contraception and fertility experiences of the adolescents. Relevant information was collected from 1140 in-school adolescents with the aid of pre-tested, structured, self-administered questionnaires, selected by using multistage and stratified random sampling techniques. The mean ages at first intercourse were 13.9 +/- 2.8 years and 14.8 +/- 2.4 years for males and females respectively. Boys initiated sex earlier than girls. This difference was found to be statistically significant ($p<0.05$). Sexual intercourse had been experienced by 28.5% of the adolescent students, significantly more (37.6%) males than females (20.4%) the school adolescents that responded as being married were 4.5% (26 males, 23 females) of the respondents. Knowledge on contraception was 36.9% and 22.1% for male and female students respectively. Current use of contraception was equally low, and was found to be 10.9% and 6.0% for males and females respectively [21].

A study was conducted on knowledge, attitude, and practice of family planning among senior high school students in north Gonder, Ethiopia, in May 1993. Sexual experience, knowledge, attitude, and practice of contraception were studied among 991 senior high school students 15-17 years old in 3 secondary schools. 304 (30.7%) students reported that they had experienced sexual intercourse. 14 (4.6%) of these students had started sex life at 14 years of age. 150 of them (49.3%) had sex only with boyfriend or girlfriend, and 59 (19.4%) with a prostitute. 44 (14.5%) had sex with more than one of these. Out of 83 sexually active female students 25 (30.1%) reported having been pregnant. Only 4 students admitted to having had an abortion. 750 (75.7%) students claimed that they knew at least one method of modern contraception 265 (27.5%) cited books; 185 (19.2%) cited friends; 122 (12.7%) cited the mass media; and 27 (2.8%) mentioned sexual partners. 533 (53.8%) students wanted to have sex with only one partner; 48 (3.8%) preferred many partners; and 13 (1.3%) did not want sexual intercourse at all [22].

A cross-sectional descriptive study was conducted on knowledge and perceptions of adolescents in the age group of 10-19 years in two districts of Kenya. 1820 adolescents were subjected to a self-administered questionnaire that collected demographic and health data as well as perceptions of induced abortion. Result showed that more than 90% were aware of induced abortion. Knowledge of Induced abortion correlated positively with level of education ($P < 0.01$). The study concluded that the adolescents are aware of abortion and the related complications, but there is more variability in their knowledge and preventive measures [23].

The Department of Health and Social Security (DHSS) in Great Britain issued "guidelines" to doctors in 1967 stating that it was permissible to give advice and contraceptive agents to underage females without parental consent. The issues can be reduced to this question: is a child of less than 16 years of age legally competent to seek contraceptive advice and treatment without the knowledge and consent of a parent or guardian. The Court of Appeal approached the problem assuming that the solution was to be found in the various Acts of Parliament, and it looked at every statute that dealt with children to learn what Parliament thought of parents. A majority of the House of Lords concluded that the question of birth control for minors was essentially a medico social issue which, in exceptional circumstances, was best left to the clinical judgment of the appropriate health professionals, and that there was nothing in any statutory enactment which vested the exclusive right in a parent or guardian to permit or prohibit a girl below the age of 16 years to obtain professional advice or treatment relating to contraception [24].

Human Sexuality and Sexual Behavior

Some individuals have voiced concern that more comprehensive discussions about sexual behavior may encourage teens to become sexually active. The

2007 With One Voice survey [25] Sexual Health and Adoption Education Project: Final Report 7 found that 53% of teens and 52% of parents of teens reported that the statement, "Don't have sex, but if you do you should use birth control or protection," would not encourage teens to have sex. In the NPR/Kaiser/ Kennedy School study , two-thirds of respondents were more concerned that not providing information about how to obtain and use condoms and contraceptives might result in more teens having unsafe sexual intercourse than whether the information would encourage teens to have sexual intercourse. Similarly, in the 2008 Ohio ODH survey [26], 92% of parents strongly disagreed that talking about sexual issues would encourage their 13-18 year old adolescent to have sex and 82% of 13-18 year olds strongly disagreed that this discussion would encourage them to have sex.

A study investigated the dynamics intergenerational sexual relationships among school girls in Botswana. In- depth interviews were conducted with 15 school girls who were currently in intergenerational sexual relationships. The social, cultural and economic factors that cause young girls to engage in these relationships and how intergenerational sex contributes to unsafe sexual practices were examined. The findings revealed 42% were passive and controlled by their older sexual partners. 34% derived pleasure, enjoyment, love and equal partnership in these sexual relationships. 24% of girls had little or no decision-making power. Their relationships with older boyfriends were characterised by coercion and manipulation. Negotiation for condom use was difficult for this group [27].

A study was conducted on AIDS, sexuality and attitude of adolescents about protection against HIV. A questionnaire was answered by 1,386 middle school students from the state of Santa Catarina, Southern Brazil, in 2000. Data analysis comprised statistical description and relational analysis (Chi-square and mean comparison tests) Result showed that lack of knowledge about HIV transmission was related to peers as main information source ($p<0.05$). Steady romantic relationships are the predominant context for sexual relationships with penetration ($p<0.001$). A positive attitude for condom use is favored by talks about sexuality and the intention of condom use ($p<0.001$). So the practice of safe sex is affected by adolescent's level of information, their attitudes about condom use and fear of the epidemic [28].

A study was conducted to assess the knowledge and attitude of unmarried young adults about desirable sexual behavior. The study was conducted in the rural community of Najafgarh, Delhi. Purposive sampling technique was used. The sample comprised of 30 unmarried young adults and 15 doctors, P.H.N and parents for the study. Structured knowledge questionnaire, Attitude scale and structure opinion ire were utilized for data collection. Major finding of the study revealed, knowledge deficit and negative attitude among unmarried young adults. There was significantly positive correlation between knowledge and attitude scores of unmarried young adult towards desirable sexual behavior [29].

A study was conducted on the perception among upper Middle class Adolescents in Bombay regarding Sexual behavior and sexuality. The study population consisted of 1250 students from three senior higher secondary schools in Mumbai, India. Majority of the study subjects (61%) were 16 years old and 58% of them were females. The results indicated that majority of students follow traditional norms and intend to refrain from premarital sex. However significantly more males (38%) than females (12%) indicated that they felt it was okay to engage in sexual behaviour with a steady partner ($\chi 2=30.3, p<0.001$).Only 4% of these students reported having had a previous sexual experience [30].

Awareness on Sexually Transmitted Disease

Although schools play an important role in sexuality education, the role of parents is vitally important. National data have shown that teens have consistently listed parents as the most influential individuals regarding decisions about engaging in sexual activity. In the 2007 With One Voice survey [25] 47% of 12-19 year olds listed parents first as a source of information with the second choice being18% for friends. Two-thirds of teens reported sharing their parents' values about sex, while 3% reported that they didn't know their parents' values. A total of 71% reported having talked to their parents about delaying sex and avoiding teen pregnancy.

The majority of parents of teens (88%) reported that they did not know when or how to have this discussion. Data from the 2008 Ohio ODH survey found that 57% of parents and 41% of youth agreed that sex education should primarily come from the family and be supplemented by the school [26].

A study was conducted on the effectiveness of HIV/AIDS awareness in a rural community in Imo state, Nigeria. Friends and relatives emerged as the most effective source of AIDS awareness for women followed by community meetings and then television, whereas the most effective sources for the girls were

television followed by friends and relatives, and radio [31].

A study investigated the knowledge and understanding of AIDS in rural women. This study was conducted in 16 villages belonging to Villupuram health Unit District among 1,200 randomly selected women in the age group of 15-45 years, using a two stage sampling design. Qualitative methods were also used for collecting data. The result showed 28% of the women have not heard of AIDS and rural women's knowledge was poor in areas like cause, symptoms and prevention. With regard to the investigations done for confirming HIV infection, 44% of illiterate and 62% of the literate were aware of doing blood test [32].

A study was conducted to assess the knowledge and attitude towards AIDS, sexually transmitted diseases (STDs) and sexuality among college students in Thiruvananthapuram district, Kerala. Community-based, cross-sectional surveys of 625 randomly selected undergraduate college students (164 boys, 461 girls, age 18-22 years) was conducted.

A pre-tested, structured questionnaire was used to assess the knowledge and attitude of the students towards AIDS, STDs and sexuality. Result showed that all the students in this sample had heard about AIDS. However, only 45% knew that AIDS is not curable at present. Only 34% were aware of the symptoms of STDs, and 47% knew that STDs are associated with an increased risk of AIDS. The study identified substantial lacunae in the knowledge and attitude towards AIDS, STDs and sexuality among college students in Kerala [33].

Adoption Sex Education

Evidence suggests that secondary school sex education programs that teach medically accurate, evidence-based comprehensive information about abstinence, pregnancy prevention, and safe sex practices to prevent STDs and HIV infection have a positive impact on healthy sexual behavior. This type of comprehensive programming can delay the onset of first sexual intercourse among teenagers, reduce their frequency of sexual activity, reduce their number of sexual partners, and increase contraceptive and condom use when they become sexually involved.

These programs had clear health goals with specific behavioral objectives and addressed perceived risks, norms, values, attitudes, and self efficacy in addition to knowledge. The programs also went further than just delineating risky behavior by teaching teens how to avoid situations that lead to negative health consequences. Teaching methods actively involved participants enabling them to understand how the information directly applied to their lives. These programs focused on encouraging protective factors while avoiding risky behaviors. In addition, these programs showed sensitivity to the developmental maturity, cultural values, and levels of sexual experience among the participants.

Several authors Kirby (1), Alford (2), and Card (3) have compiled lists of recommended programs that have been reviewed for effectiveness. These publications provide a wide choice of programs for communities to choose from which best fit in with the community's values, and resources including staff time, skills, space, and supplies. Five curriculum-based programs that were effective for both males and females were mentioned by Alford and Kirby and had at least two behavioral outcomes including delayed sex, reduced frequency of sex, reduced number of partners, increased condom use, increased contraceptive use, or decreased unprotected sex. These programs included:

- Reducing the Risk: Building Skills to Prevent Pregnancy, STD & HIV;
- Safer Choices: Preventing HIV, Other STD, and Pregnancy;
- Becoming a Responsible Teen: An HIV Risk Reduction Program for Adolescents;
- Making Proud Choices: A Safer Sex Approach to HIV/STDs and Teen Pregnancy Prevention;
- ¡Cuidate! (Take Care of Yourself) The Latino Youth Health Promotion Program.

Of these five programs, Reducing the Risk and Safer Choices focus on both Pregnancy and STD/HIV prevention and are applicable to youth of all ethnic backgrounds. Reducing the Risk has had outcomes replicated in other evaluation studies.

Two adoption education curricula have been identified: (F.L.A.S.H.) from Seattle[34] and Adoption University from the Nebraska Children's Home Society[35]. At this time, the best approach to teaching adoption would be to ensure that it includes the information found to be absent in surveys of adolescents and that it follow Kirby's guidelines about effective curriculum which include interactive programming that addresses knowledge, attitudes, and self efficacy in decision making. There are no published evidence-based research studies on the impact of secondary school-based classroom curricula about adoption

Key elements of successful sexuality education programs?

According to UNAIDS, an effective school-based sexuality education program
• Recognizes the child/youth as a learner who already knows, feels, and can do in relation to healthy development and HIV/AIDS-related prevention.
• Focuses on risks that are most common to the learning group and with responses that are appropriate and targeted to the age group.
• Includes not only knowledge but also attitudes and skills needed for prevention.
• Understands the impact of relationships on behavior change and reinforces positive social values.
• Is based on analysis of learners' needs and a broader situation assessment.
• Has training and continuous support of teachers and other service providers.
• Uses multiple and participatory learning activities and strategies.
• Involves the wider community.
• Ensures sequence, progression, and continuity of messages.
• Is placed in an appropriate context in the school curriculum.
• Lasts a sufficient time to meet program goals and objectives.
• Is coordinated with a wider school health promotion program.
• Contains factually correct and consistent messages.
• Has established political support through intense advocacy to overcome barriers and go to scale.
• Portrays human sexuality as a healthy and normal part of life and is not derogatory against gender, race, ethnicity, or sexual orientation.
• Includes monitoring and evaluation.

Source: Adapted from World Bank, 2003)

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