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# Contraception for adolescents and sexually transmitted diseases

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Adolescents, defined by WHO as persons between 10 and 19 years of age, make up about 20% of the world's population, of whom 85% live in developing countries.[i] Adolescents were considered to be a relatively healthy age group, one without a heavy "burden of disease", compared, for instance, to newborn infants or elderly adults. However, recognition has been growing in recent years among policy-makers that adolescents have special health-related vulnerabilities. The major causes of morbidity and mortality among young people include suicide, road accidents, drug use (including tobacco use) and sexual and reproductive ill health. Furthermore, adolescence is increasingly seen as a "gateway to health" because behavioral patterns acquired during this period tend to last throughout adult life – approximately 70% of premature deaths among adults are due to behaviours which began during adolescence.

Undoubtedly, sexual intercourse place young people at risk for HIV infection and other sexually transmitted diseases (STDs). Vaginal intercourse carries the additional risk of pregnancy. In the United States in 2007, 48% of high school students had ever had sexual intercourse, and 15% of high school students had had four or more sex partners during their life.[ii] During the same year, 39% of currently sexually active high school students did not use a condom during last sexual intercourse. In 2006, an estimated 5.259 young people aged 13-24 in the 33 states reporting to CDC (Centers for Disease Control & Prevention) were diagnosed with HIV/AIDS, representing about 14% of the persons diagnosed that year.[iii] Each year, there are approximately 19 million new STD infections, and almost half of them are among youth aged 15 to 24.[iv] In 2002, 12% of all pregnancies, or 757.000, occurred among adolescents aged 15-19.[v] In addition, young people in the United States use alcohol and other drugs at high rates.[vi] Adolescents are more likely to engage in high-risk behaviours, such as unprotected sex, when they are under the influence of drugs or alcohol. In 2007, 23% of high school students who had sexual intercourse during the past three months drank alcohol or used drugs before last sexual intercourse.[1]

According to WHO (World Health Organization), it is widely acknowledged among public health decision-makers and experts, that adolescents not only have sexual and reproductive needs but likewise rights, including the right to a satisfying and safe sexuality. Adolescents, often termed the "generation of hope", play a vital role for the future health status of any country. Their behaviors, attitudes and beliefs are also shaping the societies of the future. Sexually transmitted infections (STIs) in general, and among adolescents in particular, are of paramount concern to all people who work on improving the health status of populations. Worldwide the highest reported rates of STIs are found among people between 15 and 24 years; up to 60% of the new infections and half of all people living with HIV globally are in this age group.[vii]

STIs are not evenly distributed among the many young people who engage in sexual activity. Sex, frequency and type of intercourse engaged in, the number and characteristics of sexual partners, the extent of condom use, the risk of violence and the epidemiology of STIs locally are all factors that influence STI risk.[8] The relative importance of each of these risk factors is determined by the specific sociocultural and economic context in which young people live. Adolescents at highest risk of STIs tend to be adolescent sex workers and their clients, street children and children in correctional homes. Generally, STIs are probably more common among those who are not going to school than among school-going adolescents. However, in high STI prevalence regions, such as Africa, the Caribbean and, since the 1990s, parts

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of Eastern Europe, most adolescents – including rural school-going ones – are at risk of contracting STIs, even though differentials remain. Girls are more vulnerable to STIs than boys biologically and, in many settings, are at higher risk because they have older partners.

Many adolescents around the world are sexually active and because many sexual contacts among them are unprotected, they are potentially at risk of contracting sexually transmitted infections (STIs). Adolescents' use of contraception is generally low and they are less likely to use condoms than adults because of lack of access and, for girls in particular, the inability to insist on their use. STIs may be the consequence of unprotected sex with a number of short-term partners, but may also occur among those who have a long-term unfaithful, perhaps older, partner or husband. The risk is often greater for adolescents who are in socially and economically marginalized positions as sexual activity may take place within a context of coercion or violence or in the course of selling sex for a living. Furthermore, for biological reasons, sexually active girls may be at greater risk of contracting STIs than boys.

The lack of knowledge, experience and counseling, along with the exploration of sexuality, may give origin to serious health related problems of that age, such as sexually transmitted diseases but also may lead to unintended pregnancies. Every year, 75 million unwanted pregnancies arise worldwide because of non-adoption of any contraceptive method.[viii] Additionally, in at least 8 million cases per year, the applied contraceptive method, fails. It is estimated that 350 million couples around the world have inadequate information about contraceptives. Twelve to fifteen million unmarried women do not use any contraceptive method, and a hundred-twenty to a hundred-fifty million married women who want to confine future pregnancies lack the means to do so. In every single day, 55.000 unsafe abortions are being performed (95% of them in developing countries), and 200 deaths along with an unreported number of disabilities result from these unsafe procedures.

Adolescents are susceptible to unwanted pregnancies, which push them to unwanted marriages or limit their opportunities for further education or employment, predisposing them to long-term welfare dependence. Adolescents are often non- or mis-informed, about sexuality or the risks associated with early and unprotected sexual activity. It is estimated that a percentage from 7.5% to 10% of adolescent women get pregnant in the developed countries (rising to 27% worldwide).[10] Approximately, 51% of adolescent pregnancies end in a live birth, 35% of them result in an abortion with several complications, while 14% of them end to stillbirth or miscarriage.[ix] It is estimated that 52% of adolescents use non-effective contraception.[x] Regardless of the general decrease in births in the USA, the frequency of pregnancy increases for the ages between 14-17 years. Approximately 31% of adolescents did not report any contraceptive method at first intercourse, mostly these who had just met their sexual partner.[xi]

Abstinence from sexual intercourse is the only 100% effective way to prevent pregnancy, HIV and other STDs. The correct and consistent use of a male latex condom can reduce the risk of STD transmission, including HIV infection.[xii,xiii] However, no protective method is 100% effective, and condom use cannot guarantee absolute protection against any STD or pregnancy. HIV/STD prevention education should be developed with the active involvement of parents, be locally determined, and be consistent with community values. It should address the needs of youth who are not engaging in sexual intercourse as well as youth who are currently sexually active, while ensuring that all youth are provided with effective education to protect themselves and others from HIV infection and STDs now and lifelong.

More than 333 million new cases of the four common STDs (gonorrhea, chlamydia, trichomoniasis, and syphilis) occur annually, mostly in the developing world. Combined Oral Contraceptives (COCs) should be steadily used in combination with the condom as a unique contraceptive method providing a complete protection against unwanted pregnancy as well as STDs. Unfortunately, the combined use of condoms and hormonal contraceptives by adolescents seems to be very low.[xiv] In COC users, the incidence of chlamydial and mycoplasmal cervical infections is slightly increased, even though the incidence of pelvic inflammatory disease (PID) shows an over 50% decrease. Unfortunately, the pill offers no protection against viral infections, such as HIV. Despite recent trends towards an increased use by adolescents, consistent condom use is reported by less than half of all the sexually active adolescents. Breakage, slippage, and failure to use throughout the intercourse are the most important faults that result in clinical failure. Teenagers when compared to adults, report condom failure 10 times more frequently.[xv]

The combined oral contraceptive (COC), or the so called "pill", is a popular contraceptive method around the world, as it guarantees the highest contraceptive protection. Other advantages of the pill's use during adolescence include decrease of menorrhagia,[xvi] reduction of benign breast disease, suppression of ovarian functional cysts, lowering the severity of endometriosis and PID, decrease of ovarian and endometrial cancer[xvii] and reduction of the incidence of ectopic pregnancy. Furthermore, the regulation of menstruation, the relief from dysmenorrhea,[xviii] the improvement of polycystic ovarian syndrome and acne, represent extra important positive effects of hormonal contraception.

Among the highly effective methods of reversible contraception, DMPA (Depot Medroxy Progesterone Ace-

tate) offers the longest duration of contraceptive activity, after a single injection every 13 weeks, which can be reversed simply by discontinuation. It is proposed not using DMPA for those adolescents before the 15th year of life or within 3 years of menarche. Appropriate use of emergency contraception could prevent up to 75% of unplanned pregnancies.[xix] A 0.75 mg levonorgestrel pill which is taken as soon as possible after the insecure intercourse and a second one, 12 hours later, seems to be efficient. The effectiveness depends on the time span between coitus and pill administration.

Barrier methods such as the female condom, the vaginal sponge and the cervical cup are not popular in adolescents. Implants immediately after insertion begin to release the progestin in a steady mode. Their effectiveness duration varies from 6 to 84 months and they are a suitable alternative method for many women not particularly for adolescent girls.[xx] Unless a pregnancy has proceeded, intrauterine devices (IUD) are not in common use during adolescence.

In conclusion adolescent contraception continues to be a complex issue for: families, health-care professionals, educators, government officials & youths themselves. Sex-education programmes should be developed through collaboration between: the community, parental organizations, schools, the media and governmental institutions.[xxi] Informing young people about contraception is a responsibility of parents, teachers, physicians, reporters, etc. The theory that sex education and the promotion of contraception use encourage sexual activities is incorrect. The organization of Family Planning Centres for Adolescents is undoubtedly necessary and must become a governmental priority.

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## References


1. WHO [World Health Organization] (1998a). *The second decade: improving adolescent health and development.* Programme brochure. Geneva: WHO, Department of Child and Adolescent Health and Development.
2. CDC. *Youth Risk Behavior Surveillance-United States, 2007 [pdf 1m].* Morbidity & Mortality Weekly Report 2008;57(SS-4):1–131.
3. CDC. HIV/AIDS Surveillance Report, 2006. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2008;18:11.
4. WEINSTOCK H, BERMAN S, CATES W. *Sexually transmitted diseases among American youth: Incidence and prevalence estimates, 2000.* Perspectives on Sexual and Reproductive Health 2004;36(1):6-10.
5. VENTURA SJ, ABMA JC, MOSHER WD, HENSHAW SK. *Recent trends in teenage pregnancy in the United States, 1990-2002. Health E-stats.* Hyattsville, MD: National Center for Health Statistics. Released December 13, 2006.
6. Substance Abuse and Mental Health Services Administration. 2003 National Survey on Drug Use & Health.
7. DEHNE KL, RIEDNER G. *Sexually Transmitted Infections Among Adolescents. The Need for Adequate Health Services.* WHO Library Cataloguing-in-Publication Data. World Health Organization and Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ) GmbH 2005.
8. PAUKKU M, QUAN J, DARNEY P, RAINE T. *Adolescents' contraceptive use and pregnancy history: is there a pattern?* Obstet Gynecol. 2003;101(3):534-8.
9. VENTURA SJ, MOSHER WD, CURTIN SC, ABMA JC, HENSHAW S. *Trends in pregnancies and pregnancy rates by outcome: estimates for the United States, 1976–96.* Vital Health Stat 2000; 21. 56:1–47.
10. American Academy of Pediatrics. Committee on Adolescence. Adolescent pregnancy- Current Trends and Issues. Pediatrics 1999; 103(2):516-20.
11. MANNING WD, LONGMORE MA, GIORDANO PC. *The relationship context of contraceptive use at first intercourse.* Familly Planning Perspectives. 2000; 32(3):104-10.
12. CDC. *Male Latex Condoms and Sexually Transmitted Diseases [pdf 115K].* Atlanta: US Department of Health and Human Services, CDC; January 2003.
13. CROSBY RA, DI CLEMENTE RJ, WINGOOD GM, et al. *Condom failure among adolescents: implications for STD prevention.* Journal of Adolescent Health 2005;36:534-536.
14. OTT MA, ADLER NE, MILLSTEIN SG, TSCHANN JM, ELLEN JM. *The trade-off between hormonal contraceptives and condoms among adolescents.* Perspectives Sex Reprod Health. 2002; 34(1):6-14.
15. CREATSAS G. *2004 Contraception for Adolescents.* In: Sultan C. Pediatric and Adolescent Gynecology: Evidence-Based Clinical Practice karger 2003: pp 225-32.
16. DELIGEOROGLOU E. *Dysfunctional Uterine Bleeding.* Annals of the New York Academy of Sciences 1997; 816:158-64.
17. DELIGEOROGLOU E, MICHAILIDIS E, CREATSAS G. *Oral Contraceptives and Reproductive System Cancer.* Annals of the New York Academy of Sciences 2003; 997:199-208.
18. DELIGEOROGLOU E. *Dysmenorrhea.* Annals of the New York Academy of Sciences 2000; 900:237-44.
19. WANNER MS, COUCHENOUR RL. *Hormonal emergency contraception.* Pharmacotherapy 2002; 22(1):43-53.
20. CROXATTO HB. *Progestin implants for female contraception.* Contraception 2002; 65:15-9.
21. CREATSAS G, DELIGEOROGLOU E. *Contraceprion in Adolescents.* In: Milsom – Contraception and Family Planning. Elsevier, 2005 Chapt 8:133-142.