

Sexually Transmitted Infections in Singapore Teenagers

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Abstract

Introduction: This is a review of sexual knowledge, behaviour and the extent of sexually transmitted infections (STI), including human immunodeficiency virus (HIV) infection, in Singapore adolescents. **Methods:** Data were retrieved from relevant studies, reports and statistics concerning STI and HIV in Singapore. **Results:** For many reasons, adolescents are at a higher risk of acquiring STI and HIV infections. Adolescents in Singapore are still relatively conservative in their sexual attitudes and behaviour. Most of those who had sex never used condoms. Fortunately, the incidence of STI and HIV infections among adolescents is relatively low. However, this may be changing, and there is a proportion of individuals who exhibit higher risk behaviours. **Conclusions:** In this age of rapidly changing morals and values, accurate information and skills need to be provided to young people to ensure that they are adequately prepared to protect themselves from acquiring STI/HIV infection.

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Introduction

Adolescence can be a difficult period for many individuals who have to navigate their way through complicated emotional, psychological, physical and social demands and changes. The transition from childhood to adulthood includes the formation of successful intimate relationships and avoidance of the pitfalls of sexually transmitted infections (STI), including human immunodeficiency virus (HIV) infection, unwanted pregnancies and emotional turmoil. It has been estimated in the United States that when rates are corrected for the percentage in the group who are sexually active, the youngest adolescents have the highest STI rates of any group.¹

Sexual Knowledge and Practices Among Adolescents in Singapore

There are only a handful of studies dealing with sexual knowledge, attitudes, beliefs and practices of Singaporean adolescents. In general, young people in Singapore are relatively conservative on sexual issues.

In his 1998-9 study on 11- to 21-year-old Singaporeans, Clores² found that only 38.5% had ever dated, and only 14% identified themselves to be permissive with regards to sexual attitude. Three in four disapproved of premarital sex even between two individuals who were in love, though

this figure fell to 52% if both had plans to marry. Of the 2369 respondents studied, only 3.4% admitted to having experienced sex. Of these, males outnumbered females 2 to 1. The mean age of onset of sex among those who had sexual intercourse was in the middle teens, gravitating mostly at age 14 years (21.2%) and 15 years (25.9%). Of concern is the fact that just over half (51.8%) of those who had sex never used condoms, and 67% reported not using contraceptive pills, this despite the fact that they showed a good knowledge of pregnancy prevention. Another disconcerting finding was that 1 in 3 respondents believed falsely that condoms could not protect against HIV/STI and another 1 in 3 was unsure of this fact.

In their 1994 study, Ball and Moselle³ interviewed 5149 adolescents aged 12 to 19 years old from 11 schools on risk-taking behaviour. Nearly one-fifth of respondents had had sexual intercourse by 19 years of age. Significantly more boys than girls reported having had sexual intercourse. Similar to Clores' study, only about 1 in 2 sexually active girls and boys used barrier protection against conception and STI. The authors, however, cautioned that these conventional attitudes towards sexuality do not characterise all Singaporean adolescents because there was a rise in the number of unwanted pregnancies and abortions among teens.

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This point is demonstrated in the study by Lee et al⁴ of 100 teenage patients from the ages of 16 to 19 years between November 2000 and June 2001. In this study, the mean age of sexual debut was 16 years. Although the majority of respondents (86%) had fewer than 5 lifetime sexual partners, 20% of males and 8% of females reported more than 5 lifetime partners. Most of their initial partners were boyfriends or girlfriends; however, 30% of males named casual partners as their first partner. Females reported having vaginal (45%) or vaginal and oral sex (55%). Males, on the other hand, had a larger repertoire, with 25% ever having had anal intercourse as well. It can be assumed that this was with female partners as none of the males admitted to having had sex with another male. Most (51% females and 59% males) had never used condoms before. Of those who had used condoms, only a minority (20% of females and 33% of males) used them consistently. The most common reasons cited for not using condoms were: they trusted their partners were safe; the unavailability of condoms at time of sex; and the belief that condoms reduced sexual pleasure.

In a review of 124 men who have sex with men (MSM) seen in the Department of STD Control (DSC) Clinic in 2001 by Ng and Chan (personal communication), only 1.6% were in the 10 to 19 years age group, with the 20 to 29 years age group forming the largest group (45%).

Sexually Transmitted Infections: Statistics and Trends

There has been a significant drop in the number of STI notifications in the last two decades. In 1981, there were 1012 infections per 100,000 males and 515 infections per 100,000 females (Fig. 1).⁵ The proportion of infections diagnosed in the 10 to 19 years age group has also been dropping, slowly but steadily, e.g., from 9% of all notifications in 1978, to 7.3% in 1988, and 4.6% in 1998. In 2001, this fell to 3.8% of total notifications (Fig. 2).

Figure 3 shows the trend in the number of STI notified in males and females between 10 to 19 years of age over the last five years. The number of infections has remained relatively stable during this period of time. Overall, there were slightly more infections detected in females than in males. In 2001, 256 infections were detected: 104 in males and 152 in females.

In 2001, among males between the ages of 10 and 19 years, the two most common infections were those that caused genital discharges, namely, gonorrhoea and non-gonococcal urethritis (NGU). Gonorrhoea accounted for 53% and NGU for 24% of reported infections. It is estimated that over 50% of cases of NGU were caused by *Chlamydia trachomatis*. Other infections reported were genital warts, syphilis and herpes (Fig. 4).

Among females, the most common STI notified in 2001

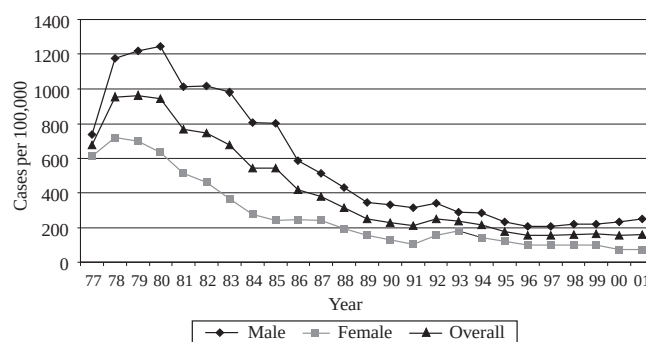


Fig. 1. STI prevalence (1977 to 2001).

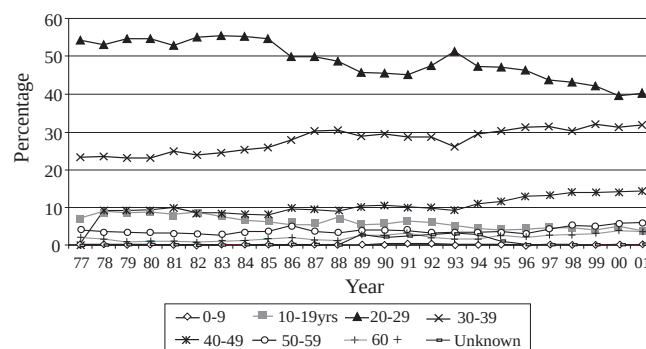


Fig. 2. Percentage of STI by age groups (1977 to 2001).

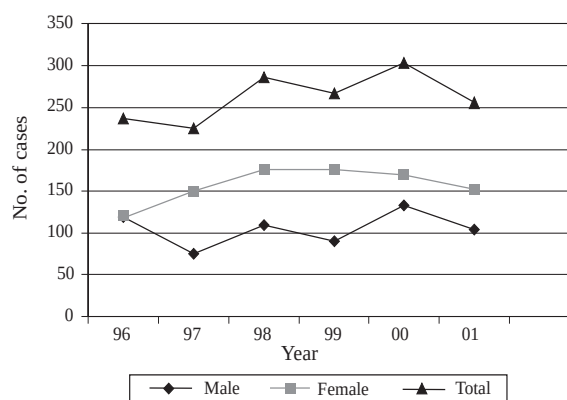


Fig. 3. STI incidence in persons 10 to 19 years of age.

were also those that caused discharges, namely, chlamydia infection, gonorrhoea and vaginal candidiasis. In Singapore, as in other countries, *Chlamydia trachomatis* seems to be the STI most commonly associated with adolescents.

It must be remembered that the majority of chlamydia infections of the cervix, and a significant minority of cervical gonorrhoea infections, are asymptomatic. These infections are thus very likely to be significantly under-reported.

Furthermore, chlamydial infections are not notifiable in Singapore, and population-based screening using the

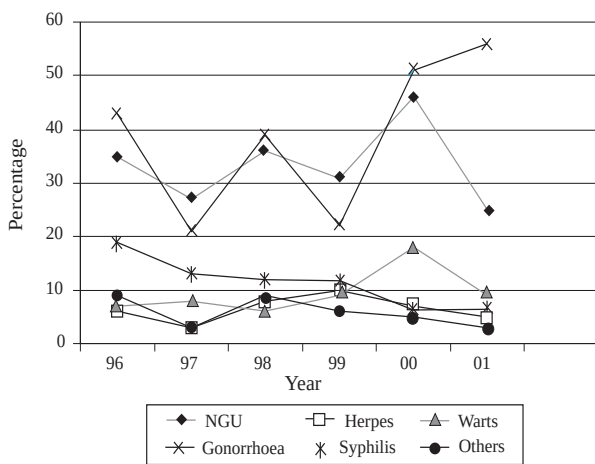


Fig. 4. Percentage of STI incidence in aged males 10 to 19 years by type of STI.

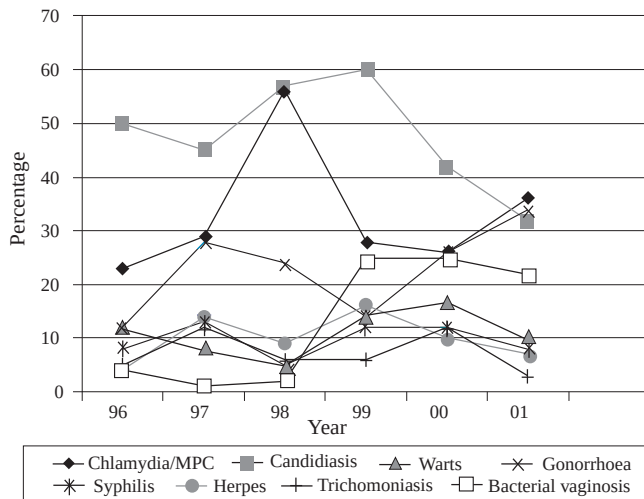


Fig. 5. Percentage of STI incidence in females aged 10 to 19 years by type of STI.

accurate and sensitive nucleic acid amplification tests have not been introduced and used to any significant extent. The previous gold standard of cell culture is also no longer performed by the two main reference microbiology laboratories locally. Therefore, *Chlamydia trachomatis* infections are likely to be significantly under-diagnosed.

Vaginal candidiasis is not usually regarded as a sexually transmitted infection. It is included in the figures above for completeness. If cases of vaginal candidiasis are removed from the total number in STI, the male to female infections will become approximately equal in number.

The Joint United Nations Programme on HIV/AIDS (UNAIDS) has cited young people to be especially vulnerable to HIV infection. This is due to risky sexual behaviour or substance use, lack of access to HIV information and prevention services, or a host of social and

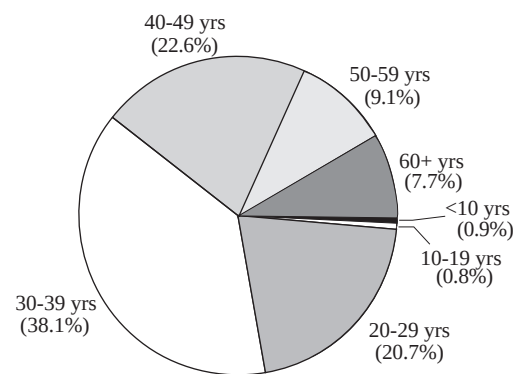


Fig. 6. HIV/AIDS-infected Singaporeans by age groups (1985 to 2001).

economic reasons. It estimates that there are 11.8 million young people aged 15 to 24 years living with HIV/AIDS, and that about half of all new adult infections, of which there are about 6000 daily, are occurring among young people.⁶

From 1985 till the end of 2001, a total of 1599 Singaporeans were diagnosed with HIV/AIDS.⁷ Of these, 590 had died and, of those alive, 380 had progressed to AIDS. In 2001, 237 Singaporeans were diagnosed with HIV infection (including AIDS), slightly more than the 226 diagnosed in 2000.

Figure 6 shows the proportion of cumulative HIV infections by age groups at diagnosis from 1985 to 2001. There have been 12 infections detected in individuals aged 10 to 19 years. This forms 0.8% of the total of 1599 HIV infections diagnosed among Singaporeans. Gender-specific percentages were 0.6% for males and 1.5% for females aged 10 to 19 years. Although these numbers are small, it should be remembered that the actual age of infection of most, if not all, individuals diagnosed with HIV is not known. Therefore, a person diagnosed with HIV at the age of 26 may have contracted the infection when he or she was 18 years old.

Obstacles to STI/HIV Information, Health Seeking Behaviour and Care

The taboo nature of STI and HIV/AIDS often makes discussion of these topics difficult. Clores² found that 1 in 3 respondents agreed with the statement that it would be embarrassing to discuss STI/AIDS with their partners if they were sexually active, and another 1 in 3 were not sure of their reply. This has an impact on their ability to negotiate for protected sexual intercourse when faced with the situation when sex may occur.

Adolescents may face additional problems in accessing timely and reliable medical care when they are experiencing symptoms of an infection. Firstly, they may not know where to go and who to turn to for medical help. Secondly,

they may be fearful of losing their confidentiality and privacy when seeking medical help. Current guidelines are unclear with respect to the investigations and treatment of adolescents below the age of 16 years without parental consent. Thirdly, they may have difficulties paying for medical care.

Situations have been encountered where adolescents under the age of 16 have been denied medical care because they refused to attend with their parent or guardian. Fortunately, such instances are few and far between. Healthcare workers may also be faced with the dilemma of maintaining privacy and confidentiality of their patients on the one hand and involving the parents or guardian on the other; doing the latter may jeopardise efforts by any provider to provide counselling and treatment in future.

Approaches to Improved Information, Prevention and Care

Clores² reported that the three main sources of information about sex from the 2369 respondents were schools (24.9%), friends (23.1%), and books (22.6%). However, when asked whom they would turn to regarding sexuality issues, teachers were ranked last (2.2% for sexuality issues and 1.9% for boy-girl relationships). The vast majority (92%) disagreed with the notion that sex education encourages sexual activities. In the study by Lee et al⁴ on adolescents attending the STI clinic, 45% cited friends as the main source of information on sex, and 27% learnt about sex from the school curriculum.

In a review of the impact of HIV and sexual health education on the sexual behaviour of young people,⁸ UNAIDS evaluated 53 studies and found that HIV/AIDS and sexual health education neither increased nor decreased sexual activity in 27 of them, and 22 reported that such education either delayed the onset of sexual activity, or reduced the number of sexual partners, unplanned pregnancies and STI rate.

Therefore, school-based programmes dealing with sexuality must be strengthened to reach out to the vast majority of adolescents who are attending school. In 2000, the Ministry of Education launched a new programme "Growing Years", which addresses issues surrounding sexuality among school-going youth. We await the results of the evaluation of this programme. Out-of-school youth, those from broken families, and those in shelters and hostels may be at greater risk of high-risk behaviours, and they will require targeted and tailored programmes.

The following characteristics of effective education programmes for youth have been described.¹ They should

have (1) a narrow focus on reducing specific risky behaviours; (2) a theoretical grounding in social learning theory, social influencing theory, or theory of reasoned action; (3) a variety of interactive teaching methods designed to encourage the participants to personalize the information; (4) activities to convey the risks of unprotected sex and how to avoid them; (5) instruction on social pressures and how to deal with them; (6) clear reinforcement of individual values and group norms appropriate to the age and experience of the pupils; (7) opportunities to practice communication and negotiation skills to increase confidence; and (8) effective training for individuals implementing the programme.

The DSC has embarked on new programmes and activities to reach out to young people. These include launching a bilingual website (<http://www.dsc-sexualhealth.com.sg/>) designed with young people in mind. The site aims to provide reliable and updated STI/HIV information in an anonymous manner. The DSC is also distributing, at locations frequented by young people, free postcards containing information on the website, telephone counselling numbers and where to seek further counselling and consultation. We have also established contact with voluntary welfare homes for young persons and the Ministry of Community Development and Sports to provide information to staff and adolescents.

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