Commentary

Human Immunodeficiency Virus (HIV) Prevention Education in Singapore: Challenges for the Future

Mee Lian Wong, [1]*MPH, MD, FFPH*, Priya Sen, [2]*MBBS, FRCP, BSc (Hons)*, Christina M Wong, [1,5]*PhD, MPH*, Sylvia Tjahjadi, [1]*BBehavSc*, Mandy Govender, [3]*MBA, BA (Hons)*, Ting Ting Koh, [1]*BSc (Nursing)*, Zarina Yusof, [3]*MIC, BA*, Ling Chew, [3]*MBBS, MSc PH*, Avin Tan, [4], Vijaya K, [3] *MBBS, MSc PH*

Abstract

We reviewed the current human immunodeficiency virus (HIV) prevention education programmes in Singapore, discussed the challenges faced and proposed prevention education interventions for the future. Education programmes on HIV prevention have shown some success as seen by reduced visits to sex workers among the general adult population and a marked increase in condom use among brothel-based sex workers. However, we still face many challenges such as low awareness of HIV preventive strategies and high prevalence of HIV stigma in the general population. Voluntary HIV testing and condom use remain low among the priority groups such as men who have sex with men (MSM) and heterosexual men who buy sex. Casual sex has increased markedly from 1.1% in 1989 to 17.4% in 2007 among heterosexuals in Singapore, with the majority (84%) practising unprotected sex. Sex workers have moved from brothels to entertainment venues where sex work is mostly hidden with lack of access to sexually transmitted infections (STIs)/ HIV prevention education and treatment programmes. Education programmes promoting early voluntary testing is hampered because of poor access, high cost and stigma towards people living with HIV. It remains a challenge to promote abstinence and consistent condom use in casual and steady sexual relationships among heterosexuals and MSM. New ways to promote condom use by using a positive appeal about its pleasure enhancing effects rather than the traditional disease-oriented approach should be explored. Education programmes promoting early voluntary testing and acceptance of HIV-infected persons should be scaled up and integrated into the general preventive health services.

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Introduction

There are currently an estimated 34 million people living with human immunodeficiency virus (HIV) worldwide.[1] In Singapore, the cumulative total of HIV-infected Singapore residents is 5306 as of end 2011.[2] Between 1991 and 1998, the incidence of reported cases of HIV and AIDS increased rapidly from 15 per million to 62.6 per million before stabilising from 1999 to 2003. Since 2003, the incidence has increased steadily again from 71.9 per million to 125.2 per million in 2008,[3] with a slight drop to 121.7 per million in 2011.[2] Between 1985 and 1990, homosexual transmission was the main mode of transmission.[4] After 1990, heterosexual transmission from sex workers as the main source took over as the main transmission route[5] till 2011 when the homosexual (including bisexual transmission) route again accounted for the majority (51%) of sexual transmission.[2] In 2011, 93% of the new cases were males, and half of all new cases reported were aged between 30 to 49 years old. Approximately 67% were single, 25% were married and 7% were divorced or separated.[2] The epidemiology of sexually transmitted infections (STIs) gives an indication of the seriousness of the HIV situation because STIs facilitate the transmission of HIV. In recent years, the incidence of STIs has risen from 155 per 100,000 population in 2000 to 215 per 100,000 population in 2011,[3] representing an increase of almost 50%. There has also been a rapid rise in STIs among youths aged 10 to 19 years old from 238 cases in 2002 to a peak of 820 cases in 2007 with

[1]Saw Swee Hock School Public Health, National University of Singapore and National University Health System, Singapore
[2]Department of STI Control, National Skin Centre, Singapore
[3]Health Promotion Board
[4]Action for AIDS
[5]FHI 360, Research Triangle Park, NC, USA
Address for correspondence: Dr Mee-Lian Wong, Saw Swee Hock School of Public Health (MD 3), National University of Singapore, 16, Medical Drive, Singapore 117597.
Email: mee_lian_wong@nuhs.edu.sg

a decline to 619 cases in 2010.[6]

The rising trends in STIs and HIV among Singapore residents corroborate with an increase in sexual risk behaviours among them. The percentage of heterosexual Singapore residents engaging in sexual risk behaviour (defined as having commercial and/or casual sexual exposures) has increased from 4.7% in 1989[7] to 18.5% in 2007.[8] The nature of sexual risk-taking among them has also changed from a preponderance with commercial sex partners 2 decades ago to casual sex partners presently.[8] Further evidence of the change in partner type came from local surveillance data which showed that female casual partners have replaced female sex workers as the biggest group of primary contacts of STIs in Singapore.[9,10] Given the current STIs/HIV epidemiology and behavioural trends in Singapore, there is an urgent need to scale up and intensify HIV prevention efforts for heterosexual men and women, men who have sex with men (MSM), youths and female sex workers.

Over the past decade, AIDS/HIV prevention science and research has advanced dramatically. The most effective approach to effective HIV prevention requires a combination of behavioural, and biomedical interventions, supported by structural interventions.[11] Education programmes on HIV prevention are aimed at effecting behavioural changes related to abstinence or delayed sexual initiation till marriage, partner reduction, condom use, screening and early treatment of STIs/HIV and compliance with antiretroviral medications. We review current HIV prevention education programmes in Singapore, discuss some of the challenges and issues faced and propose preventive education interventions for the future.

Current HIV Education Programmes in Singapore

Singapore implemented the multidisciplinary National AIDS Control Programme in 1985 when the first local case of HIV infection was reported. The strategies included (i) protection of the supply of blood and blood products by screening all blood donors for HIV; (ii) health education (iii) medical screening of foreign nationals seeking employment here; (iv) epidemiologic surveillance and research, and defaulter and contact-tracing by maintenance of a central HIV/AIDS registry; (v) centralised management of patients with HIV/AIDS; and (vi) supportive legislation for public health control measures. HIV anonymous testing was introduced in 1991 by the non-governmental organisation, Action for AIDS (AfA) and there are currently 7 anonymous HIV test sites in Singapore.[12] Education programmes promoting safer sex practices are currently being implemented for adults, youths and sex workers by governmental, private and non-governmental agencies (Figs. 1 and 2).

Adult Population

This group includes the general population and at-risk groups such as heterosexuals and homosexuals engaging in paid and/or casual sex. Public education programmes targeted at the general population are implemented by the Health Promotion Board (HPB) in the community and at the workplace.[12] These programmes which adopt mainstream values with the key message "remain faithful to spouse"

Fig. 1. Past and present health education messages for safer sex.

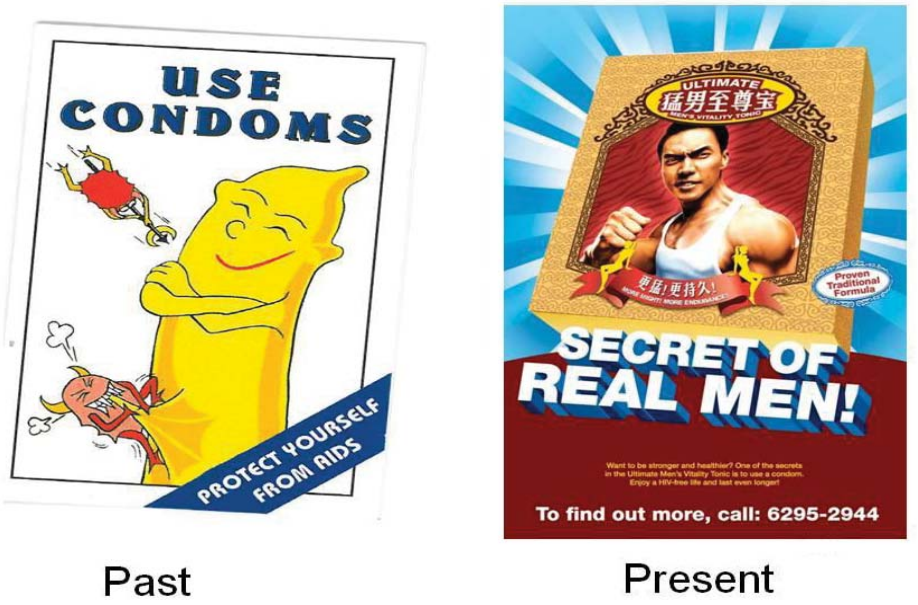

Fig. 2. Past and present health education messages on condom promotion.

aim to increase awareness on modes of transmission, dispel common misconceptions of the disease and provide education on ways to prevent HIV infection. In addition, they also promote HIV testing among persons engaging in paid and casual sex by informing about the benefits of regular HIV testing and early detection. Various types of media such as exhibitions, talks, printed materials and recently, entertainment education such as TV drama serials in multiple languages have been used to reach out to the general population.

Education programmes for MSM are mainly implemented by AfA. This organisation has spearheaded many innovative programmes since 1990, using very creative and innovative messages[13] to increase awareness of symptoms of STIs and to promote STIs/HIV testing and safer sex practices such as condom use and partner reduction as an individual and collective responsibility. These messages are disseminated to MSM through outreach educational activities combined with social events at gay establishments such as pubs, bars and saunas. Free condoms are distributed regularly and condom vending machines have been installed in some of these establishments. Free HIV testing is also provided at these entertainment establishments. Online websites and MSM counselling hotlines are other channels that have been used to reach MSM. In 2007, non-governmental organisations partnered with the government to hold public concerts for the gay community to increase HIV awareness.[14] In recent years, education programmes targeting young MSM have also been implemented. These include risk reduction workshops incorporated into photography and dance activities, and educational activities to intercept young MSM on online chat rooms.[15] A non-governmental organisation, Oogachaga, was formed recently to provide online information on STIs/HIV symptoms, HIV testing and safer sex practices for the lesbian, gay, bisexual, transsexual and questioning (LGBTQ) community. Counselling is provided online, face to face and through its hotlines.[16]

Youth Population

Education programmes on STIs/HIV for youth are currently being implemented by the Health Promotion Board (HPB), Ministry of Education (MOE), Department of STI Control (DSC) and other non-governmental organisations like the Singapore Planned Parenthood Association. MOE implemented the sexuality education programme "The Growing Years" for primary 5 to Junior College students in 2000. The Breaking Down Barriers STIs/AIDS prevention programme, jointly developed by HPB, MOE and the Ministry of Health (MOH), was implemented in 2007. These programmes provide students with knowledge about the causes, consequences and prevention of STIs/HIV and equip them with life-skills such as decision-making and assertiveness through multimedia presentations, games, group discussions and role-plays. In July 2012, major innovative changes were made to the sexuality education curriculum to respond to trends involving social media where students are now more exposed to non-mainstream views on sex which may adversely affect their sexual health.[17] Children are also reaching puberty earlier than in the past. The changes included teaching students on dating and romantic relationships from a younger age—around 11 instead of 13; guarding against sex predators on social media and resisting peer pressure to engage in sex.

Peer-led initiatives through various platforms, such as Stomp AIDS Challenge and the Youth Advolution for Health (YAH) Programme were introduced recently to youth in polytechnics, universities and community venues popular with youth, where they were encouraged to engage their peers and disseminate messages on STIs/HIV. In 2010, HPB implemented small group interactive workshops for at-risk youth in 'boys' and 'girls' homes and out-of-school youth in community settings through faith-based and other organisations to increase their awareness about STIs/HIV and help them learn life-skills and skills on how to protect themselves from HIV.[18]

The DSC Clinic provides counselling for sexually active adolescent patients attending the clinic, holds talks for youth at voluntary welfare homes, provides STI/HIV information for youth via their bilingual website and trains sexuality education counsellors through workshops conducted by MOE.[19] The Singapore Planned Parenthood Association conducts public education talks to promote sexual and reproductive health awareness and counsels adolescents on sexual health issues.[20] Parents are also provided with resources and equipped with skills to confidently talk to their children about sexuality issues by HPB. The "Love them. Talk about Sex" Programme, implemented in 2008, is conducted for parents at the workplaces, schools and other community settings.[21]

Sex worker population

All brothel-based sex workers are required under the Medical Surveillance Scheme set up in 1976 to undergo regular screening and treatment for STIs and HIV at the DSC clinic and designated general practice clinics.[22] They are also required to attend talks on STIs/HIV and skills development sessions on condom use and negotiation strategies at the DSC Clinic. Programme activities for brothel management include talks on STIs/HIV and distribution of posters on 100% condom use for both vaginal and oral sex for mandatory display in brothels. Free condoms are given to all clients in the brothels. These programmes have led to sustained high levels of consistent condom use of more than 90% for vaginal and oral sex with corresponding declines in cervical and pharyngeal gonorrhoea incidence rates to less than 5 per 1000 person per month.[22,23] Since 2003, except for one case reported in 2009, no cases of HIV have been reported among the brothel-based sex workers.[23]

DSC also implements outreach educational activities for street-based sex workers including the establishment of a drop-in centre in Geylang for informal support network, STIs information and skills training in condom negotiation and condom use. Free condoms and screening vouchers at a reduced cost are also provided to them for use at designated clinics. Project Masseuse on STIs/HIV prevention was started in the nineties for female masseuses. In 2006, a policy was introduced where all massage workers have to undergo screening for STIs annually.[24]

Challenges And the Future of HIV Prevention Education in Singapore

The many HIV prevention educational efforts have demonstrated success in some areas. For example, the percentage of men who reported having had commercial sex in the preceding year decreased from 7.6% in 1989[7] to 2.7%[8] in 2007. This may be partly attributed to the public health campaign in 1992, which sought to allay misconceptions such as the existence of "virgin" prostitutes and secret potions used to prevent HIV, as well as the public health campaign in 1995 which discouraged men from going for sex tours overseas.[25] Educational and behavioural interventions targeting brothel-based sex workers have also led to a sustained marked increase in consistent condom use with clients to more than 90% and a corroborative decline in STIs.[22,23] However, there are other challenges which need attention. Voluntary testing for HIV[2] and condom use are still low among priority groups such as MSM,[26] and heterosexual men engaging in paid and casual sex.[8] HIV awareness of preventive strategies is low[27] and stigma and discriminating attitudes are still prevalent in the general population.[28] Globalisation, changing socio-economic trends and exposure to media influences have also led to changes in morals and sexual behaviours which may predispose to HIV transmission. The percentage of heterosexual men and women who reported having had sex with casual partners in the preceding year has increased markedly by almost 16-fold from 1.1% in 1989[7] to 17.4% in 2007.[8] Casual sex is prevalent among both males (22.5%) and females (12.8 %).[8] Sex workers have also moved from traditional brothel settings to entertainment venues such as karaokes, nightclubs and pubs where sex work is mostly illegal and hidden with lack of access to STIs/HIV prevention, screening and treatment programmes. We discuss these challenges and propose HIV education strategies to address them.

Adult Population

General Population and Heterosexual Men and Women

Awareness promotion: The first National Behavioural Surveillance Survey conducted in 2007 on 1768 respondents aged 18 to 69 years in the general population showed that a significant proportion of 33.4% was not aware that a person infected with HIV can still look healthy and only 36.6% were aware of all the 3 HIV preventive strategies of abstaining from casual sex, being faithful to one uninfected sexual

partner, and correct and consistent condom use during sexual intercourse (ABC strategies).[27] There is a need to increase awareness to a wider population that a HIV-infected person can look healthy and for more explicit public education of the ABCs to prevent HIV/AIDS. The public consists of people of diverse educational and cultural backgrounds, motivations, values, and risky sexual behaviours. We need to cater to different segments of the audience by developing appealing messages for different groups and reaching them through a wide variety of media channels and languages.

Education on HIV prevention: The 2007 National Behavioural Surveillance Survey[8] showed that some groups are emerging to be at higher risk of engaging in sexual risk behaviours. They were more likely to be male, of younger age, single, without any religious affiliation, and of higher socio-economic standing. The percentage of young women engaging in casual sex has also increased markedly by 66-fold from 0.2% in 1989 to 13.2% in 2007 compared to men (9.6% to 24.2%). The high levels of casual sex among single men and women could be attributed to rising educational levels among women as well as the rising rates of non-marriage and delayed marriage in Singapore. It is important but not realistic to solely promote abstinence before marriage to this group. While we promote abstinence as the preferred choice, condom use and reduction in number of sexual partners or monogamy should be emphasised to them too.

The 2007 survey also found low levels of condom use among heterosexual men and women in Singapore. Less than a fifth (17.4%) of those who engaged in casual and commercial sex reported consistent condom use in 2007.[8] About 2 decades ago in 1989, it was higher at 27.6%.[7] Condom use in the 2007 survey was found to be much lower for casual sex than for commercial sex relationships (15.7% vs. 68.2%),[8] a finding which was similar to other countries.[29] The breakdown of condom use by casual and commercial sex was not reported in the 1989 survey. The decrease in condom use for sexual risk behaviours over the past 20 years could be due to the marked increase in casual sex. Worldwide, the poor results of promotion efforts to encourage consistent condom use within casual and regular partnerships highlight this as one of the major challenges in condom promotion. New ways to promote condom use by using a positive appeal should be explored. The message "use condoms to prevent HIV" is currently used most often in HIV education programmes. This disease-orientated message may not be effective in persuading men to use condoms because their main reason for not using a condom was that it reduced pleasure.[30,31] Men often do not think about disease during their sexual encounters. There is some evidence of success in promoting the pleasurable aspects of condom use in some countries. A water-based lubricant sachet packaged with 2 condoms which was introduced in Cambodia, with the key message that it reduced friction and enhanced pleasure, has led to an increase in condom use.[32] A similar appeal of using condoms to enhance pleasure, enable long-lasting intercourse, and protect the family should be explored in Singapore. The general community may find such messages unacceptable if they are disseminated via the mass media because they may be perceived as condoning promiscuity and antagonising moral values. Given these barriers, the cultural appropriateness and acceptability of these strategies should be assessed first by conducting focus groups with the community before implementing these initiatives in phases, starting in localities with the least resistance.

Messages on condom use will not lead to an increase in condom use if there is no easy access to condoms or barriers exist in procuring them. Condoms should be made available not only in venues such as entertainment establishments and budget hotels but also at public toilets in airports and ferry terminals. The latter venues would enable Singaporean travellers to obtain condoms. A local study has found that Singaporean men were less likely to use condoms when they travel overseas.[30] Condoms should also be placed in less conspicuous places like the toiletries section in pharmacies and convenience stores rather than being displayed at the counter to reduce the embarrassment for people buying condoms.

Education to encourage early testing and treatment for HIV: Voluntary HIV testing does not appear to be well-received by the public. Only 14% of HIV cases were detected as a result of voluntary HIV screening, with a higher proportion of homosexuals/bisexuals compared to heterosexuals (23% vs 4%) being detected via this route. Furthermore, more than half (58%) of the new cases in 2011 had late-stage HIV infection at the point of diagnosis.[2] An unlinked anonymous HIV seroprevalence survey in public hospitals by MOH in 2007 showed that the prevalence of undiagnosed HIV infection was 0.28%; this means that 1 out of 350 patients was unaware of their HIV-positive status before the survey.[33] There is evidence that persons who are aware of their HIV-positive status substantially decrease their risk behaviours, hence leading to a significant reduction in transmission of HIV.[34] Educational programmes to encourage early testing and treatment should be scaled up so as to reduce this pool of HIV infection which may be a source of spread to the community. Possible reasons preventing people from going for early voluntary screening are stigma, unawareness of the benefits of early testing and treatment and concerns about the undesirable consequences of finding out about their HIV-positive status such as loss of employment or family discord. Stigmatizing attitudes

toward people living with HIV/AIDS (PLHIV) are still highly prevalent in the community and even among health professionals.[28] Education programmes to reduce stigma and promote their acceptance by the community, workplaces and employers should be scaled up concurrently. Staff manning sites for anonymous HIV testing and treatment need to be reinforced with training on how to manage sensitivities around handling a person with HIV and referring them where appropriate to support groups and organisations.

Presently, telephone counselling is available through AIDS and STIs helplines provided by AfA and DSC. However, these helplines are unavailable at night. We propose 24-hour hotlines so that such services are available at any time to those in need. Recruiting PLHIV who are coping very well with their conditions as part-timers or volunteers to man such services after office hours would help to reduce the cost of maintaining the hotlines. Further, PLHIV's success in coping with their HIV condition would be a great encouragement and source of support to people calling for assistance via these helplines. Useful and timely information on post exposure prophylaxis for HIV infection may also be provided by these hotlines.

Men Who Have Sex with Men

The internet survey with 1994 MSM in 2009 by Fridae.com found a high prevalence of risky sexual behaviours among them, with about two-thirds (64%) engaging in unprotected anal intercourse with regular partners and 42% with casual partners in the last 6 months preceding the survey.[15] These figures are higher when compared to an earlier internet survey conducted on 1479 MSM in 2006, which found 51% respondents reporting unprotected anal intercourse with regular partners/boyfriends and 33% with casual partners during the last 3 months preceding the survey.[15] Although the 2 studies may not be comparable because of the difference in the time periods for which information on condom use was ascertained, the fact remains that unprotected sex is still highly prevalent among MSM in Singapore. In addition to condom promotion, other strategies such as early voluntary testing and treatment and pre-exposure prophylaxis should be considered. AfA's educational efforts have succeeded in achieving an almost ten-fold increase in HIV testing among MSM in the last 10 years—from 258 men in 1998 to 2248 men in 2008.[13] A higher proportion of homosexuals/bisexuals had their HIV infection detected via voluntary screening compared to heterosexuals (23% vs 4%).[2] It is unclear whether the higher numbers of HIV cases among MSM compared to heterosexual men notified in 2011 was a true increase or due to their higher screening uptake. Notwithstanding these findings, only about half (49%) of MSM had an HIV test during the past 12 months.[27] This is lower than the testing rates in the United States[35] and Australia[36] where more than 60% of MSM had been tested in the last 12 months. Future education programmes for MSM should focus on promotion of early and regular testing especially among those with ongoing risk of infection resulting from continual engagement in unprotected anal sex. Stigma, discrimination and criminalisation of sex between men hinder access to comprehensive information on HIV prevention and assessment of educational needs of MSM. It is imperative to decriminalise homosexuality so as to increase the numbers who would come forward for education workshops, early testing and treatment.

Another finding of concern is the high prevalence of HIV-risk related behaviours among MSM under 20 years of age. Compared to other age groups of MSM, they were least likely to have gone for HIV testing and most likely to have more than 5 sex partners. More than 80% among them compared to less than 50% of those aged 20 years and older have never been tested for HIV. About 20% of them compared to less than 10% of older MSM have more than 5 sex partners.[26] More qualitative research is needed to understand the relationship patterns and educational needs, especially the preferred channels of communication among young MSM so that we can ensure cultural and linguistic appropriateness of educational activities when designing education programmes for them.

Youth Population

A survey in 2006 on 4000 students aged between 14 and 19 years old found that 8% were sexually active.[37] Another study in 2008 on adolescents found that exposure to pornography was strongly associated with sexual initiation among them.[38] Furthermore, one quarter reported that it is okay to engage in premarital sex, and 50% of boys and 35% of girls reported that they were not confident of resisting peer pressure to engage in sex. In addition, almost half of the girls (43.2%) and about one third (31.7%) of the boys reported that they did not intend to have sex in the first place but engaged in sex subsequently because they could not control themselves (21% males, 13% females), lacked the skills to say no (4% males, 13% females) or were under the influence of alcohol or drugs (6.1% males, 10% females). Young people should be nurtured with values pertaining to self-respect and self-responsibility. In addition, they should be equipped with skills on managing their emotions, resisting peer pressure to engage in sex and avoiding situational factors that may lead to sex. More importantly, they need to gain self-awareness and independence to make informed choices and skills to negotiate condoms use if they choose to engage in sex. The recent modification of the refreshed sexuality education curriculum for primary and secondary schools as well as junior colleges by the MOE, with input from HPB, is most timely as it addresses most of the abovementioned issues.

The programme should be monitored closely to identify any barriers to its implementation and evaluated to assess its impact.

Parents have an important role to play in sexuality education. Studies have shown that adolescents whose parents effectively communicate about sex are more likely to delay sex, have fewer partners, and use contraception if they do have sex.[39] A nationwide community-based household survey[40] conducted between 2008 and 2009 found that the majority (80%) of parents and caregivers felt it is important to talk to their adolescent children aged 10 to 17 year old about sexual issues on abstinence, consequences of premarital sex and condom use. However, a much lower percentage (60%) felt comfortable and confident discussing these issues with them. Consequently, this leads to a low frequency of caregiver-child sexuality communication, with only 8.3% of caregivers discussing sexual health issues with their children very often and 37.2% sometimes in the past year. Programmes to equip caregivers with skills and provide them with education resources to enable them to talk to their adolescent children about sexuality should be intensified.

Sex Worker Population

Although the HIV prevention project for brothel-based sex workers has been effective in increasing condom use,[22,23] we face new challenges because of the changing profile of sex work in Singapore. Sex workers have increasingly moved from brothels to the streets, and particularly to entertainment establishments such as karaoke lounges, bars, pubs, night clubs and discothèques. A survey of female entertainment workers, using mystery clients between 2008 and 2009 found a high prevalence (71%) of sexual services in entertainment establishments with 53% of the female entertainment workers reporting selling sex and 23% engaging in casual sex. All of them were from Asian countries and only half used condoms consistently and less than 22% had ever been screened for STIs in Singapore.[41] These sex workers working from entertainment establishments pose a higher risk than registered brothel-based sex workers in transmitting STIs to their clients and casual partners in Singapore because of their lower levels of condom use and STI screening, higher STI rates, and larger numbers (estimated 2561 vs 680) locally.[41] The illegality, hidden nature and foreign status of sex workers with short-term stays in entertainment establishments in Singapore make it challenging to target prevention programmes at them. It is impractical to rely solely on punitive measures such as staging raids, given the complex economic and environmental factors which have led to the continual influx of foreign women engaging in sex work in entertainment establishments in Singapore. Based on the experience of other countries, demolition of red light areas have driven sex workers underground and have led to the fragmentation of HIV preventive services and an increase in higher risk behaviours that are less conducive to HIV prevention.[42] We need to implement some immediate measures to increase their access to STI screening and treatment services and culturally appropriate outreach education programmes by working with general practitioners and non-governmental agencies such as AfA. Entertainment workers and street-based sex workers have often expressed their fear of carrying condoms because they may be used as evidence of prostitution. The implementation of a policy prohibiting the carriage of a condom as evidence of prostitution should be considered.

Conclusion

Education programmes on HIV prevention have shown some success as seen by a decline in the visits to sex workers among the general adult population over the past 2 decades [8,9] and a marked increase in condom use among brothel-based sex workers.[22,23] Nevertheless, we still face many challenges. First, casual sex has increased markedly from 1.1% in 1989 to 17.4% in 2007 among heterosexuals in Singapore. Second, condom use remains low among priority groups such as MSM and heterosexual men engaging in casual and paid sex. It continues to be a challenge to promote abstinence and consistent condom use in casual and steady sexual relationships among both heterosexuals and MSM. New ways to promote condom use by using a positive appeal about its pleasure enhancing effects rather than the traditional disease-oriented approach should be explored. In addition, HIV prevention strategies should move beyond the "ABC" strategy to explore the feasibility and acceptability for use in the local context, of new HIV biomedical prevention strategies that are emerging as part of an integrated HIV prevention approach. These strategies include medical male circumcision; pre-exposure prophylaxis,[43] and; antiretroviral microbicides[44] for women.

The other important challenge pertains to low rates of voluntary testing among MSM and heterosexuals engaging in casual and paid sex. The effectiveness of education programmes promoting voluntary early testing is presently hampered by structural factors such as access, cost and stigma towards people living with HIV in the community and workplaces. Education programmes promoting testing and acceptance of HIV-infected persons should be integrated into general preventive health services. More structural interventions also need to be put in place to complement education programmes in promoting access to condoms and HIV screening and treatment services. Finally, close monitoring and evaluation should be incorporated in all education programmes to assess their impact and to identify ways to improve programme performance.

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