Original Article

Do Parents Talk to Their Adolescent Children about Sex?—Findings from a Community Survey in Singapore

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Abstract

Introduction: Sexually transmitted infections have increased sharply among adolescents both locally and internationally in recent years. Parents play an important role in their children's sexual health development. An integral part of this includes effective parent-child sexuality communication. Materials and Methods: A nationwide cross-sectional community-based household survey was conducted in Singapore between August 2008 and March 2009 to assess parents'/caregivers' attitudes and practices regarding caregiver-child sexuality communication. With an overall response rate of 81.4%, 1169 questionnaires from parents/caregivers of children aged 10 to 17 years were analysed. Results: Almost all (94.2%) the caregivers were parents. A majority (>80%) of caregivers considered talking to their children about sexuality issues such as abstinence, consequences of premarital sex and condom use as important. However, a significantly lower percentage (about 60%) felt comfortable and confident doing so. Only 8.3% among them discussed sexual health issues with their children very often, 37.2% sometimes, 22.0% seldom/hardly ever (once or twice) and 32.5% never, in the past year. In the multivariate analysis, caregiver-child sexuality communication was significantly associated with caregivers' relationship to children, ethnicity, educational level, and their perceived levels of comfort and confidence in sexuality communication. Conclusion: Caregivers generally felt it was important but were significantly much less comfortable and confident talking about sexuality issues with their children, which leads to a lower frequency of caregiver-child sexuality communication. Educational programmes on adolescent sexual health targeting parents/caregivers are needed. They must be equipped with skills and provided with resources to enable them to talk to their adolescent children about sexuality.

Ann Acad Med Singapore 2012;41:239-46

Key words: Abstinence, Condom use, Confidence level, Importance, Parent-child sexuality communication

Introduction

HIV/AIDS is now the third leading cause of disease burden worldwide.[1] Risky sexual behaviours acquired during adolescence, such as early sexual initiation, unprotected intercourse, and multiple sexual partners, can place young people at risk of HIV infections and sexually transmitted infections (STIs). About 50% of new HIV infections and 30% of new STIs worldwide occur among youth aged 15 to 24 years.[2] In Singapore, there has been a sharp increase in the incidence of STIs among adolescents aged 10 to 19 years from 250 cases (3.1% of total cases) in 2002 to 787 (7% of total cases) in 2008.[3] Recent studies on adolescents' attitudes towards sex in Asian countries found a permissive attitude on premarital sex. For example, 45.1% of male and 27.5% of female college students in Shanghai, China were open to premarital sex.[4] One-third of Indian male youth reported that it was acceptable to engage in premarital sex.[5] It was also found that adolescents who had permissive attitudes regarding sex were more likely to engage in risky sexual behaviours in future.[6-8]

Parents play an important role in shaping the health behaviours of their children through their practices, parenting styles or parental modelling. Adolescents who

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reported engaging in premarital sex or unprotected sex were found to have poor parent-child sexuality communication.[8-12] Although the most frequently reported sexual information source were friends, teachers, mothers and media, mothers in particular were found to play a central role in sexuality communication and education. Adolescents who discussed sexual topics with their mothers were more likely to have conservative values about sexual intercourse,[13-15] while those who discussed with their friends or received information from media had more liberal sexual values and were more likely to initiate sexual intercourse.[13,15,16] Teachers were not associated with changes in adolescents' sexuality behaviours and the impact of sex education in schools is inconsistent and debatable both locally and internationally.[15,17]

Thus, assessing parents' attitudes regarding sexual health and their communication with their children in this area is crucial for their sexual health development. Many studies have been done in the last 3 decades to assess factors associated with parent-child communication about sexuality but findings were inconsistent.[18,19] To date, data are lacking on parental perceptions, attitudes and practices on sexuality issues concerning their adolescent children in Singapore. Therefore, a nationwide community survey was conducted to assess parental attitudes and practices about talking to their adolescent children on sexuality issues. The findings will provide pertinent information for planning appropriate intervention programmes for parents to prevent and reduce risky sexual behaviours among their children.

Materials and Methods

A nationwide cross-sectional community-based household survey was conducted between August 2008 and March 2009 among Singapore citizen or permanent resident parents or primary caregivers of children aged 4 to 17 years to assess their perceptions, attitudes and practices regarding health-related domains such as diet, physical activity, smoking and sexual behaviour of their children. This article, as part of a larger study, presents the results of attitudes and communication practices regarding their children's sexuality issues among parents of children aged 10 to 17 years. The lower age range was set at 10 years because puberty usually starts around 11 or 12 years of age. Hence, parents can help their children prepare for this important stage of sexual development.[20]

A proportional stratified random sample of 3500 household units was selected from a sampling frame of all households in Singapore and stratified by 3 housing types: 1 to 3 room HDB flats (23%), 4 to 5 room HDB flats (55%) and private condominium flats or houses (22%). The sampling frame was obtained from Singapore Department of Statistics. From each household, the parent or primary caregiver was selected for a face-to-face interview using a structured questionnaire administered by trained interviewers. The primary caregiver was defined as the person with the primary responsibility for providing supervision and care for the target child. The parent or adult caregiver with the most knowledge of the child and most involved in his/her parenting was selected as the respondent.

The overall response rate was 81.4%. Among HDB households, the response rate was 87.7%, while the response rate among private condominium and houses was 40%. The respondents and non-respondents differed by ethnicity and gender with Malays more likely than Chinese (85% vs 72%, P <0.001) and women more likely than men (80% vs 70%, P <0.001) to respond. However, respondents and non-respondents did not differ by size of the apartments (P = 0.66) among those residing in HDB apartments. In total, 1169 questionnaires from parents/caregivers of children aged 10 to17 years were analysed.

Data Collection

Caregivers' attitudes towards communication with their children about sexuality issues were assessed through the following questions: (i) "How important is it to talk to your child about (a) abstaining from sex till he/she is married; (b) the consequences of engaging in sex before marriage; (c) using condoms to protect from pregnancy; (d) using condoms to protect from disease e.g. HIV/AIDS and sexually transmitted diseases" (ii) "How comfortable would you feel talking to your child on each (a, b, c, d) of the above sexuality issues" and (iii) " How confident are you that you can answer their questions accurately if you talk to them about the above sexuality issues". The importance, comfort and confidence level were rated on an adapted visual analogue scale (VAS) from 1 to 10, in which "one" was defined as "not at all" while "ten" was defined as "very".

Caregivers' practice regarding parent-child sexuality communication was assessed by asking "In the last year, how often did you discuss with your child about sexuality issues like sexually transmitted disease, condom use or consequences of teenage sexual intercourse?". They were given the following frequency categories to choose from: 1. Never; 2. Seldom/hardly ever (once or twice); 3. Sometimes; 4. Very often."

Reliability Testing

As this was an interviewer-administered questionnaire, inter-rater reliability, which assesses the agreement between 2 interviewers, was assessed among 31 caregivers of children aged 10 to 17 years of different ethnicities and educational levels. For each respondent, 2 interviews were

conducted by 2 different interviewers with an interval of 2 weeks in between. Inter-interviewer intra-class correlation coefficients for parental attitudes towards parent-child sex communication ranged from fair to excellent correlation (0.38 to 0.86).

Internal consistency for the multi-item scale on levels of importance and comfort perceived by the caregivers about communicating with their adolescent children regarding sexuality issues was calculated for "importance" and "comfort" statements separately using Cronbach's Alpha (Table 1). Statements that addressed the caregivers' perceived importance about talking to their adolescents about sexuality issues showed a high internal consistency (Cronbach's Alpha = 0.84). Similarly, a very high Cronbach's Alpha (0.94) was obtained from statements in which caregivers' "comfort" in communicating with their adolescents about sexuality issues was assessed.

Table 1. Caregivers' Attitudes about Communicating on Sexuality Issues with Their Adolescents

	Cronbach's Alpha
Caregivers' multi-item scale on perceived *importance* level about communicating on sexuality issues with their adolescents	**0.84**
a. Abstaining from sex till you are married	
b. The consequences of engaging in sex before marriage	
c. Using condoms to protect from pregnancy	
d. Using condoms to protect from disease e.g HIV/AIDS and sexually transmitted diseases	
Caregivers' multi-time scale on perceived *comfort* level about communicating on sexuality issues with their adolescents	**0.94**
a. Abstaining from sex till you are married	
b. The consequences of engaging in sex before marriage	
c. Using condoms to protect from pregnancy	
d. Using condoms to protect from diseases e.g HIV/AIDS and sexually transmitted diseases	

Data Analysis

The attitude scores were analysed as a median score and also dichotomised into a 'No'—not important/comfortable/confident at all to quite important/comfortable/confident (≤5), and 'Yes'—important/comfortable/confident to very important/comfortable/confident (>5) response.

Chi-square test was used to compare differences in categorical or nominal variables such as age group and ethnicity. Non-parametric tests such as Wilcoxon rank sum test were utilised to compare median scores within 2 categories.

In the multivariate analysis, multiple logistic regression was applied to determine the independent factors significantly associated with communication on sexuality issues between parents/caregivers and children. Frequency of caregiver-child sexuality communication was dichotomised into 'Yes' (sometimes/very often) and 'No' (never/seldom/hardly ever) as the dependent variable. Independent variables with a statistical significance of ≤0.1 in bivariate analyses were entered into the logistic regression model by using backward elimination. All the independent variables were entered as binary variables. Ethnicity, educational level, monthly combined household income and occupational status were dichotomised into Malay vs non-Malay, completed secondary or high education ('Yes' vs 'No'), ≥$3000 vs <$3000 and health-related professionals ('Yes' vs 'No') respectively. Mean scores of perceived importance and comfort, and score of perceived confidence in sexuality communication were entered as continuous variables.

Results

Socio-demographic Characteristics of Caregivers and Children

As shown in Table 2, almost all (94.2%) of the caregivers were parents with majority (70%) being mothers. Almost all children (99.4%) were schooling. Chinese comprised the major ethnic group (66%) and nearly all (90%) caregivers were married. About 80% of the caregivers had attained a secondary school or higher certificate education. More than one-third of the caregivers were housewives and about half of the households had a combined household income of less than S$3000 per month.

Caregivers' Attitudes and Practices Regarding Caregiver-Child Sexuality Communication

Figure 1 shows the median scores of importance, comfort and confidence levels in communicating about sexual issues regarding abstinence, consequences of premarital intercourse and condom use. Although caregivers perceived talking to their children about sexuality issues as very important (range of median scores: 8 to 10 for the abovementioned sexuality issues), they were significantly less comfortable (range of median scores: 6 to 7) and less confident (median score: 6) talking about these issues (P <0.001).

On analysing their attitudes as a percentage, a majority (>79%) of caregivers considered talking about the following sexuality issues as important—abstinence till marriage (79.8%), consequences of premarital sex (83.2%), using condoms to protect from pregnancy (83.1%) and using condoms to protect from HIV/AIDS/STIs (86.4%).

Table 2. Socio-demographic Characteristics of Caregivers and Children in Households

	n (%)
Relationship to child	n = 1159
Mother	808 (69.7)
Father	284 (24.5)
Others*	67 (5.8)
Number of children from the same family	n = 1105
1	159 (14.4)
2	493 (44.6)
3	311 (28.1)
>3	142 (12.9)
Age of child (years)	n = 1161
10	149 (12.8)
11	167 (14.4)
12	163 (14.0)
13	139 (12.0)
14	150 (12.9)
15	130 (11.2)
16	140 (12.1)
17	123 (10.6)
Mean (SD)	13 (2.3)
Median (Range)	13 (7.0)
Schooling status of child	n = 1155
Total number of schooling children (%)	1148 (99.4)
10 years (number in school, % in school)	149 (100.0)
11 years (number in school, % in school)	165 (100.0)
12 years (number in school, % in school)	161 (99.4)
13 years (number in school, % in school)	138 (100.0)
14 years (number in school, % in school)	148 (99.3)
15 years (number in school, % in school)	127 (97.7)
16 years (number in school, % in school)	140 (100.0)
17 years (number in school, % in school)	120 (98.4)
Ethnicity	n = 1168
Chinese	771 (66.0)
Malay	235 (20.1)
Indian	130 (11.1)
Others†	32 (2.7)
Educational level	n = 1165
No schooling/not completed primary school	84 (7.2)
Completed primary school	176 (15.1)
Secondary school/Institute of Technical Education	550 (47.2)
Junior college/Polytechnic/Art school	177 (15.2)
University	178 (15.3)

Table 2. (Con't) Socio-demographic Characteristics of Caregivers and Children in Households

	n (%)
Type of residence	n = 1166
HDB 1 to 2 rooms	55 (4.7)
HDB 3 rooms	308 (26.4)
HDB 4 rooms	433 (37.1)
HDB 5 rooms/executive	283 (24.3)
Private condominium/ house	82 (7.0)
Others‡	5 (0.4)
Occupation	n = 1165
Legislators, senior officials and managers	53 (4.5)
Professionals (lawyer, engineer, accountant, pastor)	87 (7.5)
Health-related professionals	23 (2.0)
Teachers	51 (4.4)
Associate professionals and technicians	59 (5.0)
Clerical workers	86 (7.4)
Service workers and shop and market sales workers	100 (8.5)
Self-employed small business (provision shop, restaurant)	60 (5.2)
Hawker	26 (2.2)
Production craftsmen and related workers	29 (2.5)
Plant and machine operators	20 (1.7)
Cleaners, labourers and related workers	29 (2.5)
Unemployed	22 (1.9)
Retired	16 (1.4)
Housewife	440 (37.8)
Others§	64 (5.5)
Combined household income	n = 1120
less than $1,000	93 (8.3)
$1,000 to $2,999	468 (41.8)
$3,000 to $4,999	273 (24.4)
$5,000 to $6,999	129 (11.5)
$7,000 or more	157 (14.0)

*Grandmother, grandfather or aunty
†Filipinos, Bangladeshis, and those with dependent pass
‡Shop house
§Police/security officer

However, a significantly lower percentage of caregivers (<63%) felt comfortable talking about these issues. Only 62.1% felt comfortable talking about abstinence, 60.8% felt comfortable talking about consequences of premarital sex, 57.9% and 61.5% about using condoms to prevent pregnancy and diseases, respectively. Similarly, a significantly lower percentage (59%) of caregivers reported confidence in talking about these issues.

Overall, only 8.3% of caregivers discussed sexual health

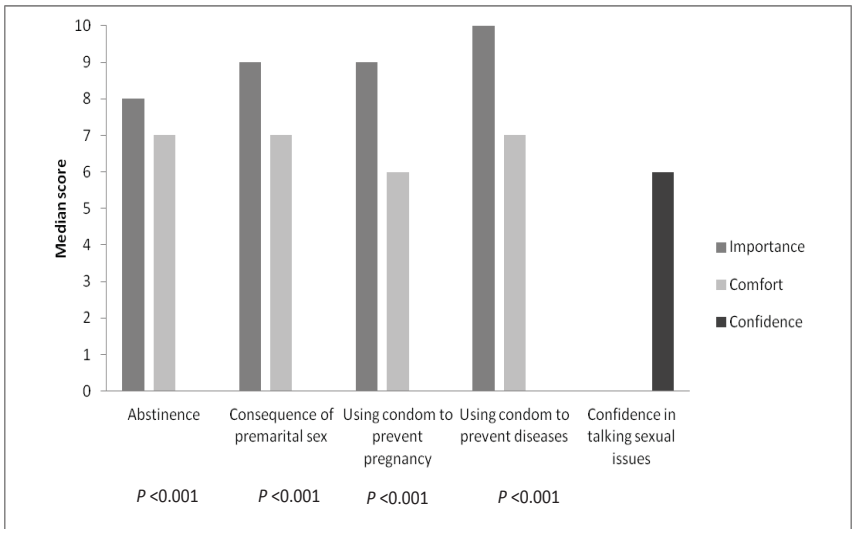

Fig. 1. Caregivers' attitudes, comfort and confidence levels towards communicating with their children about sexuality issues.*
*Sexual issues refer to issues on abstinence, consequences of premarital sex, using condoms to prevent pregnancy and using condoms to prevent disease

issues very often with their children, 37.2% discussed sometimes, 22.0% seldom/hardly ever (once or twice) and 32.5% never in the last year.

Table 3 shows the percentage distribution of caregivers who discussed or communicated sexual health issues (very often and sometimes combined) by socio-demographic variables and perceived importance, comfort and confidence in talking about these issues. Sexuality communication between the caregiver and child differed significantly by the caregiver's relationship to child, ethnicity, caregiver's educational level, and occupation. Mothers were more likely to communicate sexuality issues with their children. A higher proportion of Malays than Chinese and Indians reported that they discussed sexuality issues with their children. In addition, caregivers who completed secondary education reported a higher communication frequency of sexuality issues with their children. Caregivers who scored higher in perceived importance, comfort and confidence towards parent-child sexuality communication also reported a higher communication frequency.

In the multivariate analysis, factors associated with sexuality communication were relationship to child, ethnicity, educational level and perceived "comfort" and "confidence" about talking to their children on sexuality issues. Caregivers who were mothers or Malay or had completed secondary education or higher were about 1.5 times more likely to discuss sexuality issues with their children. A unit increase in the caregivers' perceived comfort level about talking to their children on sexuality issues showed an associated 27% increase in odds of communicating to the adolescents about sexuality issues. In addition, with one unit increase in caregivers' perceived confidence about talking to their children about sexuality issues, the odds of communicating with the adolescents on sexuality issues increased by 9% (Table 4).

Discussion

Parents and caregivers generally felt it is important to talk to their adolescents about sexual issues on abstinence, consequences of premarital sex and condom use. However, they were significantly much less comfortable and confident talking about these issues to their children. When it came to the actual practice, less than 50% of caregivers talked about sexual health issues with their children. In contrast, a multi-site study in the United States among African American mothers and their 9- to 12-year-old children found that over 70% of mothers reported talking to their child about sex topics.[21] However, in a study in Africa, only 27% of adolescents reported parent-child sexuality communication.[22] Our study found that parent-child sexuality communication increased with increasing educational level, where parents with secondary or tertiary education talked to their children about sexual issues more frequently. Mothers, Malays and caregivers with higher comfort and confidence levels towards communication with their adolescents were significantly associated with sexuality communication. This is consistent with the results of a study conducted among African-American mothers which found that mothers were more likely to communicate with their children about sex and the mother-child sexuality communication was associated with mother's self-efficacy and comfort in sexuality communication.[19] We note however, that differences in cultural practices could have also affected parent-child sexuality communication among the latter.

Limitations of this study include self-report bias of behaviours. However, we took measures to reduce biases by providing rigorous training to the interviewers and using measures rated on a scale with reverse coding of some of the measures. The cross-sectional study also makes it difficult to establish the causal effect relationship of some of the questions on attitudes and behaviours. The response rate

Table 3. Caregivers' Communication Practice Towards Sexual Issues of their Children Aged 10 to 17 years by Socio-demographic Characteristics

	Total	Talk about sexual issues		*P* value
		sometimes/often	seldom/hardly ever/never	
Overall	1169	45.4	54.6	
Relationship to child				
Mother	789	48.9	51.1	<0.001
Others	336	37.5	62.5	
Gender of child				
Male	588	42.9	57.1	0.079
Female	541	48.1	51.9	
Ethnicity*				
Chinese	751	43.7	56.3	0.014
Malay	225	54.7	45.3	
Indian	125	39.2	60.8	
Others	32	43.8	56.3	
Educational level				
No schooling/not completed primary school	82	34.1	65.9	<0.001
Completed primary school	173	32.4	67.6	
Secondary school/Institute of Technical Education	531	51.2	48.8	
Junior college/polytechnic/art school	169	49.7	50.3	
University	176	42.0	58.0	
Type of residence				
HDB 1 to 2 room	52	59.6	40.4	0.129
HDB 3 room	300	44.0	56.0	
HDB 4 room	419	42.7	57.3	
HDB 5 room/executive	274	47.1	52.9	
Private condominium/house	86	51.2	48.8	
Combined household income				
less than $1,000	87	46.0	54.0	0.057
$1,000 to $2,999	454	40.5	59.5	
$3,000 to $4,999	266	48.5	51.5	
$5,000 to $6,999	126	54.0	46.0	
$7,000 or more	153	46.4	53.6	
Occupation				
Legislators, senior officials and managers	51	35.3	64.7	0.007
Professionals	85	36.5	63.5	
Health-related professionals	21	57.1	42.9	
Teachers	50	54.0	46.0	
Associate professionals and technicians	55	49.1	50.9	
Clerical workers	84	65.5	34.5	
Service workers and shop and market sales workers	98	44.9	55.1	
Self-employed small business	59	59.3	40.7	
Hawkers	25	44.0	56.0	
Production craftsmen and related workers	29	41.4	58.6	
Plant and machine operators and assemblers	19	42.1	57.9	
Cleaners, labourers and related workers	29	31.0	69.0	
Unemployed	21	47.6	52.4	
Retired	14	28.6	71.4	
Housewife	434	42.6	57.4	
Others	59	45.8	54.2	

Table 3. (Con't) Caregivers' Communication Practice Towards Sexual Issues of their Children Aged 10 to 17 years by Socio-demographic Characteristics

	Total	Talk about sexual issues		*P* value
		sometimes/often	seldom/hardly ever/never	
Important to talk about sexuality issues				
Yes (score >5)	580	50.5	49.5	<0.001
No (score ≤5)	72	26.4	73.6	
Median score		9.0	8.0	<0.001
Comfort in talking about sexuality issues				
Yes (score >5)	454	60.4	39.6	<0.001
No (score ≤5)	270	24.1	75.9	
Median score		8.0	5.3	<0.001
Confident in talking about sexuality issues				
Yes (score >5)	642	56.1	43.9	<0.001
No (score ≤5)	453	29.1	70.9	
Median score		7.0	5.0	<0.001

*Chinese vs Indian, *P* value 0.349

Table 4. Statistically Significant Adjusted Odds Ratios of Caregiver-Adolescent Sexuality Communication by Caregivers' Socio-demographic and Attitudes Towards Sexuality Communication with Their Adolescents

Independent variables	Adjusted OR* (95% CI)	*P* value
Socio-demographic		
Mother vs other caregiver	1.54 (1.14 to 2.08)	0.005
Malay vs non-Malay†	1.64 (1.16 to 2.31)	0.006
Completed Secondary or higher education (yes vs no)	1.58 (1.10 to 2.26)	0.013
Attitude score		
Comfort‡	1.27 (1.18 to 1.35)	<0.001
Confidence§	1.09 (1.01 to 1.171)	0.023

*Backward stepwise multivariate logistic regression model adjusted for gender (child), caregiver's relationship to child, ethnicity, educational level of the caregiver, household income, caregivers' perceived importance, comfort and confidence for sexual health communication with the child. Only significantly associated odds ratios are shown.

†Chinese, Indian and others were combined as one group—non-Malay—because of their similarities in percentage in Table 3.

‡Mean score of all questions about comfort in parent-child sexuality communication (1: not at all, 10: very).

§Scored from 1 to 10 (1: not at all, 10: very)

among Malays was higher than other ethnic groups and this may introduce potential bias to the findings. Finally, as this study covers many areas regarding parental practices regarding their adolescent children's health, we were not able to assess in-depth the reasons why parents or caregivers did not talk to their teenage children about sex.

Despite the abovementioned limitations, this study has a number of strengths. These include the big sample size of 1169 caregivers and a high response rate of 81.4%. The non-significant differences in HDB housing type between respondents and non-respondents also suggest that our findings can be generalised to the general population of HDB dwellers in Singapore.

Based on the study findings, which showed that caregivers felt it is important to talk to their children about sexuality but lacked the comfort and confidence to do so, there is a need to equip caregivers with skills and provide them with educational resources to enable them to talk to their adolescent children about sexuality.[23]

Our findings of a 30% gap in the percentage of perceived importance (>80%) and the percentage of actual sexuality communication (<50%) suggest that more than one-third of parents need to be empowered to communicate sexuality issues with their adolescent children.

In addition, as sexually transmitted infections are increasing among adolescents in Singapore, the survey findings on parental attitudes towards sexual health will facilitate the development of more educational initiatives on adolescent sexual health targeting parents/caregivers. These could include programmes at schools, workplaces and community settings, as well as via the media that would equip parents/caregivers with skills to deal with sexuality issues and thereby encourage greater parent-child communication in this area. To cater to different ethnic groups, programmes can also be conducted via ethnic or faith-based organisations.

Acknowledgments

This study was supported by Health Promotion Board, Singapore.

We thank and acknowledge the literature review and data analysis contributed by our late colleague, Dr Arash Pooya. This article is dedicated to him.

REFERENCES

1. Lopez AD, Mathers CD. Measuring the global burden of disease and epidemiology transitions: 2002-2030. Ann Trop Med Parasitol 2006;100:481-99.
2. World Health Organization. Joint United Nations Program on HIV/AIDS: 2006 AIDS Epidemic Update. Geneva, Switzerland, 2007.
3. Department of Sexually Transmitted Infection (STI) Control Clinic (DSC Clinic) of Singapore. Annual Report Singapore: Department of Sexually Transmitted Infection (STI) Control Clinic 2009.
4. Chen B, Wang LP, Wang HX, Han YF, Zhao XM, Ma QL, et al. Survey on reproductive health status of Shanghai college students. Zhonghua Nan Ke Xue 2005;11:744-7.
5. Jaya J, Hindin MJ. Premarital romantic partnerships: attitudes and sexual experiences of youth in Delhi, India. Int Perspect Sex Reprod Health 2009;35:97-104.
6. Stanton BF, Li X, Black MM, Ricardo I, Galbraith J, Feigelman S, et al. Longitudinal stability and predictability of sexual perceptions, intentions, and behaviors among early adolescent African-Americans. J Adolesc Health 1996;18:10-9.
7. Villarruel AM, Jemmott JBr, Jemmott LS, Ronis DL. Predictors of sexual intercourse and condom use intentions among Spanish-dominant Latino youth: a test of the planned behavior theory. Nurs Res 2004;53:172-81.
8. Wong ML, Chan RKW, Koh D, Tan HH, Lim FS, Emmanuel S, et al. Premarital sexual intercourse among adolescents in an Asian country: multilevel ecological factors. Pediatrics 2009;124:e44-52.
9. Atienzo EE, Walker DM, Campero L, Lamadrid-Figueroa H, Gutiérrez JP. Parent-adolescent communication about sex in Morelos, Mexico: does it impact sexual behaviour? Eur J Contracept Reprod Health Care 2009;14:111-9.
10. Buzi RS, Smith PB, Weinman ML. Parental communication as a protective factor in increasing condom use among minority adolescents. Int J Adolesc Med Health 2009;21:51-9.
11. Hadley W, Brown LK, Lescano CM, Kell H, Spalding K, Diclemente R, et al. Parent-adolescent sexual communication: associations of condom use with condom discussions. AIDS Behav 2009;13:997-1004.
12. Ogle S, Glasier A, Riley SC. Communication between parents and their children about sexual health. Contraception 2008;77:283-8.
13. DiIorio C, Kelley M, Hockenberry-Eaton M. Communication about sexual issues: mothers, fathers, and friends. J Adolesc Health 1999;24:181-9.
14. Bull S, Nabenbezi D, Birungi R, Kiwanuka J, Ybarra M. Cyber-Senga: Ugandan youth preferences for content in an internet-delivered comprehensive sexuality education programme. East Afr J Public Health 2010;7:58-63.
15. Bleakley A, Hennessy M, Fishbein M, Jordan A. How sources of sexual information relate to adolescents' beliefs about sex. Am J Health Behav 2009;33:37-48.
16. Busse P, Fishbein M, Bleakley A, Hennessy M. The role of communication with friends in sexual initiation. Communic Res 2010;37:239-55.
17. Bleakley A, Hennessy M, Fishbein M. Public opinion on sex education in US schools. Arch Pediatr Adolesc Med 2006;160:1151-6.
18. DiIorio C, Pluhar E, Belcher L. Parent-child communication about sexuality a review of literature from 1980 to 2002. Journal of HIV/AIDS Prevention & Education for Adolescents & Children 2003;5:7-32.
19. Pluhar EI, Dilorio CK, McCarty F. Correlates of sexuality communication among mothers and 6-12-year-old children. Child Care Health Dev 2008;34:283-90.
20. Health Promotion Board Singapore. Sexual Health Articles for Youth Available at: http://www.hpb.gov.sg/sexualhealth/forlifestage.aspx?lifestage=Youth. Accessed 30 September 2011.
21. Miller KS, Fasula AM, Dittus P, Wiegand RE, Wyckoff SC, McNair L. Barriers and facilitators to maternal communication with preadolescents about age-relevant sexual topics. AIDS Behav 2009;13:365-74.
22. Kawai K, Kaaya SF, Kajula L, Mbwambo J, Kilonzo GP, Fawzi WW. Parents' and teachers' communication about HIV and sex in relation to the timing of sexual initiation among young adolescents in Tanzania. Scand J Public Health 2008;36:879-88.
23. Miller KS, Kotchick BA, Dorsey S, Forehand R, Ham AY. Family communication about sex: what are parents saying and are their adolescents listening? Fam Plann Perspect 1998;30:218-22,35.