

Full Length Research Paper

Knowledge, attitudes and behaviors of premarital sex among bedsit-living students in Hue City, Vietnam

**Nguyen Thi Thanh Nhan^{1,2*}, Phan Trieu Phu³, Phan Thi Thanh Tra¹, Pham Thi Anh Phuong¹,
Nguyen Quynh Nhu¹ and Nguyen Thi Thu¹**

¹Faculty of Public Health, Hue University of Medicine and Pharmacy, Hue University, Vietnam.

²Department of Social and Preventive Medicine, Inha University, Incheon, Republic of Korea.

³Oxford University Clinical Research Unit, Vietnam

Received 26 November, 2018; Accepted 9 April, 2019

The study aimed to explore knowledge, attitudes and behaviors of premarital sex and its associated factors among bedsit-living students. A community-based cross-sectional study was conducted in Hue city, Vietnam in 2015. Multi-stage cluster sampling was used to recruit students. Data were collected by using a self-administered questionnaire at participant's room. A total of 730 students (men/women: 44.2%/55.8%, mean age: 20.9 years) were enrolled. Prevalence of premarital sex was 11.9% with an average age of first sexual intercourse at 19.8 ± 2.2 years. For premarital sex, 13.3 to 19.5% students did not have enough knowledge of reproductive health and safe sex, 34.1% agreed on different situations. Male students accepted premarital sex more than female students did (45.8% vs. 24.8%, $p < 0.001$, χ^2). Gender, age group, marital status, knowledge of consequences of premarital sex and knowledge of STDs prevention were associated with attitude and practice of premarital sex ($p < 0.05$, χ^2). The prevalence of premarital sex was comparable with recent domestic and regional data, yet implied an increased trend. Up to one-fifth of students were not equipped with enough knowledge of safe sex, therefore, reproductive and sexual health education for bedsit-living students should be reinforced.

Key words: Premarital sex, knowledge, attitude, behavior, students.

INTRODUCTION

The incidence of premarital sexual activity among youth has been dramatically increased due to the widening gap between age at menarche and age at marriage (Gibbs et al., 2014; Motamedi et al., 2016; Shu et al., 2016; Yip et al., 2013). As most acts of premarital sex are unprotected, sexually active youth are at high risk of exposing to the human immunodeficiency virus/acquired

immunodeficiency syndrome, sexually transmitted diseases (STDs), unintended pregnancy and resultant unsafe abortion (Azamawati et al., 2017; Shu et al., 2016; Xu et al., 2019; Yip et al., 2013). In many countries, approximately up to 51% of adolescents engage in premarital sex (Akibu et al., 2017; Azmawati et al., 2017; Regassa et al., 2016; Teferra et al., 2015; Tran et al.,

*Corresponding author. E-mail: thanhnhhan2904@yahoo.com. Tel: 84-905-665-315.

2018; Widyatuti et al., 2018). Additionally, the World Health Organization reported 22 million girls aged 15 to 24 years experienced unplanned pregnancies in 2014 and a worldwide increase in number of unsafe abortions from 19.7 million in 2003 to 21.6 million in 2008, almost all in developing countries (Shu et al., 2016; WHO, 2011).

As in other Asian countries, Vietnam has a strong norm that prohibits premarital sexual contact. Nonetheless, the customary attitude has been changing due to a multifactorial impact (Gibbs et al., 2014; Shu et al., 2016; Xu et al., 2019; Yip et al., 2013). Declining influence of family, increasing urbanization, migration and the exposure to social network have collectively contributed to major changes in social and sexual behavior among adolescents (Gibbs et al., 2014; Shu et al., 2016; Tran et al., 2018; Xu et al., 2019). A nationally representative sample of youth aged 22 to 24 years using a self-administered questionnaire found that 33% of men and 4% of women in urban and 26% of men and 3% of women in rural areas admitted premarital sex (Ghuman et al. 2006).

Sexual activity is easily initiated when young people are still physically, emotionally, and cognitively developing while living away from home without family monitoring (Regassa et al., 2016; Yip et al., 2013). Systematic information on any changes that have occurred in the prevalence and context of premarital sexual activity would help provide an insight into the relationship among social and economic change, premarital sexual behavior and the transmission of STDs. However, not only is there a lack of reliable evidence that the prevalence of premarital sex is rising in Vietnam, but there is little information regarding the context and associated factors of premarital sex (Ghuman et al., 2006). This is a significant gap in the national data. This study was, therefore, conducted to investigate knowledge, attitude and practice of premarital sex among the subpopulation of bedsit-living students in Hue city and their associated factors.

MATERIALS AND METHODS

Study design

A community-based, cross sectional sexual survey was carried out in Hue city, Vietnam in 2015. Hue is a sub-metropolitan city, in the Central Vietnam and located there, is a regional university, meaning that the city is home to thousands of immigrated students of both undergraduate and graduate levels. The target group was immigrated students who were living in rented accommodation in Hue city. Multi-stage cluster sampling method was used (Azmawati et al., 2017; Widyatuti et al., 2018). The city has 27 urban wards. In stage 1, 5 wards with high density of residential bedsits close to Hue university schools were selected. Houses and households listing for selected wards were obtained with the assistance of local government. There were 1364 registered bedsits which were homes to 21810 students. In stage 2, 146 bedsits were randomly selected and all residing students aged 18 to 30 years were asked

to enroll in this survey, except for foreign students. Data were collected by using a self-administered questionnaire at participant's room to create favorable conditions. Six trained staff members from the Faculty of Public Health, Hue University of Medicine and Pharmacy followed up the data collection process closely.

Sample size

Sample size was calculated based on a previous publication which reported 38.8% students considered premarital sex (Thi et al., 2012). Therefore, the estimated size was:

$$n = 1.96^2 \frac{(1-0.388) \times 0.388}{0.05} = 364.9 \approx 365$$

enrolled participants were divided into 2 age groups, 18 to 20 and 21 to 30 for further evaluation of associated factors.

Statistical analysis

Continuous data were presented as mean \pm standard deviation and categorical data were given as counts and percentages. Pearson's Chi-squared test was used to ascertain the association between knowledge, attitude, practice of premarital sex and gender, age group, marital status. All analyses were performed using SPSS 18.0 software. P values < 0.05 indicated statistical significance for all comparisons.

Ethical clearance

Ethical standing and protocol of this study were approved by the institutional review board of Hue University of Medicine and Pharmacy. Participants reserved the right to take part in the survey and were not required to declare name, age or personal information. Written consent was obtained from all participants.

RESULTS

Knowledge, attitude and practices of premarital sex

Seven hundred and thirty bedsit-living students including 323 men (44.2%) and 407 women (55.8%) agreed to participate in the survey. The mean age was 20.9 years (range, 18 to 30 years). Among these, 87 respondents (11.9%) had experienced premarital sex at an average age of 19.8 ± 2.2 years (range, 14 to 25 years), including 60 men and 27 women. In this subset of premarital sex, 80/87 individuals (91.9%) admitted using contraceptives (65.5% used frequently and 26.4% used unfrequently) and 7/87 (8.1%) claimed never use contraceptives. Types of contraceptive were condom (93.8%), birth control pills (26.3%), emergency contraceptive pills (8.8%), calendar based (2.5%) and withdrawal (1.3%). Eleven participants (12.6%) reported pregnancy, of these 9 decided to terminate the pregnancy by abortions. Knowledge and attitude toward premarital sex of respondents was summarized in Table 1. Men were less knowledgeable

Table 1. Knowledge and attitudes of students toward premarital sex.

Questions	Male (%), n = 323	Female (%), n = 407	P value	Total (%), n = 730
Knowledge				
Do not know any consequences of premarital sex	58 (18.0)	39 (9.6)	<0.001	97 (13.3)
Do not know or believe that women cannot be pregnant in the first sexual intercourse	65 (20.1)	62 (15.2)	0.08	127 (17.4)
Do not know any contraceptive methods	43 (13.3)	55 (13.5)	0.93	98 (13.4)
Do not know where providing contraceptive methods	63 (19.5)	79 (19.4)	0.97	142 (19.5)
Do not know how to avoid STDs	46 (14.2)	68 (16.7)	0.35	114 (15.6)
Do not know consequences of abortion	27 (8.4)	21 (5.2)	0.08	48 (6.6)
Do not know where providing safe abortion services	37 (11.5)	34 (8.4)	0.16	71 (9.7)
Attitudes				
Premarital sex is not allowed	175 (54.2)	306 (75.2)	< 0.001	481 (65.9)
Premarital sex is acceptable if it is consensual	96 (29.7)	60 (14.7)	< 0.001	156 (21.4)
Premarital sex is acceptable if understanding contraceptive methods	30 (9.3)	19 (4.7)	0.01	49 (6.7)
Premarital sex is acceptable if both believe in a mutual love	5 (1.5)	7 (1.7)	0.83	12 (1.6)
Premarital sex is acceptable if marriage has been planned in near future	6 (1.9)	5 (1.2)	0.44	11 (1.5)
Premarital sex is acceptable if wedding date has been fixed	10 (3.1)	11 (2.7)	0.74	21 (2.9)

than women in terms of consequences of premarital sex ($p < 0.001$, χ^2). Premarital sex was refused by 65.9% of participants whilst 34.1% agreed on different situations, in which 21.4% accepted if it is consensual and 6.7% accepted if understanding contraceptives.

There were 346 (47.4%) and 384 (52.6%) students in the age groups of 18 to 20 years and 21 to 30 years, respectively. Participants of the age group of 21 to 30 years had higher rate of knowing consequences of premarital sex, accepting premarital sex and practicing premarital sex than those in the age group of 18 to 20 years (89.8% vs. 83.2%, 35.7% vs. 32.4% and 16.4% accepted premarital sex more than female students did (45.8% vs. 24.8%, $p < 0.001$, χ^2). Associated factors of attitude and practice of

premarital sex were summarized in Tables 2 and 3.

Associated factors of premarital sex

Gender, age group, marital status, knowledge of consequences of premarital sex and knowledge of STDs prevention were associated with attitude toward premarital sex ($p < 0.05$, χ^2). Similarly, gender, age group, marital status, knowledge of consequences of premarital sex and attitude toward premarital sex were associated factors of practice of premarital sex ($p < 0.05$, χ^2).

This study addressed a specific subpopulation of students living in rented accommodation who were generally considered more susceptible to

unsafe sex. As a result, 11.9% of students admitted premarital sex, a rate which was in line with recent domestic and regional data, yet lower than those of Africa, West Asia and developed countries (Adhikari and Tamang, 2009; Azmawati et al., 2017; Do and Fu, 2010; Lou et al., 2012; Rathavuth, 2009; Song and Ji, 2010; Tangmunkongvorakul et al., 2012; Thi et al., 2012a; Tran et al., 2018; Yip et al., 2013). However, this prevalence seems to be higher than that of the previous national data ((Ghuman et al. 2006; Mensch et al., 2003). This finding implies a trend of increased popularity of premarital sex among students, particularly those living away from family. Traditionally for most Asian people, particularly women, the onset of sexual activity coincides with marriage. However with rising ages

Table 2. Associated factors of attitude toward premarital sex.

Variable	Attitude toward premarital sex			P value
	Accept (n=249, 34.1%)	Not accept (n=481, 65.1%)	Total (n=730, 100%)	
Gender	Men	148 (45.8)	175 (54.2)	< 0.001
	Women	101 (24.8)	306 (75.2)	
Age group	18 – 20 years	112 (32.4)	234 (67.6)	< 0.05
	21 – 30 years	137 (35.7)	247 (64.3)	
Marital status	Never had partner	51 (22.1)	180 (77.9)	< 0.05
	Having/Had partner	198 (39.7)	301 (60.3)	
Know consequences of premarital sex	Yes	203 (32.1)	430 (67.9)	< 0.05
	No	46 (47.4)	51 (52.6)	
Know how to prevent STDs	Yes	197 (32.0)	419 (68.0)	< 0.05
	No	52 (45.6)	62 (54.4)	

of marriage and changing sociocultural norms, young people have more liberal attitude toward premarital sex with an increasing number of sexual activity before marriage (Cai et al., 2013; Do and Fu, 2010; Gibbs et al., 2014; Htay et al., 2010; Katayon, 2014; Motamedi et al., 2016; Mudassir et al., 2010; Philippines, 2014; Shu et al., 2016; Song and Ji, 2010; Tangmunkongvorakul et al., 2011; Xu et al., 2019; Yip et al., 2013).

We found that male students were more sexually active than their female counterparts (69% vs. 31%). This finding was also in keeping with previous data as men have more permissive attitudes towards premarital sex than women (Adanikin et al., 2017; Berhan and Berhan, 2015; Motamedi et al., 2016; UNFPA, 2015; Xu et al., 2019; Yip et al., 2013), probably because men

have greater freedom to be involved in sexual relation (Motamedi et al., 2016). Some studies suggest that young men and women engage in premarital sex in different circumstances. Men are more likely influenced by pleasure, recreation and peer pressure and impulsivity whereas women are driven by emotion (Gibbs et al., 2014; Motamedi et al., 2016). Thus, while young women tend to accept their first sex with a committed relationship or with a partner they planned to marry, young men are more likely to have sex with a casual partner or sex worker (Nguyen and Liamputtong, 2007; UNFPA, 2015). However, this pattern appears to be changing in some settings as attitudes towards premarital sex among young women become more permissive, meaning that more young women (33%) and men (42%) were supportive of sexual activity in the context of

romantic relationships (Motamedi et al., 2016; Shu et al., 2016; Tangmunkongvorakul et al., 2011; Yip et al., 2013).

In Vietnam, achievements from the large-scale economic reform have had great impact on the national socioeconomic status (Gibbs et al., 2014; Tran et al., 2018). People have more freedom to make their own choice and more contacts with Western culture. In addition, parents seem to lose some of their control over their children when they become financially independent (Nguyen and Liamputtong, 2007). Internet and social networks have been widely used as a space to learn about sexual relationships (Azmawati et al., 2017; Gibbs et al., 2014; UNFPA, 2015). As a result, young people have more permissive attitude toward dating and premarital sex than their older counterparts (Lou et al., 2012; Nguyen and

Table 3. Associated factors of practice of premarital sex.

Variable		Practice premarital sex			P value
		Yes (n=87, 11.9%)	No (n=643, 88.1%)	Total (n=730, 100%)	
Gender	Men	60 (18.6)	263 (81.4)	323 (44.2)	< 0.05
	Women	27 (6.6)	380 (93.4)	407 (55.8)	
Age group	18 – 20 years	24 (6.9)	322 (93.1)	346 (47.4)	< 0.05
	21 – 30 years	63 (16.4)	321 (93.6)	384 (52.6)	
Marital status	Never had partner	9 (3.9)	222 (96.1)	231 (31.6)	< 0.05
	Having/had partner	78 (15.6)	421 (84.4)	499 (68.4)	
Know consequences of premarital sex	Yes	65 (10.3)	568 (89.7)	633 (86.7)	< 0.05
	No	22 (22.7)	75 (77.3)	97 (13.3)	
Attitude toward premarital sex	Accept	62 (24.9)	187 (75.1)	249 (34.1)	<0 .05
	Not accept	25 (5.2)	456 (94.8)	481 (65.9)	

Liamputtong, 2007; Shu et al., 2016; Xu et al., 2019; Yip et al., 2013). In this survey, we observed an interactive association between attitude and practice of premarital sex with gender, age group, marital status and knowledge of premarital sex. This finding was similar with a domestic report (Thi et al., 2015b).

In some settings, young people who are out-of-school are also more likely to engage in premarital sex (Azmawati et al., 2017; Yip et al., 2013). A study of urban adolescents aged 17 to 20 in Thailand reported that 90% of out of school boys and 53% of out of school girls had commenced sexual activity, compared with 33 and 15% who were still at school, respectively (Tangmunkongvorakul et al., 2012). Another study of dropout college students in Nigeria found 73.9% students had full sexual intercourse (Adanikin et al., 2017). In Cambodia, 18% of young men in urban areas have had premarital sex compared with 6% in rural areas (Rathavuth, 2009).

Family monitoring has been proved a protective factor against unsafe sex (Azmawati et al., 2017; Widyatuti et al., 2018). A lack of parental support or family attachment has been associated with early initiation of sex (Motamedi et al., 2016; Shu et al., 2016; UNFPA, 2015; Yip et al., 2013). While religious taboos may be a barrier limiting open discussion of sexual health and access to services, a family's religious or spiritual beliefs can also be protective against risky sexual behaviors (Azmawati et al., 2017; Chamrathirong et al., 2010). Peers are also a strong influence on young people's attitudes and behaviors, especially among men (Akibu et al., 2017; Azmawati et al., 2017; Gibbs et al., 2014). Additionally, a perception that the majority of friends or peers are already having sex increases pressure on young people, and has been associated with early sexual initiation in

many countries including Vietnam (UNFPA, 2015).

Premarital sex itself is not necessarily a risk factor for poor sexual and reproductive health. As adolescents grow up and mature, increasing interest in sex and sexual experimentation are a normal part of physical and mental development. Therefore, young people who are equipped with knowledge of safe sex and access to services can have healthy, positive sexual relationships (UNFPA, 2015). Increase capacity in youth sexual and reproductive health program and service delivery is warranted. Understanding how youths made decisions to engage in early sexual activities is critical for intervention efforts aimed at fostering positive youth development and decreasing the negative outcomes of youth sexual behavior.

This study has several limitations. The relative homogeneity of the study population in terms of occupation, educational background, generation and living condition may affect generalization. In addition, small sample sizes recruited from a single community, inaccessibility of other associated factors such as sexual health education, peer influence, family socio-demographic were also consistent limitations.

Conclusion

The prevalence of premarital sex among the subset of bedsit-living students was comparable with national and regional data. Up to one-fifth of the studied population were not well equipped with knowledge of safe sex. Gender, age group, marital status and knowledge of consequences of premarital sex were associated factors of attitude and practice. The present study also provides evidence that knowledge, attitude and practice of

premarital sex are connected. Reproductive and sexual health education for immigrated students should be reinforced. The intervention effort has to focus on the risk factors among this subset and provide them with convenient, optional and accessible services.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Adanikin AI, Adanikin PO, Orji EO, Adeyanju BT (2017). Survey of Sexual Activity and Contraceptive Use among Unmarried Young School and College Drop-Outs in a Defined Nigerian Population. *Journal of Biosocial Science* 49(5):675-684
- Adhikari R, Tamang J (2009). Premarital sexual behavior among male college students of Kathmandu, Nepal. *BMC Public Health* 9(1):241
- Akibu M, Gebresellasi F, Zekarias F, Tsegaye W (2017). Premarital sexual practice and its predictors among university students: institution based cross sectional study. *The Pan African Medical Journal* 28:234.
- Azmawati MN, Dalila R, Idris IB, Hod R (2017) Bullying and truancy: Predictors to sexual practices among school-going adolescents in Malaysia - a cross-sectional study. *The Medical journal of Malaysia* 72(5):298-305
- Berhan Y, Berhan A (2015). A Meta-Analysis of Risky Sexual Behaviour among Male Youth in Developing Countries. *AIDS Research and Treatment* 2015.
- Cai R, Richardus JH, Looman CW, de Vlas SJ (2013). Trends in high-risk sexual behaviors among general population groups in China: a systematic review. *PLoS one* 8(11):e79320
- Chamrathirong A, Miller BA, Byrnes HF, Rhucharoenporpanich O, Cupp PK, Rosati MJ, Chookhare W (2010). Spirituality within the family and the prevention of health risk behavior among adolescents in Bangkok, Thailand. *Social Science and Medicine* 71(10):1855-1863.
- Do M, Fu H (2010) Attitudes Toward Premarital Sex in Contemporary Vietnam: Findings from a National Survey. *International Journal of Sexual Health* 22(2):103-118.
- Ghuman S, Loi VM, Huy VT, Knodel J (2006) Continuity and change in premarital sex in Vietnam. *International Family Planning Perspectives* 32(4):166-174.
- Gibbs SE, Le LC, Dao HB, Blum RW (2014). Peer and community influences on the acceptance of premarital sex among Vietnamese adolescents. *Journal of Paediatrics and Child Health* 50(6):438-443
- Ghuman S, Loi VM, Huy VT, Knodel J (2006) Continuity and change in premarital sex in Vietnam. *International family planning perspectives* 32(4):166-74
- Htay SS, Yoshida Y, Harun-Or-Rashid M, Sakamoto J (2010). Risk behaviours and associated factors among medical students and community youths in Myanmar. *Nagoya Journal of Medical Science* 72(2):71-81.
- Katayon VS (2014) Estimation of sexual behavior in the 18-to-24-years old Iranian youth based on a crosswise model study. *BMC Research Notes* 7(28).
- Lou C, Cheng Y, Gao E, Zuo X, Emerson MR, Zabin LS (2012). Media's contribution to sexual knowledge, attitudes, and behaviors for adolescents and young adults in three Asian cities. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine* 50(3):26-36.
- Mensch BS, Clark WH, Anh DN (2003). Adolescents in Vietnam: looking beyond reproductive health. *Studies in Family Planning* 34(4):249-262.
- Motamedi M, Merghati-KE, Shahbazi M, Rahimi-NS, Salehi M, Karimi M, Khalajabadi-FF (2016) Paradoxical attitudes toward premarital dating and sexual encounters in Tehran, Iran: a cross-sectional study. *Reproductive Health* 13(1):102.
- Mudassir ASASS, Keivan A, Tahir MK (2010) Awareness of school students on sexually transmitted infections (STIs) and their sexual behavior: a cross-sectional study conducted in Pulau Pinang, Malaysia. *BMC Public Health* 10(47).
- Nguyen HN, Liamputtong P (2007). Sex, love and gender norms: sexual life and experience of a group of young people in Ho Chi Minh City, Vietnam. *Sexual Health* 4(1):63.
- Philippines NSO (2014). Philippines National Demographic and Health Survey 2013. Calverton, Maryland: National Statistics Office Philippines and ICF Macro.
- Rathavuth HVC (2009) Changes in HIV-Related Knowledge, Behaviors, and Sexual Practices among Cambodian Women from 2000 to 2005. *Journal of Women's Health* 18(8).
- Regassa T, Chala D, Adeba E (2016). Premarital sex in the last twelve months and its predictors among students of Wollega University, Ethiopia. *Ethiopian Journal of Health Sciences* 26(4):351.
- Shu C, Fu A, Lu J, Yin M, Chen Y, Qin T, Shang X, Wang X, Zhang M, Xiong C, Yin P (2016). Association between age at first sexual intercourse and knowledge, attitudes and practices regarding reproductive health and unplanned pregnancy: a cross-sectional study. *Public Health* 135:104-113.
- Song Y, Ji CY (2010) Sexual intercourse and high-risk sexual behaviours among a national sample of urban adolescents in China. *Journal Public Health* 32(3):312-321.
- Tangmunkongvorakul A, Carmichael G, Banwell C, Seubsman SA, Sleigh A (2012). Coital Experience Among Adolescents in Three Social-Educational Groups in Urban Chiang Mai, Thailand. *Asian Population Studies* 8(1):39-63.
- Tangmunkongvorakul A, Carmichael G, Banwell C, Utomo ID, Sleigh A (2011). Sexual perceptions and practices of young people in Northern Thailand. *Journal of Youth Studies* 14(3):315-339.
- Teferra TB, Erena AN, Kebede A (2015). Prevalence of premarital sexual practice and associated factors among undergraduate health science students of Madawalabu University, Bale Goba, South East Ethiopia: institution based cross sectional study. *The Pan African Medical Journal* 20:209.
- Thi H, Tra L, Pham NQL (2015b). Current status and some factors related to the sexual behavior of student in Phu Tho Medical College. *Journal of Public Health* 34:49-56.
- Thi TT, Nguyen VHT, Thi HH (2012a). Attitudes toward premarital sex among students in one university. *Journal of Preventive Medicine* 8(135)
- Tran TDH, Tuan DK, Anh ND, Le TKA, Bui TTH (2018). Premarital sex, contraceptive use among unmarried women migrant workers in industrial parks in Vietnam, 2015. *Health Care for Women International* 39(4):377-388.
- UNFPA UW (2015). Sexual and reproductive health of young people in Asia and the Pacific: A review of issues, policies and programmes. Bangkok.
- World Health Organization (WHO) (2011). Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008. Sixth Edition. 978 92 4 150111 8
- Widyatuti, Hafilah SC, Yuni NA (2018). Correlation between parent-adolescent communication and adolescents' premarital sex risk. *Enfermería Clínica* 28:51-54.
- Xu H, Xie J, Xiao Z, Xiao H, Li X, Goldsamt L, Wang H (2019). Sexual attitudes, sexual behaviors, and use of HIV prevention services among male undergraduate students in Hunan, China: a cross-sectional survey. *BMC Public Health* 19(1):250.
- Yip PS, Zhang H, Lam TH, Lam KF, Lee AM, Chan J, Fan S (2013). Sex knowledge, attitudes, and high-risk sexual behaviors among unmarried youth in Hong Kong. *BMC Public Health* 13(1):691.