Sexual Activity and HIV-Related Knowledge among Secondary School Students in China

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ABSTRACT
Objective: The aim of this study was to assess the level of HIV/AIDS knowledge and sexual activity among secondary school students, and to offer specific intervention strategies.

Materials and Methods: Random sampling technique was used and cross-sectional study was conducted among 6347 students using self-administered questionnaire.

Results: The ages of participants range from 9 to 21 years with a mean of 14.83±1.63 years. Of 6347 students, 3214 (50.6%) were female. Results showed that 65% of male and 71% of female had been pornography reader. Overall, the prevalence of knowledge on HIV caused by virus was high for male and female. On intimate contact, 25.7% of the male and 17.7% of the female students reported that they had a history of hugging; 11.3% of male and 5.6% of female students reported that they had an experience of kissing; 11.3% of male and 4.0% of female students reported that they had an experience of caressing, 27% of male and 18% of female students reported that they had an experience of sexual intercourse; and 49.5% of male and 58.4% of female students reported to have been forced to have sex. Accordingly, 75.1% of male and 90% of female students heard of HIV.

Conclusion: Education of the students on HIV/AIDS seems poorer at the secondary school in certain areas of China; more attention should be paid to those of senior grade students and students from divorced families.

Keywords: Sexual activity, student, HIV, China

Introduction
An increase in the incidence of premarital sex leads to an increase in unwanted pregnancies, abortion morbidity/mortality, and sexually transmitted diseases (STDs), secondary infertility and the development of cervical abnormalities in adolescents [1, 2]. Adolescents who become sexually active enter an arena of high-risk behavior [3-6]. Meanwhile, the sexual education program did not alter students’ attitudes about premarital sex or monogamy [7].

Several researchers focus on the studies of sex-related knowledge, attitudes and practices among college students. Some results revealed that only-child students scored higher on sex-related knowledge, and they were more inclined to agree with premarital sex, multiple sex partners, one-night stands, extramarital lovers and homosexuality [8]. Students whose parents were relatively well educated, living in the western areas of China, or with nucleus/extensive families were more likely to have early sex in their puberties [9]. Additionally, 44.6% of the students had forced sex [10]. The allegation of forced sex among secondary school students still needs further research.

This study has the following goals: to assess the level of HIV/AIDS knowledge and sexual activity among secondary school students, and to provide baseline data that can help formulating a comprehensive sexuality education program for secondary school students.

Materials and Methods
The data used here are from the health related behavior survey, in which a representative sample (n= 6700) of students were interviewed in 7 secondary schools (4 schools from Jiaxing city,
Zhejiang province and 3 from Wuhu city, Anhui province) in China during the 2013-2014 school year. A random sampling was used to select the school from Wuhu and Jiaxing city, respectively. Before this study, we had taken the permission of school administration, due consent of parents of the students was taken to administer a questionnaire to their children, and the data collection was approved by Wannan Medical College Ethics Committee.

The questionnaire contained socio-demographic data, sexual experience, attitudes and knowledge with regard to sexual health including HIV. The questions on sexual experience, attitudes and knowledge with regard to sexual health including HIV are as follows: Have you read pornography books, film or other materials in the past 12 months? Have you received sexual health education in school? Have you had any experience with hugging? Have you had any experience with kissing? Have you had any experience with caressing? Have you ever had sexual intercourse? Have you ever had forced sexual intercourse? Have you received HIV health education in school? Have you heard of HIV? If your friend were HIV positive, would you continue your friendship with him/her? If a student is HIV positive, should she/he be allowed to continue his/her studying in school? Do you know which of the following pathogens cause AIDS: bacteria, virus and fungus? The identities of the students were kept confidential.

Analyses were performed using Epidata3.0 software and Microsoft Excel 2007 software.

Results

6700 of the students were interviewed in 7 secondary schools. Due to 353 questionnaires were not complete or did not contain demographic data, they were excluded from the analyses. Thus, the valid questionnaires of 6347 students were used in this study. Table 1 shows the characteristics of the study participants.

The participants’ ages range from 9 to 21 years and the mean is 14.83±1.63 years. Among all, 3214 (50.6%) students were female and the rest were male. In terms of education level, the majority of the parents of the participants were illiterate, primary or secondary school graduates. 1.9% of the participants came from a divorced family and 68.5% of them from a nuclear family.

As illustrated in Table 2, 65% of male and 71% of female students had read pornography books. Overall, the knowledge about HIV caused by virus was high for male and female students. In order to prevent the spread of HIV, it is essential to educate the young population about this disease.
terms of intimate contact, 25.7% of male and 17.7% of female students reported that they had a history of hugging; 11.3% of male and 5.6% of female students reported that they had an experience of kissing; 11.3% of male and 4.0% of female students reported that they had an experience of caressing; 27% of male and 18% of female students reported that they had an experience of sexual intercourse, 49.5% of male and 58.4% of female students reported to have been forced to have sex. Accordingly, 75.1% of male and 90% of female students heard of HIV. However, the majority of the students did not receive sexual or HIV health education in school, and less than half of the students showed positive attitudes on issues such as: If a friend is HIV positive should be continue their friendship with him/her; if an HIV-positive student should be allowed to continue her/his studying in school.

Figure 1–2 showed the prevalence of receiving HIV health education among adolescents by sex and parents educational level. Figure 3–4 showed the prevalence of sexual intercourse among adolescents by sex and parents educational level. Figure 5 showed the prevalence of sexual intercourse among adolescents by sex and family style. The results revealed that the prevalence of known and sexual intercourse is increasing with education level of father or mother. Highest prevalence (47.9%) of sexual intercourse was found among male adolescents who come from divorced family.

Discussion
The most serious finding in the present study was that about half of both males and females reported to have been forced to have sex. The possible reason for the number of students who have had forced sexual intercourse is higher than the number of students who have ever had sexual intercourse is that having sexual intercourse mainly refers to consensual sexual intercourse. It is very important to make youngsters understand their right to firmly deny being part of an undesired sexual encounter and also that forcing someone to have sex is grave offence that will be dealt with in a most strict possible manner. Several socio-demographic, family, and peer factors were associated with having intercourse. Those more likely to engage in premarital sex were older; majored in art; were from one-child [8], richer and/or divorced school, and less than half of the students showed positive attitudes on issues such as:

### Table 2. Knowledge, attitudes and practices related to HIV/AIDS in the past 12 month

<table>
<thead>
<tr>
<th>Questions with positive response</th>
<th>Male N=3133</th>
<th>N=3133</th>
<th>Female N=3214</th>
<th>N=3214</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you read pornography books, film or other materials in the past 12 months? (yes)</td>
<td>2177</td>
<td>69.5</td>
<td>2281</td>
<td>71.0</td>
</tr>
<tr>
<td>Have you received sexual health education in school? (yes)</td>
<td>293</td>
<td>9.4</td>
<td>319</td>
<td>9.9</td>
</tr>
<tr>
<td>Have you had any experience with hugging? (yes)</td>
<td>805</td>
<td>25.7</td>
<td>568</td>
<td>17.7</td>
</tr>
<tr>
<td>Have you had any experience with kissing? (yes)</td>
<td>353</td>
<td>11.3</td>
<td>181</td>
<td>5.6</td>
</tr>
<tr>
<td>Have you had any experience with caressing? (yes)</td>
<td>355</td>
<td>11.3</td>
<td>127</td>
<td>4.0</td>
</tr>
<tr>
<td>Have you ever had sexual intercourse? (yes)</td>
<td>845</td>
<td>27.0</td>
<td>578</td>
<td>18.0</td>
</tr>
<tr>
<td>Have you ever had forced sexual intercourse? (yes)</td>
<td>1552</td>
<td>49.5</td>
<td>1876</td>
<td>58.4</td>
</tr>
<tr>
<td>Have you received HIV health education in school? (yes)</td>
<td>366</td>
<td>11.7</td>
<td>324</td>
<td>10.1</td>
</tr>
<tr>
<td>Have you heard of HIV? (yes)</td>
<td>2354</td>
<td>75.1</td>
<td>2891</td>
<td>90.0</td>
</tr>
<tr>
<td>If your friend is HIV positive, would you continue your friendship with him/her? (Yes)</td>
<td>668</td>
<td>21.3</td>
<td>400</td>
<td>12.4</td>
</tr>
<tr>
<td>If a student is HIV positive, should she/he be allowed to continue his/her studying in school? (Yes)</td>
<td>1039</td>
<td>33.2</td>
<td>694</td>
<td>21.6</td>
</tr>
<tr>
<td>Do you know which of the following pathogens cause AIDS: bacteria, virus and fungus? (virus)</td>
<td>2582</td>
<td>82.4</td>
<td>3099</td>
<td>96.4</td>
</tr>
</tbody>
</table>

![Figure 3. Prevalence of sexual intercourse among adolescents by sex and father education](image)

![Figure 4. Prevalence of sexual intercourse among adolescents by sex and mother education](image)
families; had a mother with university or above education; had parents with a strict disciplinary style; had secondary-school close friends falling in love; and had current close friends living with boyfriends [11]. Our study also found that the highest prevalence (47.9%) of sexual intercourse was male adolescents who came from a divorced family. Interventions to protect young people from sexually transmitted diseases need to target early sex education and address peer and parents influences. However, it seems surprising that the number of students who have had sexual intercourse is quite higher than the number of students who have experience of kissing, which need further research in future.

Another finding of our study was that self-reported sex education among secondary school students is quite low. Thus, in the current scenario, sex education and awareness are paramount. Sex education can help children transform into well-adjusted adults with established sexual identity, functioning, and ability. However, some researchers found that sex education program did not alter students’ attitudes about premarital sex or monogamy among college students. We should strengthen sexuality education in other ways for secondary school students, which should comprise of physiological, psychological and social issues related to sex.

From our results, we observed that 65% of male and 71% of female students had read pornography books. Previous study results documented that the reproductive health service is lagging behind current attitudes and demands of university students [12]. The possible reason maybe that lack of sexuality education lead students to seek information about their bodies and the sexual act from misconformed sources like peers, media, and pornography [13]. Communication on sexual and reproductive health issue between adolescent and their parent was low. School based education is important to improve adolescent parent communication about sexual and reproductive health issues [14]. Thus, it is important to develop an open and healthy approach towards sex and sexuality and assist students to make well-thought judgments.

This study has several limitations. Direction of effects cannot be determined in correlation research. Retrospective reports of sexual behavior are subject to recall bias.

In conclusion education of the students on HIV/AIDS seems poorer at the secondary school in certain areas of China; more attention should be paid to those of senior grade students and students from divorced families.

Ethics Committee Approval: Ethics committee approval was received from the Ethics Committee of Wannan Medical College for this study.

Informed Consent: Informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – YY; Design - YY; Supervision - YY; Funding – WL, LH, YY; Materials – YJ; Data Collection and/or Processing – QG, DG; Analysis and/or Interpretation – LH; Literature Review – LW; Writing – XR; Critical Review – LH; Other – WLu.

Conflict of Interest: The authors have no conflict of interest to declare.

References