

Knowledge, Behavior and Attitudes Concerning STI Prevention among Out-of-School Youth in the Philippines

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Abstract The purpose of this study is to determine the current knowledge, behavior and attitude toward STI prevention among out-of-school youth in the Philippines. Anonymous self-administered questionnaires were distributed separately to 28 out-of-school youth (15 male, 12 female, one unspecified). The mean age of the subjects was 18.0 ± 3.0 years, with an overall age range of 15 to 24 years. The female respondents were younger than the male respondents on average. The out-of-school youth obtained information on STIs mainly from the media, and had fewer information sources than in-school students. Although the out-of-school youth had insufficient knowledge of STIs compared to the students, they were fairly knowledgeable about cervical cancer. They were also more sexually active than the students. The out-of-school youth consulted their parents on STI prevention, but received insufficient knowledge on STI prevention from just this source. It was concluded that out-of-school youth could constitute a high risk demographic for STIs, and health education may be essential to help them protect themselves from STIs.

Keywords Philippines, Out-of-School Youth, STIs, Prevention Education

1. Introduction

HIV/AIDS, a major sexually transmitted infection (STI), is prevalent in the Philippines, with one-third of new HIV infections occurring among young people aged 15–24 years in 2011–2012, a 10-fold increase from 2007–2010 [1-3]. According to the World Health Organization–Western Pacific Regional Office (WHO-WPRO), it is reported that the mean age of sexual debut for Filipinos is about 14–15 years, with 34% of this age bracket having multiple sexual partners [4]. Unfortunately, awareness of possible STIs is at

a low level among young Filipinos. In the Philippines, only 26% use some form of protection, usually condoms [5]. Thus, young women engage in unprotected sex, putting themselves at risk of contracting STIs [6, 7]. We demonstrated that many high school students in the Philippines feared STI infection due to insufficient knowledge, and felt anxiety about protecting themselves from STIs [8]. The low level of sexual knowledge and the risky sexual behavior of Filipinos contribute to the increasing prevalence of STIs in the Philippines [9, 10]. Therefore, sexual education may be necessary to prevent STIs among young women in the Philippines.

Meanwhile, according to the 2013 Functional Literacy, Education and Mass Media Survey (FLEMMS) [11], 4 million Filipino children and youth (aged 6 to 14 years, and 15 to 24 years, respectively) did not attend school. Some 22.9 percent of them were in a consensual union or marriage. Among females, four out of 10 were already married, while three out of 10 males had no interest in attending school [12]. These findings indicate that it may be more difficult for out-of-school youth to protect their bodies from STIs through a lack of opportunity to receive STI prevention education compared to students [12, 13]. Thus out-of-school youth may be at high risk in terms of contracting STIs. However, there are no reports on the current status of STI prevention among out-of-school youth in the Philippines. Thus we conducted the present study to determine the present knowledge, behavior and attitudes toward STI prevention among out-of-school youth in the Philippines, and compared the results with those already reported for a sample of high school students.

2. Materials and Methods

2.1. Materials

The subjects were out-of-school youth aged 15 to 24

years, who were not attending school, had not finished school (including elementary school) or any college or post-secondary school course, and were not working. They lived in the same barangays as the high school students who had already been researched. Those who could not read Tagalog or those suffering from mental illnesses were excluded. A health center had a list of out-of-school youth compiled by barangay health workers, and then called for the recruitment of the research participants, with the permission of the out-of-school youth's guardians. The youth were all from low- or middle-income families. The area where they lived was an urban city including a slum district, typical of the Philippines, about 22 kilometers south of Metro Manila, with a population of 505,000 (2015) [14].

2.2. Method

2.2.1. Questionnaire

An anonymous self-administered questionnaire was distributed to the participants, inquiring about their personal information (sex, age, etc.); information sources and knowledge (knowledge and understanding of prevention) on STIs (STIs in general, HIV/AIDS and cervical cancer); sexual behavior; attitudes toward sexual abstinence; counselors for discussing sexual problems; and opinions. A knowledge test on STIs based on various literature [15-18] covered STIs in general (15 items, scored from 1 to 15), HIV/AIDS (11 items, scored from 1 to 11), and HPV infection and cervical cancer (10 items, scored from 1 to 15). The range of possible total scores on the knowledge test was from 6 to 36. The researchers conducted trial tests on out-of-school youth (five male and five female) to determine whether the questionnaire items were appropriate for this demographic. There were no problems in this regard. Attitudes on STI prevention were evaluated using a Sexual Abstinence Behavior Scale comprising four items [19]. We classified the results into six gradations (for example, from 1 = "strongly disagree" to 6 = "strongly agree"), and then totaled the scores for the four items, producing a score from 6 to 24. The higher the score for each item, the higher the level of sexual abstinence.

2.2.2. Multidimensional Health Locus of Control (MHLC)

The MHLC is one of the scales used to evaluate reinforcements of health-related behavior [20]. It comprises three factors: Internal HLC (IHLC), wherein internal self-regulation is responsible for one's health/illness; Powerful Others HLC (PHLC), wherein one's health/illness is determined by powerful others; and Chance HLC (CHLC), wherein one's health/illness is a matter of fate, luck or chance. These three factors of the MHLC each have six gradations (for each item: 1 = "strongly disagree" and 6 = "strongly agree"), producing a total score ranging from 6 to 36. The higher the score for each item, the stronger the reinforcement of health control.

The questionnaires were delivered to the students at their

high schools, and to the out-of-school youth in the city hall.

2.3. Statistical Analysis

Data analysis was conducted using SPSS Statistics 18.0 for Windows. The descriptive statistics used were the mean, standard deviation, range and percentage. For the out-of-school youth, we used the abbreviation "OSY," and for the high school students, we used the term "Students." Comparisons between the scores of the OSY and the Students were performed using the Man-Whitney U test and the T-test, while analysis of sexual behavior and other items were performed using the Chi-square test. For the MHLC, comparisons among the three factors of the MHLC were performed using One-way ANOVA, while comparisons between the two groups were performed using the Man-Whitney U test.

2.4. Ethical Considerations

Participation in the study was voluntary, and the privacy and confidentiality of the participants was strictly protected. In cooperation with the Mayor, the city health office, the health center in A city, we presented this study to two principals, several teachers, all the OSY and their parent(s)/guardian(s), and received their informed consent. This study was approved by the mayor, the city health officer of the Department of Health in A city and the Ethical Committee of Kobe University Graduate School of Health Sciences.

3. Results

3.1. Demographic Characteristics

Table 1 shows a comparison of the ages of the OSY and the Students. Forty-three OSY were enrolled in this study, yielding 28 valid responses (a response rate of 65.1%). There were 15 males, 12 females and one respondent whose sex was unspecified.

Table 1. Comparison of Age among 2 Groups

	Out of school youth		In students		p
	n	Mean±SD	n	Mean±SD	
Total	(n= 28)	18.0±3.0	(n=500)	16.2±1.2	**
Male	(n= 15)	19.5±2.2	(n=245)	16.3 ±1.3	***
Female	(n= 12)	16.3±2.7	(n=250)	16.1±1.0	n.s
Mann-Whitney test					** p<0.01,*** p<0.001

The OSY ranged in age from 13 to 24 years, with a mean age of 18.0 ± 3.0 years. The mean ages of the male and female OSY were 19.5 ± 2.2 years and 16.3 ± 2.7 years,

respectively. There was a significant difference in mean age between the OSY and the Students. The mean age of the female OSY was lower than that of their male counterparts.

3.2. Knowledge and understanding of STI prevention

Table 2 shows a comparison of the knowledge and understanding of STI prevention between the two groups (OSY and Students). The rates at which the OSY knew the names of STIs were HIV/AIDS and the HPV vaccine 78.6%, STDs and syphilis 75%, cervical cancer and hepatitis ABC 64.3%, herpes 60.7%, chlamydia trachomatis and gonococcus 53.6% and HPV 50.0%, respectively. There were significant differences in the rates of knowing the names of STIs, HIV/AIDS, STDs, cervical cancer, hepatitis ABC, herpes, Chlamydia trachomatis, gonococcus and HPV, between the OSY and the Students. Regarding STI prevention in general, the rates at which the OSY understood "Whole STI" were "What are STIs?" 64.3%, "Asymptomatic infection," 71.4%, "Fetomaternal infection" 67.9%, "Excluding genital tract infection" 53.6%, "Risk factors of life style" 92.9%, "Sexual activity" 96.4% and "Check-ups" 85.2%, respectively. There were no significant differences between the two groups except in the case of "Excluding genital tract infection." The rates at which the OSY understood HIV/AIDS prevention were "What is HIV/AIDS?", 88.9%, "Infection manner" 60.7%, "Fetomaternal infection" 78.6%, "Sexual activity" 89.3% and "Prevention" 53.6%, respectively. Regarding "Fetomaternal infection," "Sexual activity," and "Prevention," the OSY understood significantly less than the Students ($p < 0.05$). The rates at which the OSY understood about cervical cancer prevention were "What is cervical cancer?" 92.6%, "Asymptomatic infection" 67.9%, "Infection manner" and "Prevention" 78.6% and "Vaccination" and "Check-up" 82.1%, respectively. The OSY understood more than the Students about "What is cervical cancer?" and "Prevention," while the Students understood more than the OSY about "Check-up." There were significant differences between the two groups in these areas. Especially regarding "STIs in general" and "HIV/AIDS," neither the OSY nor the Students understood well about "Asymptomatic infection," "Manner of infection" or "Prevention." The knowledge scores of the OSY were 10.2 ± 2.0 (range 5–14) for "STIs in general," 7.1 ± 2.4 (range 2–11) for "HIV/AIDS," 8.2 ± 1.5 (range 4–10) for "Cervical cancer," and 25.8 ± 4.4 (range 17–34) for "Total score," respectively. There were no significant differences between the two groups in terms of total scores.

3.3. Information Sources and the Best Counselors for STIs

Table 3 shows the information sources and the best counselors for STIs (multiple answers were possible).

Table 2. Comparison of knowledge and understanding prevention STIs among 2 groups

	Out of school youth (n=28)		In students (n=500)		p
	n	(%)	n	(%)	
Knowledge on STI					
1) HIV/AIDS	22	(78.6)	485	(97.0)	***
2) HPV vaccine	22	(78.6)	425	(85.0)	n.s
3) STD	21	(75.0)	475	(95.0)	**
4) Syphilis	21	(75.0)	403	(80.6)	n.s
5) Cervical cancer	18	(64.3)	476	(95.2)	***
6) Hepatitis ABC	18	(64.3)	475	(95.0)	***
7) Herpes	17	(60.7)	414	(82.8)	**
8) Chlamydia Trachomatis	15	(53.6)	401	(80.2)	**
9) Gonococcus	15	(53.6)	397	(79.4)	**
10) HPV	14	(50.0)	422	(84.4)	***
Understanding prevention					
Whole STI					
1) What is STIs?	18	(64.3)	393	(78.6)	n.s
2) Asymptomatic infection	20	(71.4)	304	(61.0)	n.s
3) Fetomaternal infection	19	(67.9)	249	(49.7)	n.s
4) Exclude genital tract infection	15	(53.6)	395	(79.0)	*
†5) Risk factors of life style	26	(92.9)	386	(77.2)	n.s
†6) Sexual activity	27	(96.4)	467	(94.9)	n.s
†7) Check up	23	(85.2)	465	(94.5)	n.s
HIV/AIDS					
†1) What is HIV/AIDS?	24	(88.9)	457	(91.4)	n.s
2) Infection manner	17	(60.7)	314	(62.7)	n.s
†3) Fetomaternal Infection	22	(78.6)	421	(84.2)	*
†4) Sexual activity	25	(89.3)	487	(97.4)	*
5) Prevention	15	(53.6)	349	(69.8)	*
Cervical cancer					
†1) What is Cervical cancer?	26	(92.6)	266	(53.2)	***
2) Asymptomatic infection	19	(67.9)	330	(66.0)	n.s
†3) Infection manner	22	(78.6)	360	(72.0)	n.s
†4) Prevention	22	(78.6)	145	(29.0)	***
†5) Vaccination	23	(82.1)	345	(69.0)	n.s
†6) Check up	23	(82.1)	468	(93.6)	*
Knowledge score					
	Mean±SD		Mean±SD		
Whole STI (15 items)	10.5±2.0		10.5±2.1		n.s
HIV/AIDS (11 items)	7.1±2.4		7.9±1.5		n.s
Cervical Cancer (10 items)	8.2±1.5		6.4±1.3		***
Total (36 items)	25.8±4.4		24.9±2.9		n.s

Chi-square test, Note. "†"Fisher's Exact- test, t-test * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3. Information source and the best counselors on STIs

	Out of school youth (n=28)		In students (n=500)	
	n	(%)	n	(%)
Information source				
Media	13	(46.3)	376	(75.2)
School	12	(42.9)	390	(78.0)
Internet	12	(42.9)	316	(63.2)
Hospital or Clinic	12	(42.9)	236	(47.2)
Home/Parents	11	(39.3)	218	(43.6)
Same sex friends	6	(21.4)	64	(12.8)
Magazine • Comics	2	(7.1)	132	(26.4)
Others	1	(3.6)	22	(4.4)
Opposite sex friends	0	0.0	42	(8.4)
Boyfriend/girlfriend	0	0.0	17	(3.4)
The best counselor				
Parents	17	(60.7)	176	(74.8)
Specialist of Health Office or	12	(42.9)	148	(59.2)
Teacher of school	1	(3.6)	80	(32.0)
Friend	1	(3.6)	65	(26.0)
Relative	1	(3.6)	33	(13.2)
Siblings	2	(7.1)	23	(9.2)
Other Specify.	0	0.0	11	(4.4)
Neighborhood	0	0.0	10	(4.0)

The rate at which the OSY obtained information on STIs from the “media,” “school,” the “Internet,” a “hospital or clinic,” “home/parents,” “same sex friends” and “magazines or comics” were 46.3%, 42.9%, 42.9%, 42.9%, 39.3%, 21.4%, and 7.1% respectively. Meanwhile, the rates at which the Students obtained information on STIs from the “school,” “media,” “Internet,” a “hospital or clinic,” “home/parents,” “same sex friends” and “magazines or comics” were 78.0%, 75.2%, 63.2%, 47.2%, 43.6%, 26.4% and 12.8%, respectively. The OSY were found to have fewer information sources than the Students. The rate at which the OSY selected “Parents,” “Specialist at a health office or hospital,” “Teachers at school,” “Friends,” “Relatives” and “Siblings” as the best counselors on STIs were 60.7%, 42.9%, 3.6%, 3.6%, 3.6% and 7.1%, respectively. The OSY and the Students both selected “Parents” as the best counselors on STIs. Some 26.0% of the Students selected “Friends”, while only 3.6% of the OSY selected “Friends.” The OSY thus had fewer counselors than the Students.

3.4. Sexual Behavior

Table 4 shows a comparison of sexual behavior by sex

Table 4. Comparison of sexual behavior “Yes” for gender among 2 groups

	Male				p	† Female				p
	Out of school youth (n=15)		In students (n=12)			Out of school youth (n=12)		In students (n=250)		
	n	(%)	n	(%)		n	(%)	n	(%)	
1) Do you have a special (boy/girl) friend□	9	(64.3)	94	(37.6)	n.s	9	(75.0)	75	(30.0)	**
2) Do you kiss boy/girl friend□	8	(57.1)	72	(28.8)	*	9	(75.0)	41	(16.4)	***
†3) Are you in love (include homosexual love) ?	2	(14.3)	148	(59.7)	**	4	(36.4)	174	(69.4)	*
4) Do you agree with sex before marriage?	6	(40.0)	34	(13.7)	**	3	(25.0)	7	(2.8)	**
5) Do you want to have sex with your boy/girl friend□	7	(50.0)	64	(25.6)	n.s	2	(16.7)	7	(2.8)	*
6) Did you already have sex with boy/girl friend or anyone?	5	(33.3)	26	(10.4)	*	2	(16.7)	4	(1.6)	*
†7) If you have sex with many persons or unknown persons, do you think that you are high risk for STD?	11	(78.6)	187	(75.4)	n.s	8	(72.7)	189	(78.4)	n.s

Chi-square test and Note. "†", Fishr's Exact- test for Female.Q3 and Q7

*p<0.05, **p<0.01, ***p<0.001

Table 5. Comparison of “abstinence” among 2 groups

	Out of school youth (n=24)	In students (n=489)	p	Sex experience (n=35)	Other (n=483)	p
	Mean±SD	Mean±SD		Mean±SD	Mean±SD	
1) Tell yourself you were making the right decision by waiting to have sex	4.5±1.9	4.9±1.5	n.s	3.9±1.9	5.0±1.4	***
2) Say “No” to sex	4.4±1.6	4.2±1.7	n.s	3.0±1.7	4.3±1.6	***
3) Tell her (him) that you wanted to wait to have sex	5.0±1.5	5.1±1.3	n.s	4.5±1.5	5.1±1.3	**
4) Avoid being pressured to have sex by making sure you are out with a group of people	4.8±1.4	4.8±1.4	n.s	4.1±1.3	4.8±1.4	**
Total score (4 items)	17.9±6.3	19.0±4.4	n.s	15.5±4.4	19.2±4.4	***

Mann-Whitney test

p<0.01, *p<0.001

between the OSY and the Students. The rates of affirmative answers to “Have you ever kissed?”, “Are you in love (including same-sex love)?”, “Do you agree with sex before marriage?” and “Have you ever had sexual intercourse?” were 57.1%, 14.3%, 40.0% and 33.3%, respectively, among the male OSY. They were more sexually active than the Students, except in regard to “Are you in love (including same-sex love)?”. Meanwhile, the rate of affirmative answers to “Have you ever kissed?”, “Are you in love (including same-sex love)?”, “Do you agree with sex before marriage?” and “Have you ever had sexual intercourse?” were 75.0%, 36.4%, 25.0% and 16.7%, respectively, among the female OSY. The female OSY were more sexually active than the female Students, indicating significant differences between them (p<0.001, p<0.05). Meanwhile, the OSY and the Students of both sexes understood that “Having multiple sex partners leads to higher risk of STIs,” indicating no significant difference between them for this item. However, in terms of experience of sexual intercourse, males were more sexually active than females among both the OSY and the Students.

3.5. Sexual Abstinence and MHLC

Table 5 shows the sexual abstinence scores. The scores for the OSY for “You tell yourself you are making the right decision in waiting to have sex,” “You say No to sex,” “You tell the other person that you want to wait to have sex,” and “You avoid being pressured to have sex by making sure you are out with a group of people,” and the total score, were 4.5 ± 1.9 , 4.4 ± 1.6 , 5.0 ± 1.5 , 4.8 ± 1.4 and 17.9 ± 6.3 , respectively. There were differences in the scores for “Sex experience” and “Other” between the two groups. The scores for “Sex experience” were significantly lower than those for “Other” among both the OSY and the Students ($p < 0.001$).

Table 6 shows a comparison of the total MHLC scores between the two groups. Some 62.8% of the OSY and 94.0% of the Students provided valid responses. The scores for the OSY for “Internal,” “Chance” and “Powerful Other” were 24.6 ± 4.2 , 23.4 ± 5.7 and 24.7 ± 6.3 , respectively. Hence there were no significant differences among the three factors for the OSY. On the other hand, the scores for the Students for “Internal,” “Chance” and “Powerful Other” were 24.4 ± 4.7 , 19.0 ± 5.2 and 25.7 ± 5.4 , respectively, indicating significant differences among the three factors ($p < 0.001$). Moreover, the score for “Chance” was significantly higher for the OSY than for the Students ($p < 0.001$).

Table 6. Comparison of “MHLC” total source among 2 groups

	Out of school youth (n=27)		In students (n=470)	p
	Mean±SD		Mean±SD	
Internal	24.6±4.2	n.p	24.4±4.7	n.s
Chance	23.4±5.7	n.p	19.0±5.2	***
Powerful Others	24.7±6.3	n.p	25.7±5.4	***

One way ANOVA for 3 factors, Mann-Whitney test for 2groups, *** $p < 0.001$

4. Discussion

This is the first time a study had been conducted to demonstrate that out-of-school youth (OSY) in the Philippines had less knowledge and understanding of STI prevention and were more sexually active than students. Furthermore, it was found that fewer information sources and less access to counselors on STI-related topics could contribute to low levels of sexual abstinence and risky sexual health behavior among OSY. The OSY were found to have less knowledge and understanding of STI prevention compared to the Students. As the Students studied about STIs in MAPEH classes at high school, they knew the meanings and consequences of STIs [21]. Several researchers demonstrated that OSY had less knowledge about STI or reproductive health, were at risky situation on STI, and needed sex education classes focused on preventive activities for STI and reproductive health in Nigeria, Uganda and Canada etc [22-26]. Therefore,

school-based programs to reduce sexual risk behaviors might be important for OSY [27, 28].

The OSY, who regarding counselors for STI-related issues for the OSY, the findings seemed to show a relationship whereby fewer options of counselors other than parents might result in the practice of risky sexual behavior. The OSY’s fewer information sources and counselors for STI prevention could be important factors contributing to their lower levels of sexual abstinence [29, 30]. The score for “Chance” in the MHLC was higher among the OSY than among the Students. This indicates that the OSY could not take control of their health, and engaged in risky sexual behavior [31].

The OSY are isolated from school society, because they must work to earn money or take care of child bearing [32, 33]. The WHO report recommends that adolescents need health services for STI prevention based on the country situation [34]. Isuugo-Abanihe et al reported that sex education activities were conducted by Non-Governmental Organizations (NGO), religious organizations, government institutions and other organizations for OSY in Nigeria [35].

What kinds of support are needed to protect OSY from STIs in the Philippines? First, sexual health education (including STI prevention) should be provided to OSY in the community. In particular, female OSY were found to drop out of school more frequently than male OSY due to pregnancy [36, 37]. Therefore, health centers should play vital roles in the promotion of sexual abstinence and safer sexual activity, including cervical cancer mobile clinics for girls and women in the community [18]. As some OSY cannot read sexual education program brochures written in Tagalog or English, educational materials that communicate to such OSY, such as through graphic illustrations (images such as cartoons) or text in their vernacular on the Internet, may be needed as familiar and easy-to-understand means for OSY to glean information. Therefore, it may be best to promote the provision of sexual health education for OSY through web-based education.

Internet-Based interventions strengthen sexual health knowledge among adolescents [38]. Barak & fisher reported that Internet-based approach affected health behavior for sexual and reproductive health promotion [39]. Additionally, there were several reports demonstrating Internet-based health promotion in Thailand [40] and Ghana [41].

Secondly, not only should educational programs on STI prevention for OSY cover STIs and preventive behavior, but they should also be provided through an active learning style involving peer education. Peer education particularly includes content that is relevant to OSY’s concerns and provides opportunities for them to ask and learn about STI prevention from their own peers. It has been found to be very helpful among teenagers, and can be achieved through events focused on young people in the community [42,43]. Health centers and schools need to provide consultation for such young people [44, 45]. It seems that health centers have important roles to play in STI prevention consultation

for OSY [46].

Since 2015, the Department of Education has started Alternative Learning System (ALS) in the Philippines [47-49]. This system is to stop dropout school children and youths, and to bring them back to school. It will be expected that web education, peer activity and consultation to prevention STI services for OSY will be offered to through cooperations among of schools, health centers, ALS schools and Education Institution.

5. Conclusions

We concluded that the OSY had less knowledge and understanding of STI prevention and were more sexually active than the Students, while fewer information sources and counselors for STIs could be contributing factors to low levels of sexual abstinence and engagement in risky health behavior among the OSY. Therefore, we must provide sexual education (including STI prevention) through web-based education and peer education, and set up a consultation system with nurses on STI-related problems for OSY in the community. Furthermore studies will be necessary to increase the number of OSY, and consider the contents of STI prevention education, peer activities and consultation system according to the target.

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