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Tanaka, Yuko
Llave, Cecilia L.
Yamashita, Tadashi
Matsuo, Hiroya

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The Current situation of knowledge, behavior and attitude related to STIs prevention among high school students in the Philippines

Yuko Tanaka[1], Cecilia L. Llave[2], Tadashi Yamashita[3], Hiroya Matsuo[4]

Abstract

Despite the increasing of sexually transmitted infections (STIs) among youth in the Philippines, relevant preventive education programs are not available, because of poverty and religious issues. The Purpose of this study is to determine the current knowledge, behavior and attitude towards STIs prevention among high school students in the Philippines. Anonymous self-administered questionnaires on STIs prevention were distributed separately to 250 male and 250 female high school students. The mean age of the respondents was 16.2±1.2, with an age range from 15-26 years. 78.0% of students obtained information on STIs from their schools. However, due to insufficient knowledge, around 30% of students feared STIs infection, and 75% of students want to chance to have a check up regarding STI. They are anxious to protect themselves. As a result, 75.8% of students consulted their parents on STIs prevention. However, even from their parents, students did not receive enough prevention knowledge. From this, it is clear that Filipino young people need appropriate health education, in order to protect themselves from STIs infection. It is essential that health professional play an important role to promote STI prevention education to students and parents.

Key Words

The Philippines, High school students, STIs, Prevention Education

Running title: STIs prevention among high school students in the Philippines

[1] Faculty of Nursing, Seisen University, Japan

[2] The National Cancer Institute Initiative Cancer Institute UP Manila PGH, Philippines

[3] Kobe City College of Nursing, Japan

[4] Kobe University Graduate School of Health Science, Japan

INTRODUCTION

In the Philippines, young women often engage in unprotected sex, and place themselves at risk of Sexually Transmitted Infections (STIs). One of such STIs, Cervical cancer, is the most common gynecologic malignancy in the Philippines[1)]. Alarming enough, the incidence of cervical cancer among teenagers is increasing. HPV, a leading cause of cervical cancer, is transmitted by sexual activity[2)]. The burden of cervical cancer in the Philippines remains high. Furthermore, HIV/AIDS, is one of the more serious STIs in the Philippines. Especially, one third of new HIV infections occurred among young people aged 15-24 years in 2011-2012, a 10-fold increase from 2007-2010[3)].

According to the World Health Organization–Western Pacific Regional Office (WHO-WPRO), the mean age of first sexual intercourse for Filipinos is 14-15 years old, and 34% of Filipino adolescents have multiple sexual partners. Unfortunately, awareness of the risk of STIs is at a low level among these individuals. Only 26% used some form of protection, most commonly condoms[4)]. The low level of sexual knowledge and the risky sexual behavior of Filipino adolescents contributes to the increased prevalence of STIs in the Philippines[5)]. Therefore, sex education may be necessary to prevent STIs among young women in the Philippines. Since 2010, the Philippines government has offered health education programs including STIs as MAPEH (Music, Art, Physical education and Health)[6)7)]. However, the Catholic Church, which has a great impact on education not only at school but also in the community in the Philippines, is opposed[8)9)]. Still now, there are no reports demonstrating the current status and issues of consciousness, attitude and practice on the STIs prevention among adolescents in the Philippines.

Thus, we conducted the present study to determine the present state of knowledge, behavior and attitude towards STIs prevention among high school students in the Philippines.

SUBJECTS & METHODS

1. Subjects

The Subjects were 500 adolescents (250 male, 250 Female) aged 15-16 who went to public high schools in the Philippines. 2 public high schools were selected from 4 high schools located in Muntinlupa city. We request to each school which 300 students and 200 students, respectively. They were students of low-income or middle-class families. Muntinlupa city is one of urban cities including slum in Philippines, It is 22 kilometers South of Metro Manila and its population is 487,376 (2013Y)[10)].

2. Methods

1) Questionnaires

The questionnaires consisted of questions on characteristics (sex, age), perception of STIs, information source on STIs, knowledge test on STIs (whole STIs, HIV/AIDS, and cervical cancer), sexual behavior and counselor for sexual problems. The knowledge test on STIs gathered from literature was about whole STIs (15 items, score 1~15), HIV/AIDS (11 items, score 1~11) and HPV infection and cervical cancer (10 items, score 1~10)[11)12)]. The total score range of the knowledge test was 1~36. High score shows well understanding of STIs. Firstly, researchers were performed this test for health centers staff (doctor, nurses and midwives). Then high school teachers evaluated whether the question items of the questionnaires were appropriate for Filipino students. Lastly, researchers confirmed it for 8 high school students (5 males and 3 females). Then, the questionnaires were translated from English to Tagalog by Filipino nurses.

2) Multidimensional Health Locus of Control (MHLC) Scales[13)]

MHLC is one of the scales used to evaluate reinforcement of health-related behaviors. It consist of 3 factors; Internal HLC (IHLC) is the extent to which one believes that internal factors are responsible for health/illness, Powerful Others HLC (PHLC) is the belief that one's health is determined by powerful others and Chance HLC (CHLC) is the extent to which one believes that health/illness is a matter of fate, luck or chance. Each factor of MHLC has 6 items (each item: 1=”strong disagree” to 6=”strong agree”) and we calculate the sum of items scoring (6~36). The factor which has the highest score reinforces Health control.

3) Research Procedure

We presented this study to all students and their parents (mother or father)/guardian through the parent-teacher administration (PTA) meeting and got informed consent from them. Questionnaires were delivered to students in sealed envelopes in class rooms divided by gender.

3. Statistical Analysis

Data analysis was conducted using SPSS Statistics 18.0 for windows. The descriptive statistics used were mean, deviation, range and percentage. Comparisons between sex experienced and others were performed with Chi-squire test. Comparisons among 3 factors of MHLC were performed using One-way ANOVA.

4. Ethical considerations

Participation in the study was voluntary, and privacy and confidentiality was strictly protected. This study proposal was approved by the Ethical Committee of Kobe University Graduate School of Health Sciences.

RESULTS

1. The demographic characteristics of the subjects

The subjects were 500 high school students, 250 male and 250 female. The valid response rate was 100%. The mean age was 16.2±1.2 years, with a range from 15-26 years. The mean age of male and female subjects were 16.2 ±1.3 years and 16.1±1.0 years, respectively.

2. Recognition of STIs

Table 1 shows the recognition of STIs in students. It shows the percentage of students who recognized of STI. 97.0%, 95.2%, 95.0% of students knew HIV/AIDS, Cervical cancer, and STIs/Hepatitis ABC, respectively. 79.4% of students knew Gonococcus, which had the lowest recognition of whole STIs.

Table 1. Recognition of STIs in high school students. n=500

	n	(%)
1) HIV/AIDS	485	(97.0)
2) Cervical cancer	476	(95.2)
3) Whole STIs	475	(95.0)
4) Hepatitis ABC	475	(95.0)
5) HPV vaccine	425	(85.0)
6) HPV	422	(84.4)
7) Herpes	414	(82.8)
8) Syphilis	403	(80.6)
9) Chlamydia Trachomatis	401	(80.2)
10) Gonococcus	397	(79.4)

3. Information sources on STIs

Table 2 shows information sources on STIs (plural answers) between no sex experienced and sex experienced in students. Most students obtained information regarding STIs from “School” (78%), “Media” (75%), “Internet” (63.2%) and “Home/Parents” (43.6%). However, 23.3% of sexual intercourse experienced (sexually active) chose “Same sex friends” regarding information sources.

Table 2. Information sources on STIs and the best counselor about sexual problem between no sex experienced and sex experienced.

	All students (n=500)		No sex experienced (n=469)		Sex experienced (n=30)	
	n	(%)	n	(%)	n	(%)
Information sources						
School	390	(78.0)	373	(73.3)	16	(53.3)
Media	376	(75.2)	353	(56.7)	22	(73.3)
Internet	316	(63.2)	298	(53.3)	17	(56.7)
Hospital or Clinic	236	(47.2)	222	(46.7)	14	(46.7)
Home/Parents	218	(43.6)	207	(36.7)	11	(36.7)
Magazine・Comics	132	(26.4)	130	(23.3)	1	(3.3)
Same sex friends	64	(12.8)	57	(3.3)	7	(23.3)
Opposite sex friends	42	(8.4)	41	(3.3)	1	(3.3)
Others	23	(4.4)	22	(3.3)	1	(3.3)
Boy/Girl friend	17	(3.4)	16	0.0	0	0.0
The best counselor						
Parents	379	(75.8)	360	(76.8)	18	(60.0)
Specialist	284	(56.8)	266	(56.7)	17	(56.7)
Teacher of school	148	(29.6)	137	(29.2)	11	(36.7)
Friend	109	(21.8)	97	(20.7)	12	(40.0)
Relative	52	(10.4)	48	(10.2)	4	(13.3)
Siblings	47	(9.4)	43	(9.2)	4	(13.3)
Other Specify.	18	(3.6)	18	(3.3)	0	0.0
Neighborhood	12	(2.4)	10	(2.1)	2	(6.7)
No counselor	7	(1.4)	7	(1.5)	0	0.0

4. Knowledge of STIs

Table 3 shows knowledge of whole STIs, HIV/AIDS and cervical cancer. It is the proportion of high school students who have selected the correct answer in the knowledge of STIs. HIV/AIDS was well known by the students. With regard to STIs, they knew “Asymptomatic infection” (61.0%), “Fetomaternal infection” (49.7%), “External genital tract infection” (79.2%), “Lifestyle is one of the risk factors” (77.2%), “Sexual activity is related to STIs” (94.9%) and “The need for check-up” (94.5%). With regard to HIV/AIDS, they understood “Infection manner” (62.7%), which included “Receiving blood transfusion will increase the chance to get infection by HIV.” “People get HIV infection by sharing needles used by others.” “Pregnant women with HIV can infect the fetus.”, (87.8%), (75.6%)and (84.2%), respectively.

Then it includes daily life for infection manner, “People can get HIV infection by being bitten by mosquito who has just bitten a person with HIV.” “People can get HIV infection by sharing

utensils with AIDS patients." "HIV infection can spread from person to person through contaminate toilet with AIDS patients.". These questions are reverse items. The percentages of correct answers in these three questions were (50.0%), (27.4%), and (61.8%), respectively.

On the prevention of AIDS, 69.8% of students understood "condoms" which included "Using condom properly whenever having sex is one of the effective means of protection against HIV infection." (92.6%) and "vaccine" which included "Nowadays HIV infected people cannot be treated by AIDS vaccine." (47.0%). With regard to cervical cancer, 53.2% of students knew the current status of cervical cancer in Filipino women. They knew "Asymptomatic infection" (66.0%), "Infection manner" (72.0%) and "Prevention" (29.0%) with "condoms not fully preventing HPV infection". 69.8% of students understood the "Vaccination" available today does not treat the cervical cancer itself. 93.6% of students understood the need for check-ups. The average scoring of knowledge test was 26.2±2.8 (full score was 36). Therefore, students understood 72% of STIs knowledge.

Table 3. The proportion of High school students who have selected the correct answer in the knowledge of STIs. n=500

	Questions	n	(%)
Whole STIs	1) What is STIs?	393	(78.6)
	2) Asymptomatic infection	304	(61.0)
	3) Fetomaternal infection	249	(49.7)
	4) Exclude genital tract infection	395	(79.0)
	5) Risk factors of life style	386	(77.2)
	6) Sexual activity	467	(94.9)
	7) Check up	465	(94.5)
HIV/AIDS	1) What is HIV/AIDS?	457	(91.4)
	2) Infection manner	314	(62.7)
	3) Fetomaternal Infection	421	(84.2)
	4) Sexual activity	487	(97.4)
	5) Prevention	349	(69.8)
Cervical cancer	1) What is Cervical cancer?	266	(53.2)
	2) Asymptomatic infection	330	(66.0)
	3) Infection manner	360	(72.0)
	4) Prevention	145	(29.0)
	5) Vaccination	345	(69.0)
	6) Check up	468	(93.6)

5. Sexual behavior

Table 4 shows the sexual behavior of the students. 22.6%, 64.7% of students experienced "Kiss" and "love (include homosexual love)". 8.2% of students agreed premarital sex (PMS). 6.0% of students experienced "sexual intercourse". There were no significant differences in knowledge scores between "Sex experienced" and "not experienced" (26.2±2.8, 25.7±2.9, p=0.43). Then, with regard to anxiety on STIs, 30.8% of students who had experienced sexual intercourse answered "yes", while, 34.1% of students who have not experienced answered "yes". There were no significant differences (using the Chi-square test, p=0.83) between the 2 groups. 75% of all students wanted a check-up for STIs.

Table 4. Sexual behavior in high school students. n=500

		n	(%)
1) Do you have a special (boy/girl) friend?	Yes	169	(33.8)
	No	331	(66.2)
2) Do you kiss boy/girl friend?	Yes	113	(22.6)
	No	387	(77.4)
3) Are you in love (include homosexual love)?	Yes	322	(64.7)
	No	176	(35.3)
4) Do you agree with sex before marriage?	Yes	41	(8.2)
	No	458	(91.8)
5) Do you want to have sex with your boy/girl friend?	Yes	68	(13.6)
	No	431	(86.4)
6) Did you already have sex with boy/girl friend or anyone?	Yes	30	(6.0)
	No	469	(94.0)
7) If you have sex with many persons or unknown persons, do you think that you are high risk for STIs?	Yes	376	(76.9)
	No	113	(23.1)

6. Counselor about sexual problems

Table 2 shows "the best counselor about sexual problems" for the students. 75.8% of students selected "Parents" as No.1 counselor. "Specialist of Health Office or Hospital" (56.8%); and "Teacher of school" (29.6%) followed. Next, 21.8% of students selected "Friend". However, sex experienced students more often selected "Friend" (40%).

7. MHLC for selected students

Table 5 shows MHLC for selected students. 94.0% of students who answered were analyzed as valued response. The highest score among the 3 factors was "Powerful Other" as PHLC 25.7±5.4. Secondly was "Internal" as IHLC 24.4±4.7, thirdly was "Chance" as CHLC19.0±5.2. There were significant differences among the 3 factors by one-way ANOVA ($p<0.001$).The high items of PHLC were"Having a regular check up by my physician is the best way for me to avoid

illness” 4.8±1.5 and “Whenever I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me” 4.8±1.4. On the other hand, the low items of PHLC were “My family has a lot to do with my becoming sick or staying healthy.” 3.8±1.7 and “Health professionals control my health” 3.8±1.6.

Table 5. The attitude toward to health assesed by MHLC Scales in high school students. n=470

			mean±SD	p
Internal	13)	If I take care of myself, I can avoid illness.	5.0±1.4	
	17)	If I take the right actions, I can stay healthy.	4.7±1.4	
	12)	The main thing which affects my health is what I myself do.	4.6±1.3	
	8)	When I get sick, I am to blame.	3.8±1.5	
	1)	If I get sick, it is my own behavior which determines how soon I get well again.	3.7±1.6	
	6)	I am in control of my health.	2.6±1.5	
Chance	4)	Most things that affect my health happen to me by accident.	3.8±1.4	
	11)	My good health is largely a matter of good fortune.	3.4±1.7	
	2)	No matter what I do, if I am going to get sick, I will get sick.	3.1±1.6	
	16)	If it's meant to be, I will stay healthy.	3.1±1.6	
	15)	No matter what I do, I 'm likely to get sick.	3.0±1.5	
	9)	Luck plays a big part in determining how soon I will recover from an illness.	2.6±1.5	
Powerful Other	3)	Having regular check up with my physician is the best way for me to avoid illness.	4.8±1.5	
	14)	Whenever I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	4.8±1.4	
	18)	Regarding my health, I can only do what my doctor tells me to do.	4.4±1.4	
	5)	Whenever I don't feel well, I should consult a medically trained professional.	4.2±1.5	
	7)	My family has a lot to do with my becoming sick or staying healthy.	3.8±1.7	
	10)	Health professionals control my health.	3.8±1.6	
Subscale		Internal	24.4±4.7	***, ***
		Chance	19.0.±5.2	***
		Powerful Others	25.7±5.4	***

One way ANOVA and the Tamhane's T2 test was used for group comparisons. ***p<0.001

* MHLC (Multidimensional Health Locus of Control) Scales

DISCUSSION

This is the first time to demonstrate that high school students in the Philippines have a lack of knowledge of STIs prevention, which may result in much anxiety about STIs infection for students, and then they consult their parents about sexual health problems.

In our study, around 80% of students recognized various kinds of STIs, however, they did not understand the infection manner of STIs. Especially, with regard to HIV/AIDS, they did not understood "Infection manner" about "shaking hands", "toilet", "mosquitos", and "utensils" for daily life. They did not only not know how to prevention HIV/AIDS, but also it might be released prejudice for HIV/AIDS' patients among teens. Although, uterine cervical cancer is a serious problem like AIDS in the Philippines[2], uterine cervical cancer' understanding in students were significantly lower than HIV/AIDS. It seems likely that students have not learned enough about infection manner, symptoms and prevention of STIs at school. In the Philippines, still now, there are no useful text books for students on sexual health education including STIs prevention[7]. Teachers and school nurses educated students on STIs prevention using copies of limited documents and medical text books which they selected. Thus, students might learn only the names of STIs. Since 2010, the Philippines government has offered health education programs including STIs as MAPEH (Music, Art, Physical education and Health)[7]. However, the Catholic Church, which has a great impact on education not only at school but also in the community in the Philippines, is opposed [8][9]. Therefore, teachers and school nurses did not have enough opportunity to learn about the education programs on STIs offered by the government. This could be contributing to the lack of understanding of STIs prevention in students in the Philippines.

As for behavior on STIs prevention, 22.6%, 64.5% of students experienced "Kiss" and "love (include homosexual love)" respectively[14]. 8.2% of students agreed PMS and 6% of students were sex-experienced. The nationwide Young Adult Fertility and Sexuality Study among youths aged 15-19 in the Philippines reported that 17.0% adolescents have had engaged in PMS[15][16]. Therefore, the rate of sexual intercourse experience in our study was less than the national average[18]. The majority of the students in our study may be conservative about sex and have kept their virginity. This conservative attitude may be influenced by strong religious beliefs and deep-rooted cultural values[18]. There is the possibility that the Catholic Church may have a strong influence on people's lives in our study's local community.

By the way, 75.8% of all students had consulted to the parents about STIs. It is well known that sexual active teenager to protect seek to get more sexual information[19] and to protect themselves from both unplanned pregnancy and HIV/AIDS[20]. Family is one of important environments

that is associated with a range of social and emotional behaviors of children[21]. Especially, parents influence adolescents' sexual behavior [22]. Thus, students might receive advice from parents on STIs prevention at home[23]. Knowledge such as prevention and transmission of STIs (including HIV) is at a higher level among students with more sexual experience[24]. However, there was no significant differences in anxiety and knowledge on between sex experienced students and not experienced students. It was suggested that parents might not have enough knowledge on STIs prevention, or they might be not taught properly to children. It showed that the attitude of STIs prevention in students assessed by MHLC. "Powerful others" was the strongest of the 3 factors of MHLC. Students' health control was reinforced by parents or health specialists. People visit church to pray with family on every weekend in the Philippines, which results in strengthening the family ties[25][26].

Therefore, students may ask to parents about sexual problems of STIs and follow the opinion of parents and church.

This study may not be a representative of the recognition, knowledge and attitude of the general adolescent population in the Philippines. However, this pilot study will serve as the starting ground to determine the feasibility of subsequently conducting a more extensive research to include a bigger population encompassing all economic status levels.

We concluded that most students obtained information on STIs mainly from schools which was insufficient, and had the anxiety to protect their own health from STIs by themselves. Although students consulted their parents on STIs prevention, they could not receive enough prevention knowledge for STIs from parents. Filipino young people need appropriate health education, in order to protect themselves from STIs infection. It is essential that health professionals play important roles in the promotion of STIs prevention education to students and parents.

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