

Knowledge of prevention of sexually transmitted infections of high school students in Nam Sach district, Hai Duong province, in 2023

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ABSTRACT

Objective: To describe knowledge about preventing sexually transmitted infections among high school students. **Method:** A cross-sectional study was conducted with 555 high school students in Nam Sach district, Hai Duong province, in 2023. **Results:** The percentage of students with general knowledge about preventing sexually transmitted infections is 66.5%. **Conclusion:** One-third of high school students lack accurate information about sexually transmitted infections.

Keywords: Sexually transmitted infections, high school student, Nam Sach district, Hai Duong province

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INTRODUCTION

Sexually transmitted infections (STIs) are one of the most severe public health problems worldwide, both in developed and developing countries. According to the World Health Organization (WHO), in 2016, the annual incidence was 357 million cases, including chlamydia (131 million), gonorrhea (78 million), syphilis (5.6 million), and trichomoniasis (143 million) [1] [2]. Adolescents are aged 10 to 19 [3]. Adolescence is a transitional period from childhood to adulthood. Therefore, adolescents have specific physiological characteristics such as liking to experiment, exploring one's abilities, and being active and creative. With these characteristics, adolescents are at high risk of contracting STIs in the context of industrialization. The high prevalence of STIs in adolescents is due to increased risk behaviors, earlier sexual intercourse, multiple sexual partners, and lack of knowledge about prevention methods [4]. The adolescents interviewed seemed to be more concerned about avoiding pregnancy (92.9%) than protecting

themselves from infections (74.5%) when having sex, and the majority had misconceptions about measures to prevent diseases and contraception [5]. Many studies have shown that adolescents who start sexual activity before the age of 16 are at higher risk because most of these sexual encounters are not fully protected by the use of condoms [4] [6]. Furthermore, lack of knowledge about STIs, transmission, symptoms, social stigma, low perceived risk, lack of trust from partners, and confidentiality of personal information cause delays in seeking medical services for examination and treatment. Therefore, this increases the possibility of secondary transmission and the risk of worse consequences.

Vietnam's population aged 10-19 accounted for 14% in 2024 [7]. According to UNFPA and the Ministry of Health, Vietnamese adolescents face several sexual and reproductive health challenges, including STIs, early sexual activity, unwanted pregnancies, abortions, and lack of sexual health knowledge [8]. Hai Duong is the industrial, commercial, service, and

tourism center of the Northern coastal region and the Northern provinces, including 13 districts and towns with 266 communes, wards, and towns. The population in 2021 is 1,705 million [9]. Hai Duong province has 66 high schools and vocational training centers, including six high schools in Nam Sach district [10]. Up to now, there has been no research on the issue of knowledge about sexually transmitted infections of students studying at high schools in Nam Sach district. Therefore, this study aimed to explore high school students' knowledge about preventing STIs.

METHOD

Design, subjects, location, and time

In 2023, we conducted a cross-sectional survey involving 555 high school students enrolled at Nam Sach High School in the Nam Sach district of Hai Duong province.

Information collection tools and techniques

We collected information from the participants using a self-completed questionnaire that adapted the Tran Thi Tuyet Nga [11] and Esther O. Oluwole [12] questionnaires. The questionnaire consists of General Information and Knowledge on STI prevention.

Data Processing and Analysis

We entered data using Epidata version 4.0 and analyzed it using Stata 18.0. Descriptive statistical analysis calculated frequencies, percentages, numbers, and mean values.

RESULTS

Characteristics of the research subjects

Table 3.1. Characteristics of the research subjects

	Variables	n	%
Grade	10	223	40,2
	11	242	43,6
	12	90	16,2
Gender	Male	168	30,3
	Female	387	69,7
Academic performance last year	Excelent	282	50,8
	Good	255	45,9
	Others	18	3,3
Family economic status	Wealthy	16	2,9
	Middle	504	90,8
	Poor	29	6,3
Father's education	University	96	17,3
	High school	308	55,5
	Lower than high school	151	27,2
Mother's education	University	132	23,8
	High school	243	43,8

Lower than high school	180	32,4
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Comments: The study was conducted on 555 students, of which the proportion of male students was 30,3%, female students was 69,7%. Most students were excellent and fair: 50.8% excellent, 45.9% fair. Most of the students lived with their parents and siblings 96.4%. Most families had no marital problems; the rate of cohabitation was 91.9%, while a low rate did not live together (8.1%). Most of the families were of average economic status (90.8%), a few were rich (2.9%), and poor/near poor (6.3%). Most parents' education was high school: father (55.5%), mother (43.8%). There was still a high rate of parents with secondary education or lower (27.2% and 32.4%).

Knowledge about STI prevention

Table 3.2. Knowledge about sexually transmitted infection

	Knowledge	n	%
Types of sexual intercourse that lead to STIs	Vaginal sex	428	77,1
	Oral sex	228	41,1
	Anal sex	260	46,9
	Unknown	4	0,7
Names of some sexually transmitted infections	HIV/AIDS	515	92,8
	Gonorrhea	260	46,9
	Syphilis	319	57,5
	Hepatitis B	110	19,8
	Candida infection	203	36,6
	Genital herpes	327	58,9
	Genital warts (HPV)	320	57,7
Symptoms of some sexually transmitted infections	Chlamydia	104	18,7
	Abnormal discharge from the genital area	418	75,3
	Ulcers/pain in the genital area	424	76,4
	Painful urination, burning urination	291	52,4
Consequences of some sexually transmitted infections	Ejaculation during sleep	91	16,4
	Infertility	440	79,3
	Obstructed fallopian tubes, ovaries	392	70,6
	Cervical cancer	380	68,5
	Unknown	2	0,4

Comments: HIV/AIDS is the most well-known (92.8%), and only about 1/5 of students knew that Hepatitis B and Chlamydia are STIs. Most students understood that vaginal sex is a form of transmission (77.1%), and nearly 1/2 of students were aware of oral sex and anal sex. Most students recognized the symptoms and consequences of STIs. In addition, a small number of students did not know about the implications (0.4%), did not know about the forms of transmission (0.7%), and nearly one-fifth of students still responded that ejaculation during sleep is a manifestation of STIs.

Table 3.3. Knowledge of preventive measures and mean

	Knowledge	n	%
Vaccin	HIV/AIDS	171	30,8
	Gonorrhoea	141	25,4
	Syphilis	156	28,1
	Hepatitis B	260	46,9
	Chlamydia	99	17,8
	Candida infection	175	31,5
	Genital herpes	175	31,5
	Genital warts (HPV)	178	32,1
	Unknown	12	2,2
STI prevention	Condoms	503	90,6
	Contraceptives	263	47,4
	No means	43	7,8
	Unknown	2	1,3
Sellers	Health Station	254	45,9
	Pharmacy	433	78,2
	Hospital	317	57,2
STI prevention methods	No promiscuity	483	87,0
	Use condoms correctly	389	70,1
	Be faithful to one partner	244	44,0
	Don't know	1	0,2
Reliable source of information	Teachers	212	38,2
	Mass Media	254	45,8
	Healthcare Workers	415	74,8
	Books and Documents	236	42,5

Comments: Only about half of students knew that condoms are the most common method for preventing STIs. The measure of “No promiscuous sex” is the most widely recognized (87.0%). Concerning STI vaccines, just over one-third of students were aware of HPV vaccines, while nearly half were knowledgeable about hepatitis B vaccines. Students identified health workers (74.8%) as the most reliable source of information, followed by the mass media (45.8%).

Table 3.4. Knowledge about condoms in preventing STIs

	Knowledge	n	%
When to use condoms	Prevention of pregnancy	430	77,5
	Prevention of STIs	393	70,8
	Prevention of both pregnancy and STIs	325	58,6
	Don't know	57	10,3
Condoms for Gender	Male Condoms	432	77,8
	Female Condoms	201	36,2
	Unisex Condoms	180	32,4

Safety Level	Unknown	102	18,4
	Very Safe	65	11,7
	Safe	317	57,1
	Unsafe	39	7,0
	Unknown	134	24,2
Effectiveness of STI prevention	High effectiveness	198	35,7
	Low effectiveness	202	36,3
	Ineffective	32	5,8
	Unknown	123	22,2

Comments: Nearly 60% of students were aware that condoms provide both contraceptive and STI prevention. Most students recognized male condoms (77.8%), but only 36.2% knew about female condoms. Almost 60% of students believed that using condoms is safe, while only 7.0% thought it is insecure. More than one-third of students considered STI prevention to be highly effective.

DISCUSSION

Forms of sexual intercourse leading to STI transmission

Most students were aware of vaginal sexual intercourse, accounting for 77.1%. This was followed by anal sexual intercourse (46.9%) and oral sexual intercourse (41.1%). These results align with the study conducted by Paganella, M. P., da Motta, L. R., et al. in 2021 [13] and the study by M. Bergamini [14]. However, our findings are lower than those of T. Raia-Barijat's study in 2020, which reported rates of 97.2%, 96.3%, and 84.7%, respectively [15]. This difference may be attributed to the author's study being conducted on medical students in France, who likely possess more knowledge than high school students.

Some STIs

The rate of students knowing the names of STIs is uneven. Of which, HIV/AIDS is known to most students, with 92.8% lower than the studies of author Tran Thi Tuyet Nga 2020 (95.0%) [11] and author Nguyen Duc Thanh 2013 (99%) [16]. Next is genital herpes and genital warts (HPV), nearly 60.0% higher than the study of author Le Thi Hai Ha [17] with rates of (19.2% and 29.0%)

respectively, and Esther O Oluwole's survey in 2020 with rates of (41.7%; 44.7%). The lowest rates were hepatitis B and chlamydia, with 18.74% and 19.82%, lower than the study by author Le Thi Hai Ha [17]. Meanwhile, Chlamydia is one of the four most common STIs in the world [18] [19]. In the SAVY2 survey, hepatitis B emerged as the most recognized STI, with a rate of 68.2% among the 14-17 age group [20]. This can be attributed to the nationwide scope of SAVY2, encompassing both urban and rural areas and leading to a higher awareness of hepatitis B among adolescents aged 14-17.

Other STIs, such as gonorrhea and fungal infections, account for a low proportion, with 46.9% and 36.6%, respectively, lower than in other studies [11] [21]. It may be explained that the media mainly focuses on HIV/AIDS, and other STIs are rarely mentioned. Students do not have any subjects or sources of information about STIs. Therefore, there is a great need for more health education and communication programs about HIV/AIDS as well as other STIs so that students have more complete and comprehensive knowledge.

Symptoms of STIs

The most common symptoms were abnormal genital discharge and genital ulcers/pain, with rates of 75.3% and 76.4%, respectively, followed by painful urination and burning urination (52.4%). This rate is similar to the study by author Nguyen Duc Thanh (2013) with 71.4%, 70.7%, and 56.0% [16]. However, it is higher than the study by author Tran Thi Tuyet Nga 2020 with rates of 65.7%, 64.9%, and 45% [11] and the survey by author Le Thi Hien (2018) [22] with rates of 66.3%, 67.4%, and 50.6%, respectively. Sixteen point four percent of students still believe that ejaculation during sleep indicates sexually transmitted infections (STIs), a figure that aligns with Tran Thi Tuyet Nga's 2020 study, which reported 15.9%. The lack of accurate knowledge among students about STI symptoms can lead to delays in seeking medical treatment, severely affecting the effectiveness of subsequent disease management.

Consequences of STIs

Most students were aware that the consequences of STDs include infertility (79.3%), inflammation of the fallopian tubes and ovaries (70.6%), and cervical cancer (68.5%). These findings surpass those from Nguyen Duc Thanh's study (2013), as well as Tran Thi Tuyet Nga's survey in 2020 (58.4%, 55.7%, and 64.1%), and Esther O Oluwole and colleagues' research in 2020 (74.4%, 66.1%, and 59.2%). Only 0.4% of students were unaware of the consequences of STDs, which is lower than the 11.4% seen in Tran Thi Tuyet Nga's study from 2020 [16]. With the rise of media, information about STIs has been widely disseminated online, making it easier for students to access and find information. In our study, the rate at which students found information about STIs via the internet may have contributed to differences in our results compared to previous studies.

Means of preventing STIs

In our study, 90.6% of students answered correctly about condoms to prevent STIs, which is higher than the study by author Tran Thi Tuyet Nga in 2020 (82.8%), the study by Le Thi Hai Ha in 2020 in Laos (82.3%) and the study by Esther O Oluwole and colleagues in 2020 (73.3%) [23], [12], [11]. This difference may be due to the low percentage of students in my study who thought that condoms were highly effective in preventing STIs, 35.7%.

The percentage of students who believe that using contraceptives prevents STIs in my study (47.4%) is higher than the study by Tran Thi Tuyet Nga in 2020 (4.6%) and the study by Le Thi Hai Ha in 2020 in Laos (41.5%) and the study by Esther O Oluwole and colleagues in 2020 (19.2%) [23], [12], [11]. This is essential knowledge to help students proactively protect themselves from STIs.

CONCLUSIONS

In 2023, we surveyed 555 Nam Sach High School students in Nam Sach District, Hai Duong, about their knowledge of preventing sexually transmitted infections. The results were that 66.5% of students had general knowledge about preventing sexually transmitted infections.

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