

## PERCEPTIONS ABOUT HIV/AIDS AND HIV PREVENTION BEHAVIORS AMONG UNIVERSITY STUDENTS IN INDONESIA

*Persepsi tentang HIV/AIDS dan Perilaku Pencegahan HIV pada Mahasiswa Universitas di Indonesia*

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### **Abstrak**

**Latar belakang:** Persepsi individu adalah salah satu faktor yang mungkin mempengaruhi perilaku kesehatan individu tersebut, termasuk perilaku seksual berisiko, yang menempatkan mahasiswa/i berisiko tertular infeksi HIV.

**Tujuan:** Penelitian ini bertujuan untuk mengetahui hubungan antara persepsi tentang HIV/AIDS dengan perilaku pencegahan HIV (abstinence, be faithful, dan condom use) pada mahasiswa/i di Semarang, Jawa Tengah, Indonesia.

**Metode:** Penelitian ini menggunakan pendekatan cross sectional. Data diambil dari 296 responden mahasiswa S1 dengan menggunakan kuesioner tentang AIDS health belief questionnaire (AHBQ) dan perilaku pencegahan HIV. Chi-square test digunakan untuk menganalisa data.

**Hasil:** Sekitar 36,8% mahasiswa/i pernah melakukan hubungan seksual sebelum menikah, dari jumlah tersebut 53,2% pernah melakukan hubungan seksual dengan lebih dari satu pasangan dan 68,8% tidak menggunakan kondom. Persepsi tentang keuntungan dari perilaku pencegahan HIV (perceived benefits) dan persepsi hambatan untuk pencegahan infeksi HIV (perceived barriers) berhubungan signifikan dengan perilaku abstinence ( $\chi^2 = 6,700, p < ,05$  dan  $\chi^2 = 7,471, p < ,05$ ), dan penggunaan kondom ( $\chi^2 = 9,357, p < ,01$  dan  $\chi^2 = 14,63, p < ,01$ ). Akan tetapi, persepsi tentang keseriusan penyakit HIV dan persepsi kerentanan terhadap HIV tidak berhubungan dengan perilaku pencegahan HIV/AIDS.

**Kesimpulan:** Promosi kesehatan tentang pencegahan HIV harus tepat bagi usia remaja terutama mahasiswa untuk meningkatkan persepsi tentang keuntungan dari perilaku pencegahan HIV dan menurunkan persepsi hambatan untuk mencegah infeksi HIV.

**Kata kunci:** persepsi, HIV/AIDS, pencegahan HIV, mahasiswa

### **Abstract**

**Background:** Personal perception is one of factors that would affect health behavior of individual, including risky sexual behavior, which places university students at risk for HIV infection.

**Objective:** The purpose of this study was to examine the associations between perceptions about HIV/AIDS and HIV prevention behaviors including abstinence, be faithful, and condom use among university students in Semarang, Central Java, Indonesia.

**Methods:** A cross-sectional study was conducted in this study. Data were collected from 296 undergraduate students using self-administered questionnaire, which consisted of AIDS health belief questionnaire (AHBQ) and HIV prevention behaviors questions. Chi-square tests were used for data analysis.

**Results:** Roughly 36.8% of university students ever had sexual intercourse before married, 53.2% had multiple sexual partners, and 68.8% did not use a condom consistently. Perceived benefits from HIV prevention behaviors and perceived barriers to prevent HIV infection were significantly associated with abstinence ( $\chi^2 = 6.700, p < .05$  and  $\chi^2 = 7.471, p < .05$ , respectively), and condom use ( $\chi^2 = 9.357, p < .01$  and  $\chi^2 = 14.63, p < .01$ , respectively). However, perceived severity of HIV/AIDS, and perceived susceptibility to HIV/AIDS were not associated with abstinence, be faithful, and condom use.

**Conclusion:** The findings suggest that HIV prevention campaigns should be designed appropriately to improve perceived benefits from HIV prevention behaviors and decrease perceived barriers to prevent HIV infection.

**Keywords:** perceptions, HIV/AIDS, preventions, university students

## INTRODUCTION

Young people (15-24 years old) including university students are marked by social transitions such as finishing schools, independent living, and first sexual relationship.<sup>1</sup> The phase of transition and sexual activity among young people represented a major challenge in HIV prevention among young people.<sup>2</sup> Globally, an estimated 2.1 millions individuals became newly infected with HIV in 2013 were almost 60% among young people, and about 5.4 millions adolescents and young people were living with HIV.<sup>2</sup> In Indonesia, the latest survey on HIV/AIDS in July-September 2014 by Ministry of Health (MOH) of Indonesia showed that from 22,869 HIV infection cases, 21.8% were young people. Moreover, the survey also showed that Central Java Province was the 6<sup>th</sup> rank of HIV infection cases in Indonesia with 9,032 HIV and 3,767 AIDS cases, and 9.8% were young people.<sup>3</sup>

Semarang is the largest city of Central Java Province with the highest prevalence of HIV/AIDS in the province. The HIV/AIDS prevalence in Semarang had been increased based on the data in 2010 about 602 cases and in 2014 about 1454 cases, 437 were young people.<sup>4</sup> The predominant mode of HIV transmission in Semarang was through heterosexual contact, which accounts for 82.8% of new HIV/AIDS cases.<sup>4</sup> A study by Suryoputro et al. showed that 11% of 1000 university students in Central Java including Semarang had engaged with premarital sexual intercourse with only 30% of male

and female respondents had reported condom use. A study by Windiarti also reported that 20.4% of 250 university students in Semarang had engaged with premarital sex.<sup>5</sup> Moreover, a study by Widyastari et al., revealed that approximately 5-20% of young people including university students in Semarang had engaged with premarital sex intercourse.<sup>6</sup> In the absence of a core vaccine for HIV infection, the prevention and education remain the primary strategies against HIV transmission.<sup>7</sup> The most frequent method used for HIV/AIDS prevention on practice of safe sex is "ABC" approach including abstinence, be faithful, and condom use.<sup>3,7</sup> ABC refers to individual behaviors, but it also refers to the program approach and content designed to lead HIV prevention behavior.<sup>8</sup>

In addition, HIV prevention behavior is determined by personal beliefs or perceptions about a disease and the strategies available to decrease HIV infection occurrence.<sup>9</sup> Personal perceptions are influenced by the whole range of intrapersonal factors affecting health behavior.<sup>10</sup> Lack of perceptions to HIV is also one of the factors hindering sexual behavioral changes among youth, which put youth at high risk of HIV infection.<sup>11</sup> Based on the Health Belief Model (HBM), personal beliefs or perceptions that influence health behavior include perceived susceptibility, perceived severity, perceived benefits, perceived barriers. HBM posits that health prevention behavior is more likely to occur when perceived susceptibility, perceived severity, and perceived benefits are high and perceived barriers are low.<sup>9</sup>

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Existing literature using HBM to examine factors related to HIV prevention behavior showed inconsistency findings. Several previous studies showed that perceived susceptibility, severity, benefits, and barriers were associated with HIV prevention behavior among university students such as condom use<sup>12,13</sup>, abstinence<sup>14</sup>. In contrast, a study by Swe showed that HBM components were not related with HIV preventive behaviors among university students in Myanmar.<sup>15</sup> Hence, relationships between personal perceptions based on HBM components and HIV prevention behaviors need to be examined further. Therefore, to obtain useful information to develop effective HIV prevention programs among the university students. This present study was focused to examine relationship between perceptions about HIV/AIDS and with HIV prevention behaviors including abstinence, be faithful, and condom use among university students in Semarang, Central Java, Indonesia.

## METHODS

A cross-sectional study was conducted in three universities in Semarang, Central Java, Indonesia from 1-16 September 2015. Semarang has 13 universities with 122,946 undergraduate students of total population. The total participants of this study were 296 undergraduate students. The total students were allocated proportionally to each of the randomly selected universities. Then, stratified random sampling was used to select current educational year and simple random sampling was used to select the faculties, and classes. Finally, the number of undergraduate students in each class was selected using quota sampling.

### Instruments and measurement

In this study, three questionnaires were used for collecting the data through self-administered questionnaire. Original English

version was translated into Indonesian version and then Indonesian version was translated into English version. Finally the original and the back translation were reviewed and compared for congruence. The questionnaires consist of demographic characteristics, AIDS health belief questionnaire, and HIV prevention behaviors. The questionnaires were reviewed from experts in this research fields in order to check for validity content. Internal consistency test was used to measure reliability of instruments in this study with 30 undergraduate students at Semarang State University, Semarang. Cronbach's alpha coefficient of perception towards HIV/AIDS includes perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (0.83, 0.70, 0.72, and 0.79 respectively). The questionnaire consists of 16 questions with likert scale (1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree). The 16-item questions on HIV/AIDS perceptions were further described in Table 1. The perceptions about HIV/AIDS were classified into three levels by Bloom's Taxonomy: high ( $\geq 80\%$ ), moderate (60%-79.9%), and low ( $< 60\%$ ). HIV prevention behaviors including abstinence, being faithful, and condom use were categorized into two categories; Yes and No. The questions of HIV prevention behaviors consist of "Have you ever had sexual intercourse?", and "During your life, with how many people have you had sexual intercourse?"

### Ethical consideration

Ethical clearance was obtained from Ethical Review Committee for Research Involving Human Research Subject (COA No.12/2558); Boromarajonani College of Nursing Nopparat Vajira Bangkok affiliated with Kasetsart University, Thailand. Participants had the option to refuse to participate in the study after the researcher explained the study. Also, if the participants

feel that answering some questions threatened their privacy, the participants have the right to refuse to participate or withdraw from the study at anytime without any consequences. Anonymity and confidentiality were a high concern for participants and universities.

### Data collection

Data were collected after the research proposal approved by Ethic Reviews Committee for Research Involving Human Research Subjects (ERB No 11/2558), Boromarajonani College of Nursing Nopparat Vajira and Kasetsart University, Thailand. The permissions were obtained from the presidents of each university. Then, the researcher met the dean of faculty in the university to provide information about the purposes, benefits, and method of data collection. The procedures of data collection as follows: (1) the researcher met and provided brief information to the lecturer,

and introduced himself to the participants with the lecturer. The lecturers were not involved during data collection process to prevent any enforcement; (2) participants' information sheets were given to the participants and the researcher explained about research purposes, benefits and procedures in this study to the participants; (3) the researcher obtained informed consent from the participants to voluntarily participate in the study prior to data collection, and the informed consent were kept by the researcher and the participants. To ensure anonymity of the participants, the researcher not asked the participants to write the name and sign the consent. The researcher provided the questionnaires and a box at a corner of the classroom; (4) the participants returned complete of the questionnaires in sealed envelopes in the box. All distributed questionnaires were completed from 296 students and consequently used in the data analysis.

**Table 1.** Description of HIV/AIDS perception items

Category	Items
Perceived severity	1. AIDS causes death
	2. AIDS is a disease with no hope for a cure
	3. I would rather die because of violence (shot, car accidents, etc.) than because of AIDS
	4. My future will be threatened if I am infected with HIV
Perceived susceptibility	5. I have chances of getting AIDS
	6. I will likely be infected with HIV
	7. I can be infected with HIV by having sex with many people
	8. I can get AIDS even if I only have sex with one person
Perceived benefits	9. I believe that possibility to getting AIDS can be significantly reduced by using condoms
	10. I think having only one sexual partner is a worthy effort to do
	11. The possibility of getting AIDS can be reduced by not having sex before marriage
	12. If there are no condoms, it had better stop sexual activity to get condoms
Perceived barriers	13. I think using condoms is like insulting partner
	14. I think buying condoms is embarrassing
	15. I think using a condom is not comfortable
	16. Price of condoms is quite expensive

### Data analysis

The data were analyzed using statistical software (SPSS). The associations between perceptions about HIV/AIDS and HIV prevention behaviors were analyzed using Chi-square tests.

## RESULT

### Demographic characteristics

The average age of university students was 19.9 years with the range 18-24 years old. Regarding to gender, the majority (60.5%) of university students were male. Based on the sampling technique in this study, quota sampling was used to select the samples of

university students in each class from first until fourth year. Therefore, current educational year had equal number and percentage (25%) in each educational year.

### HIV prevention behaviors

The results revealed that 36.8% of 296 university students ever had engage in premarital sexual intercourse. Fifty-three percent (53.2%) of university students who have had sex were not being faithful or ever had sex with 2 or more persons. Sixty-eight percent (68.8%) of university students who had sex did not use a condom.

**Table 2.** Demographic characteristics of undergraduate students in Semarang (n = 296)

Demographic characteristics	Frequency	%
Age (years)		
15-19	132	44.6
20-24	164	55.4
<i>Mean = 19.91, S.D = 1.518</i>		
<i>Min = 18, Max = 24</i>		
Gender		
Male	179	60.5
Female	117	39.5
Current educational year		
First year	74	25.0
Second year	74	25.0
Third year	74	25.0
Fourth year	74	25.0

**Table 3.** HIV prevention behaviors of undergraduate students in Semarang

HIV prevention behaviors	Frequency	%
Abstinence (n = 296)		
Yes	187	63.2
No	109	36.8
Be faithful (n = 109)		
1 person (Yes)	51	46.8
2 persons or more (No)	58	53.2
Condom use (n = 109)		
Yes	34	31.2
No	75	68.8

### Perceptions about HIV/AIDS

The majority of university students had a moderate level of perceived severity of HIV/AIDS (64.9%), perceived susceptibility

to HIV/AIDS (61.8%), perceived benefits from HIV preventions (56.1%), and perceived barriers to prevent HIV infection (48.3%).

**Table 4.** Level of perception towards HIV/AIDS (n = 296)

Level of perceptions towards HIV/AIDS (scores)	Frequency	%
Perceived susceptibility		
High (16-20)	60	20.3
Moderate (12-15)	183	61.8
Low (4-11)	53	17.9
<i>Median = 15, Min = 4, Max = 20</i>		
Perceived severity		
High (16-20)	42	14.2
Moderate (12-15)	192	64.9
Low (4-11)	62	20.9
<i>Median = 12, Min = 7, Max = 19</i>		
Perceived benefits		
High (16-20)	61	20.6
Moderate (12-15)	166	56.1
Low (4-11)	69	23.3
<i>Median = 16, Min = 5, Max = 20</i>		
Perceived barriers		
High (16-20)	51	17.2
Moderate (12-15)	143	48.3
Low (4-11)	102	34.5
<i>Median = 12, Min = 4, Max = 20</i>		

### Associations between perceptions about HIV/AIDS and HIV prevention behaviors

The results of this study showed that perceived benefits from HIV prevention behaviors, and perceived barriers to prevent HIV infection were significantly associated with abstinence ( $\chi^2 = 6.700$ ,  $p < .05$  and  $\chi^2 = 7.471$ ,  $p < .05$  respectively), and condom use ( $\chi^2 = 9.357$ ,  $p < .01$  and  $\chi^2 = 14.63$ ,  $p < .01$  respectively).

### DISCUSSION

For Indonesian culture, discussion about sex among unmarried young people remains a taboo subject that was not openly discussed

with parents, teachers, and even with health providers.<sup>16</sup> However, according to Indonesia Demographic Health Survey (IDHS) 2012, from 19,399 young people (15-24 years), males (8.3%) and females (0.9%) were reported having had a sexual experience. A new study also reported that Indonesian young people becoming more accepted in premarital sexual behaviors. Dating experiences of young people was no longer holding hands or kissing only, but way further to necking, petting and sexual intercourse.<sup>6</sup> The findings of current study confirmed that almost 40% of university students ever had engaged with premarital sexual intercourse.

**Table 5.** Associations between perceptions about HIV/AIDS and HIV prevention behaviors

Perceptions	Abstinence			Be faithful			Condom use			$\chi^2$	p-value
	Yes	No	$\chi^2$	Yes	No	$\chi^2$	Yes	No	$\chi^2$		
	N (%)	N (%)		N (%)	N (%)		N (%)	N (%)			
Perceived susceptibility			.280			.833				.906	
- High	35 (58.3)	25 (41.7)		12 (52.2)	11 (47.8)		7 (30.4)	16 (69.6)			
- Moderate	122 (66.7)	61 (33.3)	2.547	28 (45.9)	33 (54.1)	.365	20 (32.8)	41 (67.2)	0.197		
- Low	30 (56.6)	23 (43.4)		11 (44.0)	14 (56.0)		7 (28.0)	18 (72.0)			
Perceived severity			.878			.057				.549	
- High	28 (66.7)	14 (33.3)		3 (21.4)	11 (78.6)		5 (35.7)	9 (64.3)			
- Moderate	120 (62.5)	72 (37.5)	.260	39 (54.2)	33 (45.8)	5.732	20 (27.8)	52 (72.2)	1.201		
- Low	39 (62.9)	23 (37.1)		9 (39.1)	14 (60.9)		9 (39.1)	14 (60.9)			
Perceived benefits			.035*			.255				.009*	
- High	36 (52.2)	33 (47.8)		19 (57.6)	14 (42.4)		17 (51.5)	16 (48.5)			
- Moderate	115 (69.3)	51 (30.7)	6.700	20 (39.2)	31 (60.8)	2.732	10 (19.6)	41 (80.4)	9.357		
- Low	25 (41.0)	36 (59.0)		12 (48.0)	13 (52.0)		8 (32.0)	17 (68.0)			
Perceived barriers			.024*			.702				.001*	
- High	24 (47.1)	27 (52.9)		18 (48.6)	19 (51.4)		8 (58.1)	29 (78.4)			
- Moderate	98 (68.5)	45 (31.5)	7.471	19 (42.2)	26 (57.8)	.706	10 (19.6)	35 (77.8)	14.63		
- Low	65 (63.7)	37 (36.3)		14 (51.9)	13 (48.1)		16 (59.3)	11 (40.7)			

The ABC approach encourages young people to delay the age of first sexual intercourse or to remain abstinent until marriage. A young person would be an “abstinence user” if he/she intentionally refrains from sexual activity.<sup>18</sup> In addition, personal perceptions are influenced by the whole range of intrapersonal factors affecting health behavior.<sup>10</sup>

The findings of this study revealed that perceived susceptibility to HIV/AIDS was not significantly associated with abstinence, be faithful, and condom use. This results were similar with previous studies among university students and young people which showed that perceived susceptibility was not correlated with abstinence,<sup>15,19</sup> high-risk sexual such as having multiple sex partners,<sup>15,20</sup> and condom use.<sup>15,21</sup> This may be because students did not realize that unsafe sex even with a boyfriend or girlfriends also increases a potential risk to get HIV infection.<sup>6</sup> Another reason is students’ exposure to media such as internet to access pornography that could influence premarital sexual behavior. This reason was supported in previous studies among young people and university students in Indonesia, which reported that exposure to pornography, direct, and indirect behaviors were significantly associated with the initiation of premarital sexual intercourse.<sup>22-23</sup>

Perceived severity of HIV/AIDS was not significantly associated with abstinence, be faithful, and condom use. These results were similar with previous studies conducted among university students and young people in that perceived severity was not related with abstinence,<sup>15,20</sup> high-risk sexual behavior such as having multiple sexual partners,<sup>15</sup> and condom use.<sup>15,21,24</sup> According to Rosenstock et al., perceived severity is often based on medical information or knowledge. This may also come from beliefs that a person has about the difficulties that a disease would create. University students may not perceived

seriousness of HIV/AIDS and perceived themselves as a low HIV/AIDS infection risk group.<sup>25</sup> Similarly, a study by Chanakira et al. revealed that university students perceived as a lower group of STIs, resulting in engaging more in risky sexual behaviors.<sup>26</sup>

This study revealed that university students who had moderate level of perceived benefits from HIV prevention behaviors were less likely to practice sexual intercourse. University students who had high level perceived benefits were more likely to always use a condom. This result was consistent with a study by Setegn et al. which showed that perceived benefits were correlated with abstinence and condom use. Health Belief Model (HBM) proposes that perceived benefits are beliefs about the effectiveness of recommended preventive health actions, such as consistent and correct condom use to prevent HIV/AIDS.<sup>10</sup>

University students who had high level of perceived barriers to prevent HIV infection were more likely to engage in sexual intercourse and did not use a condom. This finding was consistent with a study by Setegn et al. that showed that students who had high-perceived barriers to HIV infection prevention were more likely to engage in sexual intercourse and the likelihood of condom use. A study by White reported that perceived barriers had an association with the likelihood of condom use.<sup>27</sup> In addition, the constructs of perceived barriers are an individual’s own evaluations of the obstacles in the way of persons adopting new behaviors. Perceived barriers are the most significant in determining behavior change.<sup>10</sup>



## CONCLUSION

The results of this study revealed that perceived benefits from HIV prevention behaviors, and perceived barriers to prevent HIV infection were significantly associated with abstinence. It was found that perceived benefits from HIV prevention behaviors, and perceived barriers to prevent HIV infection were significantly associated with condom use. However, the results showed that perceived susceptibility to HIV/AIDS and perceived severity of HIV/AIDS were not associated with three HIV prevention behaviors including abstinence, be faithful, and condom use.

## RECOMMENDATION

The results of this study could be used to develop an evidence-based project on HIV prevention behaviors among university students in Semarang, Central Java, Indonesia. Family and community nurses could collaborate with primary health centers (Puskesmas) and the universities to develop contents for this project to enhance the students' perceived benefits from HIV prevention behaviors and reduce perceived barriers to prevent HIV infection.

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