

Artikel Penelitian

## *Association Between Knowledge of Condom Functions and Condom Use among Sexually-Active Unmarried Male Adolescents in Indonesia*

### Asosiasi Pengetahuan Mengenai Fungsi Kondom terhadap Penggunaan Kondom pada Remaja Laki-Laki Aktif Seksual di Indonesia

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#### ABSTRAK

**Latar belakang:** Seks pranikah bukanlah norma umum di Indonesia dan pendidikan tentang kesehatan seksual masih dianggap kontroversial. Ironisnya, Survei Demografi dan Kesehatan Indonesia (SDKI) menunjukkan adanya peningkatan prevalensi perilaku seks pranikah di kalangan remaja, khususnya laki-laki. Sayangnya, penggunaan kondom pada populasi ini terbilang rendah dan tidak diketahui apakah itu berhubungan dengan minimnya pengetahuan kesehatan seksual termasuk penggunaan kondom. **Tujuan:** untuk melihat apakah ada hubungan antara pengetahuan tentang fungsi kondom dengan penggunaan kondom di kalangan remaja. **Metode:** Penelitian potong-lintang terhadap 913 laki-laki Indonesia usia 15-24 tahun yang melakukan hubungan seksual pranikah (SDKI Kesehatan Reproduksi Remaja). Variabel independen adalah pengetahuan tentang fungsi kondom sedangkan variabel dependen adalah penggunaan kondom. Analisis statistik dilakukan menggunakan *Chi Square* dan *Cox regression*. **Hasil:** Prevalensi penggunaan kondom sekitar dua kali lebih tinggi pada responden dengan pengetahuan yang cukup tentang fungsi kondom (31%), dibandingkan responden tanpa pengetahuan tersebut (15,1%); *adjusted PR* 2,38 (95% CI 1,47 - 3,85). **Simpulan:** Pengetahuan tentang kondom berasosiasi positif dengan penggunaan kondom pada remaja pelaku hubungan seksual pranikah. Pelarangan informasi tentang kondom dapat membuat remaja yang aktif secara seksual melakukan hubungan seksual tidak aman. Pendidikan tentang kesehatan reproduksi dan praktik seks aman diperlukan namun harus disesuaikan dengan nilai-nilai budaya.

**Kata kunci:** Seks pranikah, kondom, remaja, laki-laki, pengetahuan, perilaku berisiko.

#### ABSTRACT

**Background:** Premarital sex is culturally unacceptable in Indonesia and education on safe sex practice remains controversial. Meanwhile, Indonesia Demographic and Health Surveys (IDHS) show gradual increase in the prevalence of sexually-active adolescents nationwide, particularly among unmarried males. Unfortunately, condom use is low among this population and it is unclear whether it relates to inadequate knowledge on safe sex practice including condoms. **Objective:** to see whether there is an association between knowledge on condom functions and condom use among adolescents. **Method:** cross-sectional study of 913 Indonesian unmarried males aged 15 – 24 who have had sex (IDHS Adolescent Reproductive Health 2012 dataset). The independent variable is knowledge on condom functions while the dependent variable is the use of condoms. Statistical analysis is performed using Chi Square and Cox regression. **Result:** The prevalence of condom use is about twice higher in respondents with sufficient knowledge on condom functions (31%), than in respondents without (15.1%); adjusted PR 2.38 (95%CI 1.47 – 3.85). **Conclusion:** Having knowledge about condoms is positively associated with safer sex practice among sexually active adolescents. Banning information on condoms may place sexually-active adolescents into unprotected sex. Education on safe sex practice is needed but should be cautiously tailored to meet cultural values.

**Keywords:** Premarital sex, condom, adolescent, male, knowledge, risky behavior.

#### Introduction

Premarital sex, especially in adolescents, is not considered part of Indonesian culture, and even often regarded as a taboo.<sup>1,2</sup> However, Indonesia Demographic and Health Surveys (IDHS) from the past decade show gradual increase in prevalence of sexually-active adolescents nationwide, particularly unmarried males (from 4.9% in 2003 to 8.3% in 2012).<sup>3,4</sup> Unfortunately, this trend is not followed with adequate use of condoms. In 2012, only 27.4% male adolescents wore condom at their last intercourse.<sup>3</sup> While in fact, condom remains the most effective way to prevent both sexually transmitted infections (STIs),

and unwanted pregnancy.<sup>5</sup> The gap between risky behavior and its specific protection may lead to unwanted pregnancy and STIs, which could bring in more consequences e.g. unsafe abortion and maternal-neonatal complications.

Knowledge on sexual and reproductive health (SRH) is thought to have a role in this phenomenon yet sadly found lacking in Indonesian adolescents. There is no standard comprehensive SRH education

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at school and discussing about condoms is usually frowned upon.<sup>1, 2</sup> Even basic information regarding condoms are not well-understood by every Indonesian adolescents. Based on IDHS 2012<sup>3</sup>, almost 30% males and 40% female adolescents in Indonesia do not know that condom can prevent pregnancy. Moreover, more than 30% males and nearly 50% females do not know that condoms can prevent STIs.<sup>3, 4</sup>

Behaviors are known to be influenced by knowledge.<sup>6</sup> Likewise, there are many factors that are thought to influence adolescents in making decisions on sexual practice, one of them is their comprehension on sexual and reproductive health.<sup>7, 8</sup> It remains unclear whether inadequate knowledge on safe sex contributes to unsafe sex. Therefore this study aims to see whether there is an association between knowledge on condom functions and the prevalence of condom use, particularly among unmarried male adolescents in Indonesia.

## Method

This is a cross-sectional study using secondary data of Indonesia Demographic Health Survey (IDHS): Adolescent Reproductive Health 2012<sup>3</sup> dataset involving 913 unmarried males aged 15 – 24 who have had sex. Sample is collected from all 33 provinces nationwide during the year 2007 - 2012. Data is obtained from an open source public domain (<https://dhsprogram.com/Data/>). Complete questionnaires are displayed as appendix of IDHS 2012 (special report on adolescent reproductive health) and available for download at <https://dhsprogram.com/pubs/pdf/FR281/FR281.pdf>.

In this study, the dependent variable is standard male latex condom use at last sexual intercourse (using condom or not using condom, form no.713-714). Independent variable is knowledge on two basic condom functions, which are 1) to help prevent pregnancy and 2) to prevent STIs (form no. 216). Categories of knowledge are divided into two; 1) sufficient knowledge (know both functions of condoms), and 2) insufficient knowledge (only know one function or not at all). Additionally, we also look for dose-response relationship by comparing condom use among those who know 2 condom functions vs know only one function vs know none of the functions.

Firstly, we use Chi Square test to calculate crude prevalence ratio (PR) for the use of condoms among the two knowledge group. Then Cox regression is used for multivariate analysis to obtain an adjusted PR by taking demographic covariates into consideration. The covariates included in the multivariate analysis are age (form no 103), economic status (form no. 118), zone of residence (identification form), and type of residence (identification form).

## Ethical Review

Data from IDHS Adolescent Reproductive Health 2012 is obtained from procedures and questionnaires that comply with standard DHS surveys. All protocols have been reviewed and approved by ICF Institutional Review Board (IRB) and an IRB in the host country, i.e. Indonesia in this case.<sup>9</sup> ICF IRB confirms that the survey conforms to the U.S. Department of Health and Human Services regulations for the protection of human subjects (45 CFR 46).<sup>9</sup>

## Result

Table 1 shows the general characteristic of the sample. Variables on rows no. 1 - 3 are independent variables, variable on row no.4 is dependent variable, and the rest are demographic characteristics. Asterisk (\*) indicates demographic characteristics that are included in multivariate analysis as covariates because they have statistically significant effect in the model analysis. Based on row no.3, about 79% respondents have sufficient knowledge on basic condom functions, while the rest only know either one or not at all (this is defined as having insufficient knowledge on basic condom functions). Data on row no.4 shows that about 72% respondents do not use condoms at their last intercourse.

**Tabel 1. Characteristic of respondents**

Variables	Categories	n	%
Knowledge that condom can help prevent pregnancy	Know	789	87.6
	Do Not Know	111	12.4
	Total	901	100.0
	Missing	(4)	
Knowledge that condom can help prevent STIs	Know	767	85.1
	Do Not Know	134	14.9
	Total	901	100.0
	Missing	(4)	
Knowledge that condom can help prevent pregnancy and STIs	Know both functions	712	79.1
	Know only one function	131	14.6
	Know none	57	6.3
	Total	901	100.0
Condom use at last sexual intercourse	Yes	251	27.4
	No	663	72.6
	Total	913	100.0
	Age at interview*	20 – 24 years	606
15 – 19 years		308	33.7
Total		913	100.0
Age at first sexual intercourse	18 – 24 years	442	49.0
	10 – 17 years	461	51.0
	Total	903	100.0
	Do not remember	(6)	
Level of education	Missing	(5)	
	Secondary (SMP) or above	784	86.4
	Below secondary	123	13.6
	Total	907	100.0
Type of residence	Missing	(6)	
	Urban	535	58.6
	Rural	378	41.4
	Total	913	100.0
Indonesian zone of residence*	Western	516	56.5
	Central	313	34.2
	Eastern	84	9.2
	Total	913	100.0
Economic status*	Upper	94	10.4
	Middle	337	37.4
	Lower	469	52.1
	Total	900	100.0
Receiving education on HIV/AIDS at school*	Missing	(13)	
	Yes	648	71.6
	No/don't know	257	28.4
	Total	904	100.0
	Missing	(9)	

Tabel 2. Prevalence Ratio of Condom Use

Knowledge on condom function	Condom use		Total	PR
	Yes	No		
For preventing pregnancy				Crude
Know	236 (29.9%)	553 (70.1%)	789 (100.0%)	2.57 (1.36 – 4.87%)
Do Not Know	13 (11.6%)	98 (88.4%)	111 (100.0%)	1.00
For preventing STIs				Crude
Know	229 (29.8%)	538 (70.2%)	767 (100.0%)	1.97 (1.21 – 3.21)
Do Not Know	20 (15.1%)	114 (84.9%)	134 (100.0%)	1.00
3 categories				Crude
Know both functions	220 (31.0%)	492 (69.0%)	712 (100.0%)	4.17 (1.97 – 8.83)
Know either one	24 (17.9%)	108 (82.1%)	131 (100.0%)	2.23 (0.90 – 5.51)
Know none	5 (8.5%)	52 (91.5%)	57 (100.0%)	1.00
2 categories with bivariate analysis (Chi Square)				Crude
Know both functions	220 (31.0%)	492 (69.0%)	712 (100.0%)	2.05 (1.32 – 3.20)
Know only one/none	28 (15.1%)	157 (84.9%)	188 (100.0%)	1.00
2 categories with multivariate analysis (Cox regression)				
Know both functions				2.38 (1.47 – 3.85)
Know only one/none				1.00

Table 2 shows the prevalence ratio (PR) of condom use among respondents with varied classifications of knowledge on condom functions. Using crude or adjusted PR, it appears that respondents with better knowledge on condom functions always have higher prevalence of condom use. By two categories, the prevalence of condom use is significantly higher in respondents who know both functions of condoms (31%), than in respondents who only know either function or not at all (15.1%). The crude PR is 2.05; 95% CI 1.32 – 3.20). When compared in 3 categories, those who know both functions have 4 times higher PR than those who know none.

The last row of Table 2 shows the final model that we use to establish the association between knowledge on condom function with condom use in this study. There are initially several models that result in different values of adjusted PR, ranging from 3.08 to 3.05 (not shown), but the CI remains statistically significant. We include variables of age, economic status, Indonesian zone residency, and Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) education at school because they either produce p value of less than 0.15 or are regarded as substantially important by authors to be included in the final model. After considering covariates, the adjusted is PR 2.38 with 95% CI of 1.47 – 3.86.

Stratification analysis in Table 3 shows the association between knowledge of condom function and condom use in various groups. The PR is ranging from 1.44 to 5.14 and the 95% CI almost always statistically significant in all categories. Knowledge of condoms donot seem to have positive association with condom

condom use among groups with younger age, with lower education, who live in rural area, who live in eastern zone of Indonesia, and without education on HIV/AIDS at school.

Tabel 3. Association between knowledge on condom functions with condom use using stratification

Stratifying Variables	Categories for stratification	PR	95% CI
Age at Interview	20 – 24 years	2.30	1.34 – 3.94
	15 – 19 years	1.61	0.74 – 3.51
Level of education	Secondary (SMP) or above	2.09	1.26 – 3.46
	Below secondary	1.45	0.60 – 3.47
Type of residence	Urban	2.12	1.20 – 3.75
	Rural	1.91	0.94 – 3.87
Indonesian zone of residence	Western	1.98	1.10 – 3.58
	Central	2.54	1.45 – 4.46
	Eastern	1.59	0.62 – 4.12
Economic status	Upper	5.14	1.06 – 24.99
	Middle	2.13	1.02 – 4.45
	Lower	2.07	1.25 – 3.43
Receiving education on HIV/AIDS at school	Yes	2.22	1.23 – 4.00
	No	1.44	0.79 – 2.64

## Discussion

Bivariate, multivariate, and stratified analyses demonstrate a consistent association between knowledge on condom function with condom use. It is shown that condom use is always more prevalent in the knowledgeable group. Compared to bivariate analysis, multivariate analysis shows lower association because it considers demographic characteristics that may become a confounding, but the figure is still statistically significant (2.38 times higher). According to bivariate

analyses, there is a dose-response relationship in this association because the more condom functions they know of, the more likely they use condoms.

Behavioral theory by Green<sup>6</sup> supports our findings and it is obviously logical to explain that if one knows the consequences of having sexual intercourse outside marital status and the preventive measures, he is more likely to attempt to do something to prevent them; in this case pregnancy and getting STIs. We have not found an exactly similar study on these variables, but previous researches<sup>10-12</sup> showed that knowledge on preventive health measures are associated with safer sexual behavior, including using condom.

It is still worth noting that there may be other factors outside knowledge that could eventually lead adolescents to practice unprotected sex. Previous studies found that comfort<sup>13, 14</sup> and perception of self-vulnerability<sup>14, 15</sup> contributed to the final action for using or not using condom.

In this study, we also propose other reasons for not using condom that may interact with knowledge and need further investigation. One of them is the perception about the consequences or disadvantages from STIs and unwanted pregnancies. Someone might know about safer sex and the importance of condom in preventing STIs and unwanted pregnancies, but he may decide not to use it because he is not aware that STIs and pregnancies are something to worry about. As seen in Table 3, there is statistically significant association between knowledge and condom use among group with older age, but the association is not statistically significant in younger age. That could mean that even if someone has the knowledge about condom, his level of maturity may affect mindset, concerns, and priorities which eventually contribute to his final decision.

Similarly, this situation is observed in HIV/AIDS education stratification. The positive association is statistically significant in group with HIV/AIDS education at school but is not in group without HIV/AIDS education at school. That could mean that having knowledge about condom and HIV/AIDS may motivate someone to use condom because he has something to 'fear'. This finding is in line with study by Wang<sup>(16)</sup> which found that enhancing education on HIV/AIDS may increase condom use.

Other possibilities may include accessibility and affordability as shown by stratification analysis in Table 3 of this study. Knowledge has smaller association to condom use in group with lower economic status, although it remains statistically significant. It could mean that even if someone has the knowledge of condom, he does not use it because he cannot afford it.

Similarly, stratification analyses in zone and types of residency find that association between

knowledge of condom and condom use is not statistically significant in rural group and eastern part of Indonesia. That could mean that in these area condoms may not always be as accessible as they are in urban or western part of Indonesia, so even if someone has the knowledge about condom, he may not still be able to use it because he couldn't access it. However, further studies are needed to confirm the above reasoning.

The main study limitation is that we do not know the specific reason of the respondents for not using condom. It would be useful to conduct further studies with more detailed approaches to understand why sexually-active adolescents do not wear condoms. If possible, it is also advisable to include both male and females as study sample.

Another limitation includes the possible temporal ambiguity as a consequence of cross-sectional design using secondary data because the questionnaire available for analysis is not intentionally designed for this study. However, this study is simply one efficient way to utilize national data to understand the sexual behavior in general population. Existing studies usually focuses on high-risk groups and use small sample size because of culturally sensitive nature of this topic. It is highly challenging to do a research with large sample that is country-representative for general population.

Our findings suggest that it may no longer be relevant for us to 'hide' the information on what is regarded taboo by the society. We have the evidence that least knowledgeable the respondents, the less likely they are they are to use condoms. Considering remarkably growing number of adolescent premarital sex, we put our generation to risk for getting unwanted pregnancies and STIs. Unwanted pregnancy is a complex condition with both short and long term consequences that in the end will become burden to the country. STIs are also a threat to public health because it includes include human immunodeficiency virus (HIV) infection that certainly poses a risk for a lifelong disability. Additionally, non-HIV infections are as dangerous because although they may be cured, they can affect pregnancy outcomes such as birth defects that eventually lead to disability and low quality of life.

In addition to social and religious consequences, adolescents need to know the health risk of sexual behavior along with its preventive measures. Education on sexual and reproductive health (SRH) for youths is a critical issue that needs to be addressed. Cultural barrier should not get in the way of the young generations to receive the education they deserve. They are entitled to have balanced information which comprises of moralities, religious principles, and cultural values, as well as science-based health literacy.

## Conclusion

Having knowledge about condoms is positively associated with safer sex practice among sexually active male adolescents. Unfortunately, majority of Indonesian young people are not adequately informed about the use of condom as specific protection to unwanted pregnancy and STIs. Banning or hiding information on condoms may place sexually-active adolescents into unprotected sex. Education on safe sex practice is needed but should be cautiously tailored to meet cultural, moral, and religious values.

## Recommendation

We suggest further studies to explore the reasons adolescents do not wear condoms during premarital sexual intercourse. These will help us understand their behavior and formulate well-targeted interventions.

In term of sexual and reproductive health education, we recommend a good balance between morality/religious reasoning and medical consequences. Each mean of protection (i.e. abstinence, faithfulness, and condoms) should be disclosed along with its pros and cons so that adolescents can make well-informed decisions.

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