



RURAL-URBAN DISPARITY OF CONDOM USE AT THE LAST SEX AMONG INDONESIAN MALE ADOLESCENTS

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ABSTRACT

Background: Several studies has established the urgency to use condom, however in Indonesia, condom use remains low and the gap is more distinct in different living setting.

Objective: Since condom at the last sex is a predictor for frequency due to its recency, this research aims to understand condom use at the last sex.

Method: This study uses data from Indonesian Demographic Health Survey (IDHS) 2017, which was collected from July 24–September 30 2017, the latest survey to capture sexual behaviour. The population for this study is Indonesian male adolescents with a total of 1331 samples. The data is analysed using logistics regression using complex-sample approach. In addressing the disparity, this research will separate the result according to rural-urban areas

Result: Multivariate analysis shows that attitude towards condom is associated with condom use at the last sex in both urban (p -value= 0.001, aOR = 2.058 (CI 95%: 1.184–3.576)) and rural area (p -value= 0.003, aOR = 4.360 (CI 95%: 1.661–11.446)). Read newspaper (p -value= 0.044, aOR = 0.449 (CI 95%: 0.238–0.847) and aOR = 0.669 (CI 95%: 0.405–1.106)), education level (p -value= 0.011, aOR = 2.045 (CI 95%: 1.177–3.554)), and age (p -value= 0.005, aOR = 2.004 (CI 95%: 1.232–3.257)) are associated with condom use at the last sex for urban area. In contrast, only internet use (p -value= 0.013, aOR = 3.851 (CI 95%: 1.332–11.128)) is associated with condom use at the last sex for rural area. Consistently, attitude towards condom use is the strongest predictor in both rural-urban areas.

Conclusion: Further intervention should address the disparity of rural-urban areas and taking mass media consumption, age, and education into an account as well as shaping a better attitude towards condom.

Keywords: condom use at last sex, rural urban, male adolescents

INTRODUCTION

It has been well-established that condom can protect someone from Sexually Transmitted Infections (STIs) and also pregnancy. Several STIs that may be prevented by using condoms are namely HIV, Gonorrhoea, Chlamydia, and Syphilis and condom is the only form of birth control that can prevent from STIs and pregnancy, therefore it gained its name as dual protector.^{1,2}

Despite such a beneficial use of condom, condom use remains low, especially adolescents in middle to low income countries. For comparison, the prevalences of condom use among adolescents who have had sex in USA was around 72% in 2015—2019 while in Indonesia, it was below 50%.^{3,4} Similarly, the prevalences in Malaysia was below 13%, suggesting a distinct condom use among developed and developing countries due to different socioeconomics and cultural backgrounds.^{5,6} It's worthy to note that men play a huge part in manufacturing such a low number, as the control of condom use often falls on the hand of men.^{7,8}

With such a low condom use among adolescents in Indonesia, it is no wonder then the number of pregnancies among Indonesian adolescent shows a significant increase from a very few numbers in 2012 to 12% for female adolescents and 7% for male adolescents in 2017, although the number may be underestimated.^{3,9}

With low use of condom, it is best to understand the current use of condom, represented by condom use at the last sex. This is because last sex experiences have a correlation between recency and frequency.¹⁰ Previous study has established what factors may influence condom use, namely gender, age at sexual debut, education, living setting, unavailability of condoms, trust, perceptions, behavioural factors such as alcohol drink, attitude and perception towards condom, religion, and employment.^{11–16} While the factors have been established, several findings show that contrast differences among those factors exist in

different living setting, showing a huge gap of condom use.¹⁷ Such gap is thought to be essential and therefore needs to be addressed. However, current study in Indonesia is lacking to examine the disparity of condom use in different living setting.

With such a crucial knowledge gap, this study aims to understand the disparity of condom use at the last sexual intercourse in different living setting, that is rural and urban among Indonesian male adolescents, using the data from Indonesian Demographic Health Survey 2017 as the latest data to capture sexual behaviour in Indonesia.

METHODS

Dependent Variables

In this research, condom use at the last sex was asked with question, “The last time you had sexual intercourse, did you or your partner use anything to prevent a pregnancy? What did you or your partner use? Any other method?” Such questions yield several multiple answers: condom, pill, emergency contraception, withdrawal, periodic abstinence/calendar, and other. If someone answered with condom only or condom with any other combination, they would be categorized as using condom. Our main focus is the lack use of condom, so this research will highlight the number of adolescents who do not use condom at the last sex.

Independent Variables

Our independent variables consist of: age group (15—19 and 20—24), education level (high school above and below high school), attitude towards condom (good attitude and poor attitude), knowledge about HIV (good knowledge and poor knowledge).

Alcohol use (yes and no), smoking cigarette (smoker (daily, once in a while, and never), drug use (yes and no), ever used internet (yes and no), listen to radio, read magazine or newspaper, and watch television, three of which yield answers at least once a week, less than once a week, and not at all. Our variables and measurements are in line with several previous studies.[18–20]

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Attitude towards condom use is a composite variable derived from three statements of which adolescents needed to answer whether the statements are correct or not, consist of: “condom can prevent pregnancy”, “condom can protect against HIV/AIDS and STIs”, and “condom can be reused”. An adolescent who answered all the questions correctly will be considered as having good knowledge. Similarly, knowledge about HIV is also a composite variable derived from five questions, that is three correct statements: “Can people reduce their chance of getting the HIV-AIDS virus by having just one uninfected sex partner who has no other sex partners?”, “Can people reduce their chance of getting the HIV-AIDS virus by using a condom every time they have sex?”, “Is it possible for a healthy-looking person to have the HIV-AIDS virus?”, and two misconceptions: “Can people get the HIV- AIDS virus by sharing food with a person who has AIDS?” and “Can people get the HIV-AIDS virus from mosquito bites?” Adolescents needed to answer all the statements correctly and reject the misconceptions in order to be considered as having good knowledge.

Population and Sample

The population for this study is male adolescents in Indonesia. Our inclusion criteria is someone who have ever had sex previously and therefore adolescents who have never had sex before would be excluded from our analysis. After removing the missing values, our final sample is 1331 adolescents (676 for urban and 655 for rural) who have had sex before (unweighted). Our sample selection process is as seen in the figure 1 below.

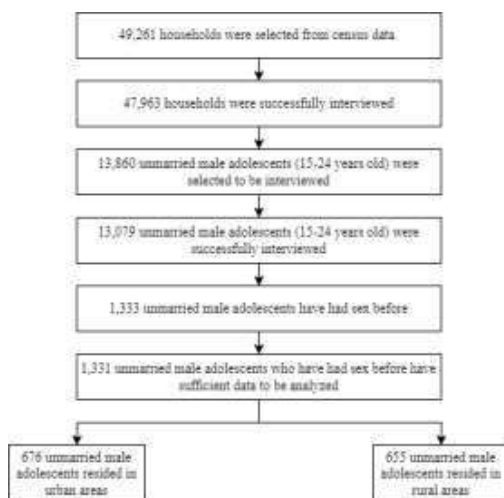


Figure 1 Sample selection process

Data Collection

Data collecting for this research comes from 2017 IDHS which was conducted by The DHS Program using Never-Married Man’s Questionnaire. The data collecting process is thought to be representative as it uses similar methods to obtain census blocks across provinces in Indonesia. The DHS Program stated that IDHS used two-stage stratified sampling process.

Data Analysis

Bivariate analysis will be carried out using logistic regression. All variables whose *p-values* are <0.25 will be modelled into a multivariate model, yielding adjusted odds ratio. Since the data were collected using two-stage stratified sampling process, we will use complex-sample approach in a weighted manner when analyzing the data, as suggested from The DHS Program. To assess the disparity, a look into living setting will be taken into an account. All the analysis are done using SPSS Software.

Ethical Consideration

Since this data uses a secondary dataset, an ethical consideration is waived. However, we obtain the legal access to utilize the dataset from The DHS Program on July, 4th 2023 under the name of the researcher.

RESULT

Characteristics of the Respondents

As suggested in the table 1, the number of adolescents who did not use condom at their last sexual intercourse always outnumbered those who used it in both setting. However, it shows a huge gap between condom use in both setting by around 10%, suggesting a clear disparity, with most of the users living in urban area. In regards of proportion, condom use was prominent among adolescents aged 20—24 (36.1%) in urban area and aged 15—19 (23.3%) in rural areas. However in both living setting, most of condom users were in high school or above (36.6% in urban and 22.9% in rural area).

Table 1. Weighted counts of adolescents who used condom at the last sex in different living setting

Urban		Rural	
Use Condom	Does Not Use Condom	Use Condom	Does Not Use Condom
161,646,791 (31.9%)	344,532,655 (68.1%)	97,434,239 (21.4%)	358,277,231 (78.6%)

Table 2. Relationships between characteristics, knowledge, attitude, and media access with does not use condom at the last sex adolescent in Indonesia, 2017

Variables	Urban				Rural			
	Does Not Use Condom	Use Condom	<i>p-value</i>	cOR (95% CI)	Does Not Use Condom	Use Condom	<i>p-value</i>	cOR (95% CI)
Age								
20—24	63.9	36.1	0.002	1.000	79.5	20.5	0.672	1.000
15—19	79.4	20.6		2.182 (1.332— 3.575)	76.7	23.3		0.851 (0.404— 1.795)
Education Level								
High School Above	63.4	36.6	0.001	1.000	77.1	22.9	0.518	1.000
Below High School	82.2	17.8		2.672 (1.493— 4.784)	80.5	19.5		1.227 (0.659— 2.284)
Attitude towards Condom Attitude								
Positive Attitude	63.6	36.4		1.000	71.9	28.1	0.001	1.000
Negative Attitude	81.2	18.8	0.001	2.479 (1.472— 4.175)	92.9	7.1		5.106 (1.971— 13.223)
Knowledge about HIV								
Good Knowledge	59.4	40.6	0.083	1.0000	68.1	31.9	0.274	1.000
Poor Knowledge	69.9	30.1		1.587 (0.942— 2.673)	70.9	29.1		1.624 (0.680— 3.876)
Drug Use								
No	66.5	33.5	0.266	1.000	78.8	21.2	0.877	1.000
Yes	72.0	28.0		1.299 (0.819— 2.059)	77.7	22.3		0.938 (0.420— 2.099)
Alcohol Consumption								
No	69.8	30.2	0.791	1.000	82.7	17.3		1.000
Yes	67.9	32.1		0.914 (0.469— 1.780)	78.1	21.9	0.505	0.743 (0.311— 1.777)
Smoking Behaviour								
Not at all	69.0	31.0	0.696	1.000	77.6	22.4	0.567	1.000
Every day	58.6	41.4		0.637 (0.185— 2.192)	76.9	23.1		0.959 (0.218— 4.224)
Once in a while	66.1	33.9		0.878 (0.508— 1.517)	84.6	15.4		1.581 (0.674— 3.712)
Media Access: Watches Television								
Not at All	85.5	14.5	0.262	1.000	91.9	8.1	0.488	1.000
At least Once a Week	69.6	30.4		0.389 (0.081— 1.862)	78.8	21.2		0.326 (0.042— 2.505)
Less than Once	62.1	37.9		0.278	75.2	24.8		0.266

a Week				(0.053— 1.454)				(0.30— 2.327)
Media Access: Listen to Radio								
Not at All	72.4	27.6	0.153	1.000	77.7	22.3	0.816	1.000
At least Once a Week	59.8	40.2		0.556 (0.316— 1.013)	82.2	17.8		1.324 (0.533— 3.289)
Less than Once a Week	67.0	33.0		0.773 (0.486— 1.232)	78.2	21.8		1.028 (0.484— 2.183)
Media Access: Read Newspaper								
Not at All	76.7	23.3	0.006	1.000	81.2	18.8	0.421	1.000
At least Once a Week	54.2	45.8		0.360 (0.192— 0.676)	79.2	20.8		0.884 (0.327— 2.386)
Less than Once a Week	65.3	34.7		0.573 (0.345— 0.952)	74.0	26.0		0.661 (0.347— 1.260)
Media Access: Internet Use								
Yes	67.5	32.5	0.170	1.000	75.9	24.1	0.002	1.000
No	83.4	16.6		2.407 (0.686— 8.448)	94.3	5.7		5.241 (1.810— 15.175)

As suggested in the table 2, the adolescents who does not use condom at their last sex outnumbered the adolescents who does, in every living setting and in every category. Our bivariate analysis shows that not using condom at the last sex may be influenced by different factors in different living settings. However, we find that attitude towards condom is associated with not using condom in both urban and rural area, with the odds for the adolescents who have a negative attitude towards condom to not use condom is 2.479 (CI 95%: 1.472—4.175) and 5.106 (CI 95%: 1.971—13.223) times higher than adolescents whose attitude towards condom is positive, in both urban and rural, respectively. For rural area, only two factors are statistically significant, that are attitude towards condom use (p -value=0.001) and internet use (p -value=0.002) Our finding suggests that internet use may also play a similar role with attitude towards condom in influencing condom use at the last sex, with the odds for the adolescents who are not exposed to internet to

not use condom is 5.241 (CI 95%: 1.810—15.175) higher than adolescents who are exposed to internet.

In contrast to our finding for rural area, many factors in urban area are associated with not using condom at the last sex. We find that age (p -value= 0.002), education level (p -value= 0.001), attitude towards condom use (p -value= 0.001), and reading magazine/newspaper (p -value= 0.006) are associated with condom use at the first sex.

Condom Use at the Last Sex

Every variable in the bivariate analysis whose p -value is <0.25 will be modelled in a multivariate model. For rural area, such variables are attitude towards condom (p -value=0.001) and internet use (p -value= 0.002) while for urban area, such variables include age (p -value= 0.002), education level (p -value=0.001), attitude towards condom (p -value= 0.001), knowledge about HIV (p -value= 0.083), listen to radio (p -value= 0.153), read newspaper (p -value= 0.006). Our final multivariate model is as described in the table 3.

Table 3. The determinant factors of does not use condom at the last sex adolescent in Indonesia, 2017

Variables	Urban		Rural	
	<i>p-value</i>	aOR (95% CI)	<i>p-value</i>	aOR (95% CI)
Internet Use				
Yes	-	-	0.013	1.000
No				3.851 (1.332—11.128)
Attitude towards condom use				
Positive attitude	0.011	1.000	0.003	1.000
Negative attitude		2.058 (1.184—3.576)		4.360 (1.661—11.446)
Read Newspaper				
Not at all	0.044	1.000	-	-
At least once a week		0.449 (0.238—0.847)		
Less than once a week		0.669 (0.405—1.106)		
Education Level				
High school above	0.011	1.000	-	-
Below high school		2.045 (1.177—3.554)		
Age				
20-24	0.005	1.000	-	-
15-19		2.004 (1.232—3.257)		
Knowledge about HIV				
Listen to Radio	-	-	-	-

As suggested in the model, attitude towards condom is one of the most important predictors for not using condom at the last sex, implied by its aOR that yields the highest number for both living setting (p -value= 2.058 (CI 95%: 1.184—3.576) for urban area and p -value= 4.360 (CI 95%: 1.661—11.446) for rural area). Our final multivariate model also explains that read newspaper (p -value= 0.044 (CI 95%: 0.449 (0.023—0.847) for *at least once a week* category and CI 95%: 0.069 (0.405—1.106) for *less than once a week* category), education level (p -value= 0.011 (CI 95%: 2.045 (1.177—3.554), and age (p -value= 0.005 (CI 95%: 2.004 (1.232—3.257)) are associated with condom use at the last sex in urban area, but not in rural areas. In contrast to urban area, only attitude towards condom use is associated with condom use at the last sex.

In addition, knowledge about HIV and listening to radio is eliminated due to robust p -values after taken into the model (p -value= 0.880 for listening to radio and p -value= 0.799 for knowledge about HIV). We also tested for potential interaction among education level and age as previous study has established reported such case,²¹ however that is not the case in this

model (p -value= 0.264 for interaction between age and education).

DISCUSSION

Our research has established a clear, distinct, and unneglectable gap of condom use among adolescents in urban and rural area. In our research, only two factors that is significantly associated with condom use at the last sex in rural area while multiple factors account for not using condom at the last sex in urban area.

One factor, attitude towards condom use, is statistically significant with not using condom at the last sex. It's worthy to note that a huge proportion of adolescents whose attitude towards condom is negative do not use condom at their last sexual intercourse (81.2% in urban and 92.9% in rural). Such notion also explains a lack of knowledge of condom in adolescents. We argue that this negative attitude may be influence with lack of access to reproductive health knowledge, as condom or even sexual intercourse knowledge in general has always been deemed taboo in Indonesia, as suggested from previous findings.^{22,23} There is a possibility of religion playing a huge part in this one, although previous study shows a mixed result.²⁴ Religion practices often discourage adolescents

to do sexual intercourse and promote abstinence, sexual education often gets mixed with religious belief, thus enabling a possibility of withholding information about sexual education that is thought to be promoting sexual intercourse.^{25,26}

In rural area, internet use is associated with not using condom at the last sex. Such association is not found in urban area. This implies a possible discrepancy and imbalance use of internet. Lack of internet use in rural area hinders adolescents to find information related to reproductive health and health in general. This may result in an asymmetric information between adolescents who live in rural and those who live in urban areas.^{27,28}

Age, education level, and read newspaper is associated at condom use for adolescents in urban area, but not in rural area. This may be explained by the lack of educational infrastructure and low quality of education in rural areas. Such circumstances result in a knowledge poverty, information poverty, and also ideas poverty where enrolling adolescents to school does not necessary enhance their knowledge, in contrast to current situation regarding education in urban areas.^{29,30} There are also huge differences among the intention to go to school and obtain education among adolescents in rural and urban. Previous study finds that education for rural adolescents is expected to add a leverage to their socioeconomic status while for urban adolescents it is beyond socioeconomic reason: a medium to create a character.³¹ Such distinction even prevails in Java Island where most economics activities take place in the country and the distinction may become more significant outside Java Island. This may also explain why age also is not associated with condom use at the last sex in rural areas. Higher ages are expected to obtain more knowledge according to school curricula, however with a lack of school intellectual property and infrastructure to sustain education in rural area as well as massive poverty, such expectations fail to be lived up.^{27,29}

Our findings show a mixed result with previous studies where age, education level, and attitude towards condoms are significant with not using condom at the last sex, although inconsistencies are found in our study where one determinant is statistically associated in urban but not in rural.^{19,32} In our study, risk behavior such as smoking, alcohol use, and drug use is not associated with condom use at the last sex, despite findings from previous study.³³⁻³⁵ We argue that this different finding is due to the

inability to capture the recent behaviour or right before the last sexual intercourse took place, as suggested in one paper.³⁶ It is best to take the trajectories of those substance use into an account in regards of the sexual behavior and this paper does not have the ability to do that due to lacks of questions from IDHS.

Our study also finds that mass media in general is not associated with condom use at the last sex, except for read newspaper/magazine for adolescents in urban area and internet use for adolescents in rural area. Our finding for read newspaper/magazine should be carefully interpreted as its aOR lies below 1 to above 1, showing an inconsistency of role: being a protective or a risk factor. Previous study found that mass media plays a role to intensifying condom use as a mediator in pathways to HIV/AIDS knowledge,³⁷ a variable which is statistically insignificant in our research.

Our study adds a substantial amount of information regarding the disparity of condom use at the last sex in both living setting which was often neglected in similar studies before. However, our study also has its own disadvantages. First, our study uses cross-sectional methods, implying we are unable to dig up more about the causation, but instead we are only able to establish correlation. Moreover, we use a secondary data set with limited variables. We are also unable to gain the information regarding how the field officer took the data in the field, especially for culturally taboo questions, and therefore, possible bias recall and lies may prevail.

CONCLUSION

If we truly believe that our research represents true nature of condom use at the last sex, then we propose that this condom matter is a serious issue where more than 50% of the adolescents do not use condom and the gap is showing when we analyse this in a perspective of rural-urban setting, with approximately 10% differences. Findings from this research shows that internet use and attitude towards condom are predictors for condom use at the last sex in rural areas while attitude towards condom use, read newspaper, education level, and age are predictors for condom use at the last sex in urban areas. Our multivariate analysis shows that attitude towards condom use is the strongest predictor for both living setting.

RECOMMENDATION

We propose that National Population and

Family Planning Board (BKKBN) and related entities should be addressing this matter, especially for adolescents in rural areas, maximizing the role of internet. We also strongly recommend BKKBN to promote health knowledge for adolescents to shape a better understanding and attitude of condom use. Such action will help Indonesian adolescents to disengage in condomless sex and therefore, increase condom intake among adolescents in a way that it is marketable towards younger adolescents and may be fathomable for adolescents whose education level is below high school.

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