# The Evolution of Adolescent Sexual Practices in Indonesia: A Longitudinal Study

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# **ABSTRACT**

**Background:** Adolescents experience significant sexual and hormonal development, which may lead to engagement in premarital sexual practices. This study aims to analyze the factors associated with premarital sexual practices among adolescents in the 2007, 2012, and 2017 survey periods and to describe the trends and relevant variables identified in each period.

Method: This longitudinal study utilized secondary data from the Indonesian Demographic and Health Survey (IDHS) on adolescent reproductive health. Respondents included unmarried adolescents aged 15–24 years who had completed the IDHS questionnaire. The sample sizes were 16,412 (2007), 16,998 (2012), and 19,970 (2017). Data analysis was conducted descriptively, followed by statistical analysis using logistic regression with a 95% confidence interval (CI).

**Result:** The proportion of adolescents engaging in premarital sexual practices decreased slightly but not significantly: 5.8% in 2007, 5.4% in 2012, and 5.3% in 2017. Factors consistently associated with premarital sexual practices across all survey periods included sex, age, education level, knowledge of contraceptives, high-risk dating behaviors, and peer influence. Socialization through media and parental involvement are recommended strategies to prevent or delay premarital sexual practices.

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#### INTRODUCTION

Based on the 2014 Survey of the Performance Indicators of Population, Family Planning, and Family Development Programs, 4.5% of adolescents had engaged in premarital sex. This figure increased to 5% in 2015.(1) In the same survey in 2016, it was found that 5.3% of male adolescents and 1.7% of female adolescents had engaged in premarital sex.(2) A study conducted in 28 countries involving 116,820 adolescents found that 13.2% of adolescents aged 12-15 had engaged in sexual activity<sup>3</sup> More than 22% of male adolescents and 7% of female adolescents in Lithuania had engaged in sexual activity before the age of 15.(3) Premarital sexual practices refer to sexual activities conducted before formal marriage, either with a future spouse or others.(4) The involvement of adolescents in premarital sexual practices increases the risk of maternal mortality, unwanted or early pregnancy, and the transmission of HIV/AIDS and other sexually transmitted infections.(5) The emergence of premarital sexual behavior, which impacts adolescent health, is influenced by various factors. Lawrence Green states that both behavioral and non-behavioral factors influence an individual's health. According to this theory, an individual's behavior is

influenced by three main factors: predisposing, enabling, and reinforcing factors.(6)

Predisposing factors in premarital sexual practices among adolescents include demographic characteristics, knowledge of contraceptive methods, and dating styles. Enabling factors include media exposure. Reinforcing factors include the parent's role and peer influence. Male adolescents are at higher risk of engaging in sexual behavior compared to females. Males have a higher sensitivity to stimuli that induce sexual sensations, resulting from higher levels of testosterone.(7):(8) Older adolescents are more likely to engage in premarital sex due to the further development of reproductive organs, which can increase sexual desire.(9) Higher levels of education can facilitate the acquisition of information influences attitudes and behaviors.(10)·(11) Adolescents with good knowledge of contraception are more likely to engage in premarital sex because they tend not to fear pregnancy.(10) Risky dating behaviors also influence adolescent participation in premarital sexual practices. 10 Dating increases sexual contact, and frequent contact can raise premarital sexual behavior.(12) Adolescents exposed to media are more likely to engage in premarital sex.(13)

Media often disseminates less comprehensive information related to reproductive health and tends to be pornographic, thereby increasing risky sexual behavior among adolescents.(9) In addition, adolescents who have less parental guidance in providing sexual information are more likely to engage in premarital sexual behavior.(14) Parents who are not open hinder adolescents from receiving comprehensive education on sexual behavior.(15) Peer influence also affects premarital sexual practices. Adolescents who have friends with risky behavior are more likely to engage in premarital sex.(16) Adolescents tend to share information and advice with their friends, making them more likely to adopt behaviors prevalent in their peer environments.(10)

This study will examine the relationships between sex, age, education level, knowledge of contraceptives, dating style, media exposure, parental role, and peer influence on premarital sexual practices among Indonesian adolescents. It will provide an overview of trends and relationships based on data from the Indonesia Demographic and Health Survey collected in 2007, 2012, and 2017. Research across these three survey periods is crucial for understanding changes in the factors contributing to premarital sexual behavior among Indonesian adolescents. This research will provide information for designing interventions through a holistic approach.

## **METHOD**

This study is a longitudinal analysis of the Indonesia Demographic and Health Survey (IDHS) subsurvey Adolescent Reproductive Health (ARH) for the years 2007, 2012, and 2017. The Inner City Fund (ICF) approved this survey's ethical review under the Demographic and Health Survey-7 program. The IDHS population consists of women and men aged 15-49 years. The sample for this study includes unmarried male and female adolescents aged 15-24 years in Indonesia, with selected samples consisting of 16,419 respondents from IDHS 2007, 16,993 from IDHS 2012, and 19,989 from IDHS 2017. Samples were chosen based on inclusion and exclusion criteria. The inclusion criteria were adolescents aged 15-24 years, unmarried, and respondents who answered all questions completely. The exclusion criteria included missing values and respondents who answered "do not know" to questions about premarital sexual experience and/or having friends with premarital sexual experience. In this study, the dependent variable is premarital sexual practices among adolescents. The independent variables include sex, age, education level, knowledge of contraceptives, dating style, media exposure, parental role, and peer influence.

Age refers to the respondent's age at their last birthday and is categorized into early adolescence for respondents aged 15-16 years and late adolescence for respondents aged 17-24 years.(17) Education level refers to the highest level of formal education attained by adolescents and is categorized into low (elementary to junior high school) and high (senior high school to college).(18) Knowledge of contraceptives refers to adolescents' understanding of tools or methods for delaying and preventing pregnancy and is categorized as poor or good based on the mean value.(19) Dating style refers to adolescent behavior while dating, such as holding hands, kissing on the lips, and touching sensitive body parts. Dating styles are categorized as non-risky, low-risky, and high-risky. Non-risky refers to adolescents who have never had a boyfriend or girlfriend or have been in relationships without holding hands, kissing on the lips, or touching sensitive body parts. Low-risky includes adolescents who have been in relationships and held hands. High-risky encompasses adolescents who have been in relationships and kissed on the lips and/or touched sensitive body parts.(20)

Media exposure refers to the frequency of mass media consumption, such as newspapers/magazines, radio, and television, among adolescents. It is categorized as never, rarely, or often. Adolescents who answered "never" to all three media questions fall under the "never" category. Those who answered "rarely" to at least one question without responding "often" to any fall under the "rarely" category. Adolescents who answered "often" to at least one question are categorized as "often." Parental role refers to the involvement of fathers and/or mothers as sources of sexual information for adolescents. Peer influence is assessed based on whether adolescents have friends who have engaged in premarital sexual practices. Peer influence is categorized as negative if adolescents have friends with premarital sexual experiences and positive if they do not. This study used multiple logistic regression to determine the variables that simultaneously influence premarital sexual practices among adolescents in Indonesia. Data analysis was conducted with weighting activated to produce data that can be represented at the provincial level.

#### RESULT AND DISCUSSION

Table 1 presents the distribution of premarital sexual practices among adolescents in Indonesia over the past decade. Based on Table 1, it is observed that adolescents proportion of adolescents who have engaged in premarital sexual practices has decreased slightly across each survey period.

**Table 1.** Distribution of Indonesian adolescents engaging in premarital sexual practices

Duama wital samual mua ati aa	200	7	201	2	2017	
Premarital sexual practices	n	%	n	%	n	%
Ever had sexual intercourse	949	5.8	924	5.4	1,054	5.3
Never had sexual intercourse	15,688	95.6	16,064	94.6	18,916	94.7
Total	16,412	100	16,998	100	19,970	100

Table 2. Multivariate analysis of the influence of independent variables on premarital sexual practices among Indonesian adolescents

Variable	2007			2012			2017		
	Exp (B)	95% CI	p-value	Exp (B)	95% CI	p-value	Exp (B)	95% CI	p-value
Sex									
Female	ref	2.1.4.00	0.0001	ref	7.06.0.42	0.0001	ref	2.07.4.50	0.0001
Male	3.89	3.1-4.89		6.53	5.06-8.43		3.69	2.97-4.59	
Age									
Early adolescence	ref	1.15-2.04	0.004	ref	2.03-3.63	0.0001	ref	1.54.2.56	0.0001
Late adolescence	1.53			2.72			2.06	1.54-2.76	
<b>Education level</b>					•				•
High	ref	1.34-1.88	0.0001	ref	1.15-1.58	0.0001	ref	1.70.0.44	0.0001
Low	1.58			1.35			2.09	1.78-2.44	
Knowledge of									
contraceptives			0.022			0.0001			0.0001
Poor	ref	1.02-1.43	0.033	ref	1.25.1.60	0,0001	ref	1 22 1 66	0.0001
Good	1.21			1.45	1.25-1.68		1.43	1.23-1.66	
Dating style			0.0001			0.0001			0.0001
Non-risky	ref		0.0001	ref		0.0001	ref		0.0001
Low-risky	0.39	0.19-0.78	0.008	0.53	0.21-1.39	0.197	0.46	0.22-0.97	0.041
High-risky	10.9	7.13-16.66	0.0001	23.08	11.04-48.24	0.0001	32.52	18.59-56.9	0.0001
Media exposure					0.0001				0.601
Often	ref		0.0001	ref		0.0001	ref		0.691
Rarely	2.01	1.58-2.55	0.0001	1.47	1.16-1.87	0.002	1.07	0.89-1.3	0.464
Never	4.46	2.29-8.66	0.0001	3.02	1.53-5.94	0.001	1.19	0.59-2.4	0.625
Parental role									
No	ref	1.12-1.87	0.005	ref	0.96-1.46	0.124	ref	0.98-1.43	0.075
Yes	1.45	1.12-1.07		1.18	0.70-1.40		1.19	0.70-1.73	
Peer influence			0.0007						0.000:
Positive	ref	7.35-14.85	0.0001	ref	4.65-9.78	0.0001	ref	3.69-6.85	0.0001
Negative	10.45			6.75			5.03		

Table 2 presents the results of a multiple logistic regression analysis aimed at identifying the variables that simultaneously influence premarital sexual practices among adolescents in Indonesia across three survey periods. The analysis reveals that several predisposing factors significantly affect these practices, including sex, age, education level, knowledge of contraceptives, and high-risk dating styles. In 2007, male adolescents were 3.89 times more likely to engage in premarital sexual practices compared to females. In 2012, older adolescents were 2.72 times more likely to engage in premarital sexual practices compared to younger adolescents, while adolescents with a lower education level were 35% more likely to engage in premarital sexual practices. In 2017, adolescents with good knowledge of contraceptives were 43% more likely to engage in premarital sexual practices, while adolescents with high-risk dating styles were 32.5 times more likely to engage in premarital sexual practices

compared to those with non-risky behaviors. Table 2 also shows that low-risky dating styles were a protective factor against premarital sexual practices among adolescents, although this was only statistically significant in 2007 and 2017 IDHS.

According to enabling factors, peer influence significantly affected premarital sexual practices among adolescents in Indonesia across all three survey periods. In 2017, adolescents with peers who exerted negative influence were five times more likely to engage in premarital sexual activities. Throughout the three surveys, media exposure and parental involvement were variables that did not provide sufficient evidence to influence premarital sexual practices among adolescents. This finding suggests that the role of parents was insignificant in 2012, while media exposure had no effect on premarital sexual practices among adolescents in 2017. Although not statistically significant across all three surveys, the odds

ratios (OR) indicate a higher likelihood of engaging in premarital sexual practices among adolescents who had never been exposed to media. Similarly, adolescents whose parents were not involved in discussions about sexuality also exhibited higher engagement in these practices. Over the past decade, the proportion of adolescents in Indonesia engaging in premarital sexual practices has continued to decrease, albeit not significantly.

The percentage of adolescents who reported having premarital sexual intercourse was 5.8% in 2007, 5.4% in 2012, and 5.3% in 2017. The study identified several factors influencing premarital sexual practices among adolescents, including predisposing factors (such as sex, age, education level, knowledge of contraceptives, and dating style), enabling factors (media exposure), and reinforcing factors (parental influence and peer pressure)...

These findings suggest that the variables significantly associated with premarital sexual practices among adolescents in Indonesia across all three survey periods include sex, age, education level, knowledge of contraceptives, dating style, and peer influence, with high-risk dating behaviors having the most substantial impact.

Across the three survey periods, media exposure and parental role did not consistently influence adolescent premarital sexual practices. This inconsistency may be due to the contribution of unexamined variables, such as internet accessibility and social media presence. Easy internet access facilitates the dissemination of pornography content.(21) Rapid information sharing through social media often leads to inadequate content filtering.(22) Without parental guidance, adolescents with heightened curiosity can freely access pornography online(23) A study in East Lampung revealed that adolescents exposed to pornography are eight times more likely to engage in risky sexual behavior (p = 0.0001).(24)

Biologically, the testosterone hormone is closely associated with sexual desire.(9) Testosterone levels are known to be higher in males than females, which correlates with the higher prevalence of premarital sexual activity among adolescent boys compared to girls.(25) Older adolescents tend to experience stronger sexual desires, influencing changes in sexual behavior.(10) During puberty, boys experience peak testosterone levels, which contribute to heightened sexual interest. These levels gradually decline between the ages of 30 and 65.(25) Higher education facilitates access to and understanding of information, fostering positive attitudes. Knowledge of contraception provides adolescents with insights to avoid or prevent pregnancy as a consequence of premarital sexual practices.(26) This knowledge influences their thinking, enabling them to address their sexual desires more responsibly before marriage.(27)

Adolescents' experiences during dating, such as holding hands, kissing, and petting, can escalate into riskier behavior, including sexual intercourse. Continuous physical contact increases sexual desire, with adolescents often progressing from low-risk behaviors, such as hand-

holding, to high-risk behaviors, such as kissing and touching sensitive areas.30 Although media exposure was not consistently significant, it still warrants attention. A lack of information related to sexuality, including free sex, its consequences, and prevention methods, may arise if adolescents fail to access media.(28) According to the 2007, 2012, and 2017 Indonesian Demographic and Health Surveys, adolescents obtain information on physical changes during puberty, delaying marriage age, sexually transmitted infections, HIV/AIDS, and condom use from various mass media sources, including newspapers or magazines, radio, and television.(29) (30)

Parental roles were also not consistently significant across the three surveys. Adolescents' curiosity often prompts them to explore or even experiment with what they do not know, particularly if their parents are less involved in providing comprehensive sexual education. A study in East Lampung found that adolescents under parental supervision are more likely to delay or avoid early sexual relationships.(23) Additionally, adolescents seek acceptance in their environment, including peer groups.(26) Spending more time discussing matters with friends significantly influences their sexual behavior. Sexual communication with peers impacts adolescents' decision-making regarding sexual health. Bandura's theory suggests that individuals learn behaviors through interaction, observation, and imitation of others.(31)

This study uses secondary data from the 2007, 2012, and 2017 Indonesian Demographic and Health Surveys (IDHS) to offer insights into changes in factors contributing to premarital sex among Indonesian adolescents. However, there are limitations to this study. The variables examined were restricted to those available in the IDHS questionnaire, and respondents may not have disclosed honest answers. Researchers had no control over the quality of the survey data, as they were not involved in designing, preparing, or collecting the data directly in the field.

#### **CONCLUSION**

The proportion of adolescents engaging in premarital sexual practices has decreased over the years. Several factors influence these practices among adolescents across the three survey periods, including sex, age, education level, knowledge of contraceptives, dating style, and peer influence. Initially, media exposure and parental involvement were statistically significant; however, these variables have become insignificant over time. Through social media, the National Population and Family Planning Board or Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN) can enhance outreach to adolescents regarding the importance of delaying or preventing premarital sexual practices, promoting healthy dating behaviors, and fostering positive peer environments. Additionally, parents are to play an active role in providing education for their children, especially particularly who have reached adolescence.

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# **Conflict of Interest**

The authors declare that there is no conflict of interest.

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