

Risk-taking behavior and biopsychosocial theory for predicting risky sexual behavior of adolescents in Islamic Boarding Schools



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ABSTRACT

Background: Risky sexual behavior in adolescents occurs in several cities in Indonesia, including in students in Islamic boarding schools. The phenomenon of risky sexual behavior is found in adolescents in Islamic boarding schools. This study aimed to analyze the factors that influence risky sexual behavior on a biopsychosocial basis.

Method: This study used a cross-sectional observational analytical design, explaining the relationship between variables through hypothesis testing. The samples of this study were adolescents from Islamic Boarding Schools in Probolinggo. A total of 346 adolescents were selected by multistage random sampling. Data were analyzed by Structural Equation Modeling-Partial Least Square (SEM-PLS) test.

Results: The results showed that the independent variables contributed 43.8% to risky sexual behavior, and the model had a good fit. There is a significant relationship between biological maturation, self-perceptions, perception of social and spiritual, and perceptions of sexual on risky sexual behavior.

Conclusion: The results of this study revealed that the model of risky sexual behavior viewed from risk-taking behavior and biopsychosocial theory could be used as a theoretical basis for carrying out activities related to health-promotive and preventive actions for adolescents, which focus on individual, family and peer group factors.

Keywords: *adolescents, risky sexual behavior, risk-taking behavior.*

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INTRODUCTION

Risky sexual behavior in adolescents occurs in several cities in Indonesia, including in students in Islamic boarding schools. An Islamic boarding school in Makassar showed that 45.6% of their students had had risky sexual behavior.¹ Risky sexual behavior will increase the chance for someone who does it to be exposed to or transmit sexually transmitted diseases (HIV/AIDS, gonorrhea, syphilis and genital herpes) and pregnancy. Based on a needs assessment report regarding Adolescent Sexual and Reproductive Health showed that 80.7% of students both in Islamic boarding schools and schools with Islamic backgrounds outside the Islamic boarding school (Madrasah Aliyah) had had various sexual activities.²

A number of studies that analyze from a multisystemic perspective using ecological theory showed that the relationship between systems is

transactional and interactional—with each system having a direct and indirect influence on risky sexual behavior.³ Based on the analysis of the model, the approach used tends to be from a singular perspective or unidimensional in nature, while studies from multiple perspectives have not been widely carried out on the model. Furthermore, it also seems to have never been done in groups of adolescents in Islamic boarding schools, so researchers were interested in conducting further research to develop this model to explain risky sexual behavior in adolescents in Islamic boarding schools who have different characteristics compared to adolescents in general who are not in Islamic boarding schools. This study aimed to examine a biopsychosocial-based risky sexual behavior model that shows the relationship

between biological maturation, self-perceptions, perceptions of social environment, and perceptions of spiritual and sexual perceptions of risky sexual behavior.

METHOD

Research Design and Sampling

This study used a cross-sectional observational analytical design, explaining the relationship between variables through hypothesis testing. The samples of this study were adolescents from Islamic Boarding Schools in Probolinggo. A total of 346 adolescents were selected by multistage random sampling. The Inclusion criteria were all students of Class X, XI, and XII aged 16-19 years, unmarried and willing to be involved as subjects in this study, as evidenced by the filling of informed consent. Exclusion criteria were adolescents who had physical limitations in the form of sensory

disorders and adolescents who were absent or sick at the time of the study. Selected adolescent respondents were then given an explanation of the study conducted. For those who were willing to take part in the study, researchers then proceeded to meet their parents/guardians to give an explanation of the study and give informed consent. Informed consent was given to adolescent respondents after parents/guardians consented to their children to take part in the study. This research has received ethical clearance approval number NJ.T06/LP3M/SK/005/01/2021. This research was conducted in 2021. Research instruments used by researchers consisted of biological maturation, self-perceptions, perceptions of social, and perceptions of spiritual and perceptual factors that influence adolescent sexual behavior. The instruments used have been tested for validity and reliability with a product-moment correlation coefficient of 0.3 and a Cronbach alpha value of 0.920. This research uses PLS-SEM with the software used is SmartPLS3.

Data analysis

The data analysis technique used in this study was the inferential technique which was used to test the empirical model and the hypotheses proposed by researchers. Inferential analysis was done using Structural Equation Modeling (SEM) based on variance called Partial Least Square (PLS). Structural Partial least Square is an alternative approach that shifts from covariance-based SEM to variance-

based SEM. PLS is intended for causal predictive analysis in situations of high complexity and low theoretical support. The use of PLS in this study was to help researchers to get the value of latent variables for prediction purposes. The steps taken in PLS include designing a measurement model (outer model), designing a structural model (inner model), constructing a path diagram, converting a path diagram to a system of equations, estimating path coefficients, loading and weights, evaluating the goodness of fit and testing hypotheses.

RESULTS

The average age of adolescent respondents in this study was 16 years (age range of 16-19 years), 135 or 39% of respondents have lived in Islamic boarding schools for 3 years, and 200 or 58% of respondents were from senior high school institutions (Table 1). Figure 1 shows that almost 43.8% (R Square) of the variation of risky sexual behavior is explained by biological maturation, self-perceptions, perceptions of social environment, and perceptions of spiritual and perceptual factors. There is a significant relationship between biological maturation ($r = 0.187$), self-perceptions ($r = 0.175$), perceptions of social ($r = 0.208$), perceptions of spiritual ($r = 0.252$) and perceptual ($r = 0.163$) factors with risky sexual behavior. All variables produced Predictive Relevance (Q^2) values greater than 0 (zero), which indicates that the model is said to be

good enough.

DISCUSSION

This study is the first study to discuss adolescents' sexual behavior in Islamic boarding schools using a risk-taking behavior theory and biopsychosocial approach. The results of this study reveal that biological maturation, self-perceptions, perceptions of social, and perceptions of spiritual and perceptual factors are empirically proven to be able to map the multidimensional behavior of adolescent risky sexual behavior.

Biological maturation, either directly or indirectly, significantly influence risky sexual behavior. The results of this study are in line with a previous study by Downing, which showed that biological factors play a role in risky sexual behavior.⁴ Puberty which is characterized by biological changes such as increased levels of sex hormones, plays a role in brain development and in adolescent risk-taking. Sex hormones contribute to the reorganization of dopaminergic neurons in the motivational system, which can then lead to increased risk-taking and sensation-seeking self-perceptions in this study indicate that there is an influence on risky sex.⁵⁻⁹ The study conducted by Reuben *et al.* proved that self-efficacy is a psychological factor that greatly influences the emergence of risky sexual behavior.¹⁰ Another indicator of psychological factors, namely self-esteem, from several studies results—shows that there is a relationship between self-esteem and risky sexual

Table 1. Characteristics of respondents' demographic data.

No	Characteristics	Indicator	Frequency	
			Σ	%
1.	Age	16 years old	103	30
		17 years old	93	27
		18 years old	102	29
		19 years old	48	14
2.	Length of stay in Islamic boarding school	1 year	24	7
		2 years	104	30
		3 years	135	39
		4 years	45	13
		5 years	26	8
		6 years	12	3
3.	School Origin	SMA (Senior High School)	200	58
		SMK (Vocational High School)	32	9
		MAN (State Madrasah Aliyah)	101	29
		MA (Madrasah Aliyah)	13	4

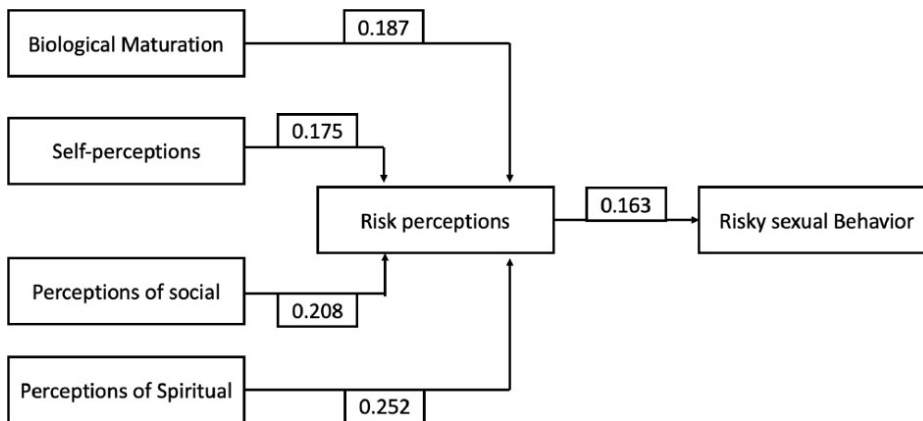


Figure 1. Relationship between biological maturation, self-perceptions, perception of social environment and spiritual, perceptions sexual and risky sexual behavior using structural equation modeling.

behavior. This statement is supported by Kathleen *et al.*, who said that adolescents who have low self-esteem reported starting sex earlier and having a risky partner.¹¹

The perceptions of social and spiritual in this study also indicate that there is an influence on risky sexual behavior. This is in line with the study conducted by Masni and Settheekul *et al.*, which showed that parent-adolescent communication, parental monitoring, perceived peer norms and types of school are significant predictors of adolescent sexual behavior; this study shows that spiritual factors are the most influential factors on risky sexual behavior. The study conducted by Fajar regarding the relationship of religiosity with adolescent sexual behavior showed that adolescents with high religiosity had fewer risk factors for sexual behavior than adolescents with low religiosity.¹² This is relevant to the function of religion as an educational function, transformative function, peace function, creative function, savior function, sense fostering solidarity function, social control function and sublimation function.

Limitations in this study the possibility of confounding factors that can not be controlled by the researcher is the honesty of respondents in answering questions. This study is still limited to only female adolescents. Further research is expected to expand the target range not only to adolescent girls in order to obtain a model of adolescent risky sexual behavior in different settings of adolescent life.

CONCLUSION

This study reveals that a risk-taking behavior theory and a biopsychosocial approach can be used to predict risky sexual behavior and used as a theoretical basis for carrying out activities related to health-promotive and preventive actions for adolescents, which focus on individual, family and peer group factors.

ETHICAL CONSIDERATION

This research has received ethical clearance approval number NJ.T06/LP3M/SK/005/01/2021.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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AUTHOR'S CONTRIBUTION

Data gathering and idea owner of this study are by SAA, MMM, S, and RI; study design by SAA, MMM, S, and RI; data gathering by SAA and MMM; writing and submitting manuscript by SAA, MMM, S, and RI; and editing and approval of the final draft by SAA, MMM, S, and RI.

REFERENCES

- Masni M, Hamid S. 2018. Determinan perilaku seksual berisiko pada remaja Makassar (studi kasus santri Darul Arqam Gombara dan SMAN 6. Media Kesmas. 2018;14(1):68. <https://doi.org/10.30597/mkmi.v14i1.3699>
- Swararahima. Kespro dan seksualitas dalam tradisi pesantren (internet). Medscape. 2019 (cited 1 september 2019). Available from: <https://swararahima.com/2018/08/03/kespro-dan-seksualitas-dalam-tradisi-pesantren/>
- Kotchick BA, Shaffer A, Forehand R, Miller KS. Adolescent sexual risk behavior: a multi-system perspective. Clin Psychol Rev. 2001;21(4):493-519. doi:10.1016/s0272-7358(99)00070-7.
- Downing J, Bellis MA. Early pubertal onset and its relationship with sexual risk-taking, substance use and anti social behaviour: a preliminary cross-sectional study. BMC Pub Health, 2009;9: 446. <http://doi.org/10.1186/1471-2458-9-446>.
- Irwin CE Jr, Millstein SG. Biopsychosocial correlates of risk-taking behaviors during adolescence. Can the physician intervene?. J Adolesc Health Care. 1986;7(6 Suppl):82S-96S.
- Shirtcliff EA, Dahl RE, Pollak SD. Pubertal development: correspondence between hormonal and physical development. Child Dev. 2009;80(2):327-337. doi:10.1111/j.1467-8624.2009.01263.x.
- Steinberg L. A Social Neuroscience Perspective on Adolescent Risk-Taking. Dev Rev. 2008;28(1):78-106. doi:10.1016/j.dr.2007.08.002.
- Dahl RE. Adolescent brain development: a period of vulnerabilities and opportunities. Keynote address. Ann N Y Acad Sci. 2004;1021:1-22. doi:10.1196/annals.1308.001.
- Sisk CL, Zehr JL. Pubertal hormones organize the adolescent brain and behavior. Front Neuroendocrinol. 2005;26(3-4):163-174. doi:10.1016/j.yfrne.2005.10.003.
- Reuben OS, Obayemi O, Oluwatosin D. Psychological predictors of premarital sexual relationship among in-school adolescents in a Western Nigerian city. Univ J of Pub. 2016;4(4):196-202. doi:10.13189/ujph.2016.040405.
- Ethier KA, Kershaw TS, Lewis JB, Milan S, Niccolai LM, Ickovics JR. Self-esteem, emotional distress and sexual behavior among adolescent females: inter-relationships and temporal effects. J Adolesc Health. 2006;38(3):268-274. doi:10.1016/j.jadohealth.2004.12.010.
- Fajar NA. Analisis biopsikososial dan spiritual pada perilaku seks bebas remaja muslim religius di Palembang (Disertasi). Surabaya: Universitas Airlangga. 2015.



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