

Related factors to HIV/AIDS prevention behavior of adolescents in Jakarta's high school

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ABSTRACT

Adolescents are developing self-maturity, so they should have the correct views to become a person with a positive self-concept. Therefore, this period requires the role of parents. The parental roles include educating, teaching, disciplining, and protecting children to reach adulthood according to social norms. However, adolescents prefer to spend time with their peers, so peers are dominant in influential and modeling aspects of adolescents' sexual behavior with their partners. One of the behaviors compulsorily concerned is human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) prevention behavior. This study aimed to determine the relationship between characteristics, communication quality, parenting, peer roles, and HIV/AIDS prevention behavior in adolescents at "Y" Senior High School in North Jakarta. This study employed a cross-sectional research design. Samples were taken using the purposive sampling technique, and 208 students were obtained from 432 students. Gender, parental communication quality, and peer roles affected HIV/AIDS prevention behavior. The dominant variable was parental communication quality (OR=0.509). After controlling for gender and peer role characteristics, adolescents with strong parental communication quality were 0.51 times more likely to participate in HIV/AIDS-positive preventive activities than those with poor parental communication quality. Adolescents are expected to communicate with their parents, especially about sexual issues, more openly.

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1. INTRODUCTION

Indonesia has the fastest spread of human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) Asia. The number of HIV cases in Indonesia in 2018 was 640,000; 0.4% of the sufferers were 15-49 years old [1]. Meanwhile, in DKI Jakarta Province, 352 HIV/AIDS cases are suffered by people aged 15-24 years. These data indicate that adolescents are a population at risk of HIV/AIDS because they have reproductive health (sexuality) and are more likely to be exposed to drugs (narcotics, alcohol, psychotropic, and other addictive substances) [2].

Adolescents are developing self-maturity, so they should prepare themselves with the correct views to become a person with a positive self-concept. They also experience a transition or change from childhood to adolescence, including biological, social, emotional, and cognitive transitions [3]. The transition period is a

challenge for forming an adolescent's personality; therefore, this period requires the role of parents [4]. The parenting role is a process of educating, teaching, disciplining, and protecting children to reach adulthood following social norms [5]. Parenting models strongly influence children's behavior and personality. Therefore, parents are the foundation of early childhood education. For this reason, parent should teach sexual knowledge and precautions to their children [6], [7]. Parents should also have good communication quality when delivering sexual education and HIV/AIDS prevention.

Parental communication is essential in adolescents' lives to discuss reproductive and sexual health [8]. Therefore, quality parental communication is needed for sexuality education and HIV/AIDS prevention [9]. Good interpersonal communication between parents and children enables children to adapt to their community environment and promotes their positive children [10]. It is proven that the quality of parental communication directly or indirectly influences adolescents' reproductive health and HIV/AIDS prevention behavior [11], [12]. In daily life, adolescents interact with parents at home and peers at school or in groups. However, they prefer to spend time with their peers [13]. It is no wonder that peers have a dominant role, which can influence and become a modeling behavior to prevent sexually transmitted infections (STIs) [14]–[16]. Peers' persuasion of adolescents at SMAN "A" in Surabaya to do a risky activity has strongly influenced their behavior [17]. In addition, almost all adolescents who receive good peer roles are positively supported by their peers to acquire HIV/AIDS knowledge and prevention; thus, they understand moral messages about HIV/AIDS prevention behavior [18], [19].

HIV/AIDS prevention behavior also requires the role of nurses who educate and provide health education to change adolescents' negative behavior. Based on a preliminary study at SMA "Y" in North Jakarta, the researcher obtained information by interviewing ten students regarding the quality of parental communication and the role of peers in HIV/AIDS prevention behavior. Some students argued that their parents did not communicate effectively with them. Moreover, the students admitted they were sometimes not open with their parents because their parents often used a judgemental tone when talking to them. Some students stated that the role of peers significantly influenced their associations and behaviors, such as smoking behavior, dating behavior, and curiosity about drugs.

Ineffective communication between parents and children, as well as the insufficient role of peers in HIV/AIDS prevention behavior, are still found. These problems must be addressed immediately unless a negative impact will happen in the future. This study aims to determine the relationship between adolescent characteristics, communication quality, parenting, peer role, and HIV/AIDS prevention behavior among adolescents in a senior high school in Jakarta. The results of this study are expected to be useful for adolescents, parents, teachers, and peers to create superior youth.

2. METHOD

This quantitative research employed an analytical descriptive design with a cross-sectional research method. The population of this research was all adolescents, namely 432 students at "Y" Senior High School in North Jakarta. The sample selection method uses the Slovin formula in which the calculation of the formula obtained a minimum number of samples in "Y" Senior High School in North Jakarta [20], [21]. The research samples were 208 adolescents selected using the purposive sampling technique, a sampling technique used when the researcher already has a target individual with characteristics appropriate to the research. The inclusion criteria of the respondents were active students in grades 10 and 11 who are mentally and physically healthy and willingly participated in the whole research series. The exclusion criteria of the respondents were students who had never dated, were married, and had not experienced puberty (wet dreams for boys and menstruation for girls). Before collecting data, the researchers conducted a research ethics review at the UFDK Health Research Ethics Committee, with registration number 085/KEPK/II/2023. Data was collected using a questionnaire that had been tested for validity and reliability, as follows: The quality of communication of parents was declared valid with a calculated r value = 0.420–0.858 > r table = 0.361 and reliable with a Cronbach's Alpha value of 0.955, the peer roles was declared valid with a calculated r value = 0.403–0.712 > r table = 0.361 and reliable with a Cronbach's Alpha value = 0.844, parenting styles are declared valid with a calculated r value = 0.416–0.808 > r table = 0.361 and reliable with a Cronbach's Alpha value of 0.853, and HIV prevention behavior/AIDS was declared valid with a calculated r value = 0.405–0.800 > r table = 0.361 and reliable with a Cronbach's Alpha value of 0.915. The validity and reliability test of questionnaires was carried out on 30 students at SMA "P" North Jakarta in February 2023. Then, data collection on respondents was carried out in March 2023. The collected data were analyzed using a logistic regression test to determine the most influential factors of HIV/AIDS prevention behavior.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Respondents characteristics

Table 1 shows that the majority of respondents are in the middle adolescent developmental stage, are aged <16.32 years (121 students or 58.20%), are female (133 students or 63.9%), have good parental communication (128 students or 61.54%), and receive good parenting style (114 students or 54.80%). Moreover, most respondents receive good peer roles (112 students or 53.84%) and perform negative behavior in HIV/AIDS prevention (116 students or 55.80%). Therefore, the researchers should pay attention to adolescents' behavior.

Table 1. Frequency distribution of adolescents' demography, the quality of parental communication, parenting styles, peer roles, and HIV/AIDS prevention behavior

Variables	Frequency	Percentage (%)
Age		
Middle adolescence (ages <16.32)	121	58.20
Late adolescence (ages ≥16.32)	87	41.80
Genders		
Male	75	36.10
Female	133	63.90
Quality of communication of parents		
Good	128	61.54
Poor	80	38.46
Parenting styles		
Good	114	54.80
Poor	94	45.20
Peer roles		
Good	112	53.84
Poor	96	46.16
HIV/AIDS prevention behavior		
Positive	92	44.20
Negative	116	55.80

3.1.2. Correlation of respondents characteristics, parental communication, parenting, as well as peer role with HIV/AIDS prevention behavior

Table 2 shows that the characteristic significantly correlating with the HIV/AIDS prevention behavior of adolescents in senior high schools in Jakarta is gender (p -value=0.03). Meanwhile, age does not correlate with adolescents' HIV/AIDS prevention behavior. The statistical results show OR=2.513, indicating that male adolescents are 2.5 times more likely to engage in positive HIV/AIDS prevention behavior than female adolescents (95% CI: 1.407-4.489).

Table 2. Analysis of relationships between adolescents' characteristics (sex and age) and HIV/AIDS prevention behavior

Variables	HIV/AIDS prevention behavior						p-values	OR (95% CI)
	Positive		Negative		Total			
	n	%	n	%	n	%		
Age								
Middle adolescence (ages <16.32)	53	43.8	68	56.2	121	100	0.091	0.959
Late adolescence (ages >16.32)	39	44.8	48	55.2	87	100		(0.551-1.670)
Genders								
Male	44	58.7	31	41.3	75	100	0.03	2.513
Female	48	36.1	85	63.9	133	100		(1.047-4.489)

Table 3 shows the relationship between the quality of parental communication and HIV/AIDS prevention behavior. The results show that 63 adolescents (49.2%) receive good parental communication and have positive HIV/AIDS prevention behavior. In contrast, 29 people (36.3%) receive poor parental communication and have positive HIV/AIDS prevention behavior. These results conclude that there is no significant relationship between the quality of parental communication and adolescents' HIV/AIDS prevention behavior, with a p -value of 0.091 ($p > 0.05$). The statistical test revealed a value of OR=1.705, indicating that adolescents with poor-quality parental communication are 1.7 times more likely to engage in positive HIV/AIDS prevention behaviors than adolescents with good-quality parental communication (95% CI: 0.961-3.022).

Furthermore, Table 3 shows the relationship between parenting styles and HIV/AIDS prevention behavior. The result shows that 45 adolescents (47.9%) have poor parenting and positive HIV/AIDS prevention behavior. The result also shows no significant relationship between parenting styles and HIV/AIDS prevention behavior of adolescents, with a p-value of 0.412 ($p > 0.05$) and an OR value of 0.764. These results indicate that adolescents with poor parenting styles are 0.76 times more likely to engage in positive HIV/AIDS prevention behaviors than adolescents with appropriate parenting styles (95% CI: 0.441-1.324). In addition, data on the relationship between peer roles and HIV/AIDS prevention behaviors show that 46 adolescents (47.9%) have poor peer roles and positive HIV/AIDS prevention behaviors. This result concludes that there is no significant relationship between peer roles and adolescents' HIV/AIDS prevention behaviors among adolescents, with a p-value of 0.395 ($p > 0.05$) and an OR value of 0.758. These results indicate that adolescents with poor peer roles are 0.76 times more likely to engage in positive HIV/AIDS prevention behaviors than those with good peer roles (95% CI: 0.437-1.313).

Table 3. Analysis of relationships between parental communication, parenting, as well as peer role and HIV/AIDS prevention behavior of adolescents

Variables	HIV/AIDS prevention behavior						p-value	OR (95% CI)
	Positive		Negative		Total			
	n	%	n	%	n	%		
Quality of communication of parents								
Good	63	49.2	65	59.8	128	100	0.091	1.705
Poor	29	36.3	51	63.8	80	100		(0.961-3.022)
Parenting styles								
Good	47	41.2	67	58.8	114	100	0.412	0.764
Poor	45	47.9	49	52.1	94	100		(0.441-1.324)
Peer roles								
Good	46	41.1	66	58.9	112	100	0.395	0.758
Poor	46	47.9	50	52.1	96	100		(0.437-1.313)

3.1.3. The variables that have significant relationships with HIV/AIDS prevention behavior

Table 4 shows the results of the bivariate selection. Variables with a p-value < 0.25 applicable to a logistic regression model are gender ($p = 0.02$) and parental communication quality ($p = 0.06$). Meanwhile, age, peer roles, and parental education are essential variables for adolescents' HIV/AIDS prevention behavior.

Table 4. Analysis of the feasibility of independent variables for the multivariate logistic regression test model

Variables	p-values
Genders	0.02
Age	0.883
Quality of communication of parents	0.066
Parenting styles	0.337
Peer roles	0.322

Table 5 shows stages in logistic regression modeling of phase 1. The selection of variables has a p-value > 0.05 . The first modeling has revealed that three variables, namely age, peer roles, and parenting, have a p-value > 0.05 . The variable of age has the most significant p-value. Thus, this variable is excluded from the subsequent modeling. However, after the second model, the OR $> 10\%$ value does not change; thus, the age variable is still excluded. The variable of parenting style has a p-value > 0.05 , so is excluded from the following modeling as it has the most significant p-value. In stage 3, before and after excluding the variable of parenting styles, none of the variables show any changes with a value $> 10\%$. Therefore, the variable of parenting styles is still excluded. After excluding the variable of parenting styles, the variable of peer roles does not show any changes. Therefore, this variable is excluded from the subsequent modeling (the fourth regression stage). The changes in OR values in stage 4 are as follows.

Table 6 shows changes were calculated before and after removing the peer role. The calculation has revealed that some variables show changes of $> 10\%$. Therefore, the variable of peer roles is included again in the modeling. Afterward, this study obtained the final modeling.

Table 5. Stages of modeling factors that influence HIV/AIDS prevention behavior of adolescents

Variables	B	Wald	p-values	OR	95% CI for EXP(B)
Stage-1 Logistic regression modeling					
Genders	-0.949	9.773	0.002	0.387	0.213-0.702
Age	-0.041	0.020	0.889	0.959	0.537-1.714
Quality of communication of parents	-0.698	4.965	0.026	0.498	0.269-0.919
Parenting styles	0.217	0.542	0.461	1.242	0.697-2.212
Peer roles	0.436	2.111	0.146	1.547	0.859-2.785
Stage-2 Logistic regression modeling					
Genders	-0.949	9.762	0.002	0.387	0.214-0.702
Quality of communication of parents	-0.694	4.947	0.026	0.499	0.271-0.921
Parenting styles	0.217	0.543	0.461	1.242	0.698-2.213
Peer roles	0.432	2.092	0.148	1.540	0.858-2.765
Stage-3 Logistic regression modeling					
Genders	-0.972	10.379	0.001	0.378	0.209-0.683
Quality of communication of parents	-0.675	4.735	0.030	0.509	0.277-0.935
Peer roles	0.433	2.108	0.146	1.541	0.860-2.764
Stage-4 Logistic regression modeling					
Genders	-0.954	10.118	0.001	0.385	0.214-0.693
Quality of communication of parents	-0.585	3.783	0.052	0.557	0.309-1.005

Table 6. Calculation of changes in OR values after stage 4 before and after removing the variable of peer roles

Variables	OR golden standards	OR after excluding the variable of peer roles	Changes OR (%)
Age	0.959	-	-
Genders	0.387	0.385	0.516
Quality of communication of parents	0.498	0.557	11
Parenting styles	1.242	-	-
Peer roles	1.547	-	-

Table 7 summarizes the results of the multivariate analysis with the logistic regression test. The result shows that the variables that have significant relationships with HIV/AIDS prevention behavior are the variables of gender and communication quality of parents. Meanwhile, the variable of peer roles functions as a control variable. The variables with the most significant effect on the dependent variable can be revealed by investigating the odds ratio (OR) for significant variables; the greater the OR value, the greater the impact on the dependent variable analyzed. This study has proven that the quality of parental communication variables significantly influences HIV/AIDS prevention behavior. The analysis has obtained that the OR of the variable of peer role is 0.509. This score indicates that after being controlled by variables of gender and peer roles, adolescents who receive good quality parental communication will probably perform positive HIV/AIDS prevention behavior 0.51 times as high as adolescents who receive poor quality parental communication.

Table 7. Final results of logistic regression modeling

Variables	B	Wald	p-values	OR	95% CI for EXP(B)
Genders	-0.972	10.379	0.010	0.378	0.209-0.683
Quality of communication of parents	-0.675	4.375	0.030	0.509	0.277-0.935
Peer roles	0.433	2.108	0.146	1.541	0.860-2.764
Constant	0.782	7.091	0.008	2.186	

*Dincating on $\alpha=0.05$

Based on the analysis results, the multivariate equation model is as follows. Z HIV/AIDS prevention behavior = $0.782 + (-0.972) \text{ gender} + (-0.675) \text{ communication quality of parents} + 0.433 \text{ peer roles}$

$$f(z) = 1 : (1 + e^{-z})$$

$$f(\text{HIV/AIDS prevention behavior}) = 1 : (1 + e^{-(0.782 + (-0.972) \text{ gender} + (-0.675) \text{ communication quality of parents} + 0.433 \text{ peer roles})})$$

Description: Positive HIV/AIDS prevention behavior = 1, and negative HIV/AIDS prevention behavior = 0; male sex is = 1, and female sex = 0; good parental communication quality = 1, and not good parental communication quality = 0; good peer role = 1, and not good peer role = 0

Male adolescents who receive a good quality of parental communication and have a good peer role will be able to perform HIV/AIDS prevention behavior. The model for this phenomenon is as follows.

$$\begin{aligned}
 &=1:(1+e^{-(0.782+(-0.972) \text{ gender} + -0.675 \text{ communication quality of parents} + 0.433 \text{ peer roles})}) \\
 &=1:(1+e^{-(0.782+(-0.972 \times 1) + (-0.675 \times 1) + 0.433 \times 1)}) \\
 &=1:(1+e^{-(0.782-0.972-0.675+0.433)}) \\
 &=0.394
 \end{aligned}$$

This model concludes that the opportunity of male adolescents with good quality parental communication and peer roles to perform HIV/AIDS prevention behavior is 39.4%.

3.2. Discussion

This study has found that most respondents are middle adolescents aged <16.32 years. This finding is consistent with a study discovering that adolescents aged 10-19 years experience sexual maturation behaviors that may lead to intimate heterosexual relationships; these adolescents are at risk of HIV/AIDS infection [22]. Another study reports that the impact of the global HIV epidemic on adolescents and young adults aged 15-24 years is approximately 50%, the number of HIV infections increases every year, and adolescents are a key target group for behavioral and biomedical prevention [23]. A systematic review confirms that adolescents and young adults aged 15-24 years represent a significant proportion of the population at risk of HIV/AIDS [24].

However, this study has revealed that adolescent age does not contribute significantly to HIV/AIDS prevention behavior. This finding is inconsistent with a study showing that young women contribute more significantly to the incidence of HIV/AIDS than men of the same age because young women prefer to have sex with men older than them (over 1-10 years) [25]. Older men are at risk of being infected with HIV/AIDS. Women who have early sex will contribute more to HIV-positive serotypes than men [26]. Male adolescents with an average age of 20.62 years who have unprotected heterosexual sex are at risk of HIV/AIDS infection [27]. The finding of this study disagrees with research showing that HIV risk factors in adolescents and young adults are associated with age [24].

This study has discovered most high school students in Jakarta are female. These results are supported by a study discovering that most high school students are female [28]. Another study has also discovered that 56.3% of vocational high school students are female, while the remaining 43.7% are male [29]. A study has also found that more than half of the respondents are female [30]. These phenomena prove gender equality between men and women, in which the population of female students outnumbers the population in the school community.

Statistical analysis has discovered two points. First, gender is correlated with HIV/AIDS. Second, male students are more likely to engage in HIV/AIDS prevention behaviors. A study of adolescents aged 10-19 years in Kenya has revealed three key findings. First, male adolescents (42%) are more likely to report sexual activities than female adolescents (32%). Second, male adolescents (21%) are more aware of using condoms than female adolescents (7%). Third, more male adolescents (17%) use condoms during sexual intercourse than female adolescents (3%) [31]. Meanwhile, 11.0% of male adolescents and only 5.7% of female adolescents have sexual intercourse. In addition, another study has shown that male adolescents have an earlier sexual debut, are less likely to use contraception, and have lower levels of sex education than female adolescents do [32].

Meanwhile, another study reports that female adolescents have good behavioral intentions to use contraceptives and comply with norms regarding reproductive health, pregnancy, and prevention of sexual diseases, with an r-value of 0.23 ($p < 0.01$; 95% CI 0.14, 0.31) [33]. In contrast, the male adolescent has an r-value of only 0.22 ($p < 0.01$; 95% CI 0.12, 0.31) [33]. Another study reports that male adolescents are less likely to engage in sexual prevention behaviors such as having more than one sexual partner, paying for sex, and using PrEP condoms during sex to avoid HIV/AIDS [34]. Men are psychologically perceived to be more approachable, aggressive, and open and have greater sexual desire than women [35], [36].

The distribution of parenting style shows that more than 50% of respondents receive a good parenting style because parents in Jakarta Province are generally highly educated; this phenomenon concludes that education influences parenting patterns. This condition is different from parents in Banten Province who have a low level of education [37]. A high level of education facilitates parents to obtain information about family care to maintain the health of their adolescent children [6], [38]. Factors such as family socioeconomic status, mother's employment status, parental education level, parental stress, parental problems, and parenting issues may influence parenting patterns [39].

The statistical analysis has revealed that parenting styles and HIV/AIDS prevention behavior of adolescents in senior high schools in Jakarta are not significantly correlated because parents apply different parenting styles to their teenage children. In other words, none of the parenting styles is dominant, and all parenting styles are used correctly by considering the situations and conditions of their teenage children. Three parenting styles that could educate and guide adolescents are authoritarian parenting, democratic parenting,

and permissive parenting [40]. Parenting is crucial in the social environment because it supports risky sexual behavior and promotes adolescents' reproductive health [5].

The results of this study is inconsistent with that of research showing a correlation between authoritarian, democratic, and permissive parenting styles and adolescents' sexual behavior with a $p\text{-value} < 0.05$ [41]. In contrast, an indifferent parenting style has a $p\text{-value} > 0.05$, indicating no correlation between an indifferent parenting style and adolescents' sexual behavior. In addition, coercive (harsh) parenting with a dominant maternal role (loss of father figure) and permissive parenting more strongly create the adolescent's existence and identity as transgender. Such parenting also influences sexual behaviors that put adolescents at risk of HIV/AIDS; these behaviors include oral and anal sex, as well as multiple sexual partners without using condoms [42]. Behavioral problems may be associated with authoritarian and permissive parenting styles. Research has revealed the relationship between parenting style and child behavioral problems [43]. Depression in primary caregivers, especially parents, low parental education, authoritarian parenting, and permissive parenting are significantly associated with children's behavioral problems [44]. Parenting focuses on how parents interact, discipline, communicate, and respond to children's behavior when inviting them to socialize with their group; parenting is ultimately expected to shape children's independent and healthy behavior and prevent them from juvenile delinquency [43], [44].

This study has found that most parents effectively communicate with their teenage children. This finding is supported by research showing that parent-teen communication 75% effectively promotes reproductive health and prevents premarital sexual behavior [45]. Parental communication is a guiding factor in shaping children's behavior while age-appropriate communication sets a good example and automatically shapes children's characters [46], [47]. Effective parental communication can create appropriate parenting, shape children's positive behavior in the family, especially sexual behavior and healthy reproductive health, and prevent adolescents from engaging in compulsive sexual behavior; therefore, effective parental communication should be done early as a basis for education [48]–[50].

The multivariate analysis has revealed that the quality of parental communication strongly influences adolescents' HIV/AIDS prevention behavior. This finding is consistent with [51], who asserted that positive sexual communication from parents protects adolescents from risky sexual behavior; however, high communication intensity among male adolescents leads to a higher risk of homosexual orientation. A good quality of parental communication can improve the quality of the relationship between parents and their children; such a condition will influence the quality of the children's morals and personality [52], [53]. This statement is confirmed by Joorbonyan *et al.* [54], who explain that parental knowledge, accurate information, and self-efficacy in providing sexual information are crucial components that enable adolescents to engage in HIV/AIDS prevention behaviors. Sexual communication between parents and adolescents reduces their vulnerability to negative peer influences to engage in sexual activity [11], [55]. The quality of communication about sex between parents and their adolescent children is uniquely correlated with adolescents' sexual behavior [56]. It is clear that effective communication should be initiated. In addition, mothers are considered appropriate initiators to discuss sexual topics with their adolescent children. Male and female adolescents perceive a mother as their primary source of communication to discuss sexuality [57], [58].

Adolescents believe their parents know about sexual communication but are reluctant to communicate about these issues [59]. Parental reluctance to talk about sexual issues and the factor of time may threaten the achievement of effective sexual communication between parents and their adolescent children [60]. Parents have a role to play in communicating sexual issues with their adolescent daughters. Parents with high self-esteem and low psychopathology have good communication about sexual issues with their adolescent children. Religious parents have better communication about sexual issues with their sons than secular parents do [49]. Parents and adolescents cannot insignificantly communicate sexual and reproductive health if parents do not have sufficient knowledge and understanding of sexual and reproductive health [50].

The peer group has a higher percentage of negative roles than that of positive roles. In addition, peer roles do not correlate strongly with HIV/AIDS prevention behavior. This finding contradicts studies, which have discovered that peers cause adolescent behavioral problems [61], [62]. Another study has discovered a positive relationship between aggressive behavior and peer group's pressure or interaction [63]; in other words, the higher the peer pressure or interaction, the higher the student's aggressive behavior. In contrast, another study has discovered no significant relationship between the influence of peer groups and the moral activities of adolescents at school [64]. A peer group influences adolescents when they are a group; because in this group, -they are under pressure and should conform to the group [65]. Another study has found a positive correlation between peers' willingness to receive counseling and HIV test results in an effort to prevent HIV/AIDS [66].

Nevertheless, peer health education appropriately promotes HIV/AIDS prevention behavior [67]. The findings state that the role of peers could effectively prevent HIV/AIDS, particularly in pre-exposure prophylaxis (PrEP) [68]. However, although adolescents receive peer-based health education and positive attitude education, they do not consistently engage in positive HIV/AIDS prevention behaviors; for example, they do not use condoms during sexual intercourse [69]. The role of peers as peer educators, supported by

community nurses, can prevent adolescents from engaging in unsafe sex [70]. In addition, health workers, especially nurses, have a facilitating role to actively encourage adolescents' peer groups to engage in HIV/AIDS prevention [71].

4. CONCLUSION

The quality of communication between parents and adolescents is the main factor that affects adolescents' HIV/AIDS prevention behavior. Gender also influences adolescents' HIV/AIDS prevention behavior. The researchers expect adolescents to improve their communication with their parents and, along with their peers, firmly intend to perform HIV/AIDS prevention behavior. Meanwhile, nurses in the community environment should regularly and sustainably conduct health education about HIV/AIDS prevention behavior for adolescents, their families, and their peers who function as their support systems. Adolescents, peers, families, and caregivers should be empowered to give HIV prevention responses continuously. This empowerment requires effective cross-sectoral partnerships with regional visions and national policies. Moreover, this empowerment demands participation and strong accountability from all stakeholders.

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REFERENCES





- [1] K. Gedela *et al.*, "Getting Indonesia's HIV epidemic to zero? One size does not fit all," *International Journal of STD & AIDS*, vol. 32, no. 3, pp. 290–299, 2021, doi: 10.1177/0956462420966838.
- [2] D. G. of Disease Prevention and C. G. of P2P, "HIV AIDS & PIMS for Quater III 2021," (in Indonesian), Accessed: Oct 19, 2022. [Online]. Available: https://siha.kemkes.go.id/portal/files_upload/Laporan_TW_III_2021.pdf.
- [3] J. W. Santrock, *Adolescence*, 17th ed. McGraw-Hill, 2019.
- [4] J. Wathuta, "Parents as partners in adolescent HIV prevention in Eastern and Southern Africa: an evaluation of the current United Nations' approach," *International Journal of Adolescent Medicine and Health*, vol. 30, no. 2, 2018, doi: 10.1515/ijamh-2016-0044.
- [5] B. Yimer and W. Ashebir, "Parenting perspective on the psychosocial correlates of adolescent sexual and reproductive health behavior among high school adolescents in Ethiopia," *Reproductive Health*, vol. 16, no. 1, p. 66, 2019, doi: 10.1186/s12978-019-0734-5.
- [6] C. C. Breuner *et al.*, "Sexuality education for children and adolescents," *Pediatrics*, vol. 138, no. 2, 2016, doi: 10.1542/peds.2016-1348.
- [7] G. N. Mihretie, T. M. Liyeh, Y. A. Goshu, H. G. Belay, H. A. Tasew, and A. B. Ayalew, "Young-parent communication on sexual and reproductive health issues among young female night students in Amhara region, Ethiopia: Community-based cross-sectional study," *PLOS ONE*, vol. 16, no. 6, p. e0253271, 2021, doi: 10.1371/journal.pone.0253271.
- [8] B. R. Bhatta, J. Kiriya, A. Shibanuma, and M. Jimba, "Parent-adolescent communication on sexual and reproductive health and the utilization of adolescent-friendly health services in Kailali, Nepal," *PLOS ONE*, vol. 16, no. 2, p. e0246917, 2021, doi: 10.1371/journal.pone.0246917.
- [9] I. Usonwu, R. Ahmad, and K. Curtis-Tyler, "Parent-adolescent communication on adolescent sexual and reproductive health in sub-Saharan Africa: a qualitative review and thematic synthesis," *Reproductive Health*, vol. 18, no. 1, p. 202, 2021, doi: 10.1186/s12978-021-01246-0.
- [10] I. J. Triwardhani and D. L. Chaerowati, "Interpersonal Communication among parents and children in Fishermen Village in Cirebon Indonesia," *Jurnal Komunikasi: Malaysian Journal of Communication*, vol. 35, no. 2, pp. 277–292, 2019, doi: 10.17576/JKMJC-2019-3502-17.
- [11] P. Ndugga, B. Kwagala, S. O. Wandera, P. Kisaakye, M. K. Mbonye, and F. Ngabirano, "If your mother does not teach you, the world will...": a qualitative study of parent-adolescent communication on sexual and reproductive health issues in Border districts of eastern Uganda," *BMC Public Health*, vol. 23, no. 1, p. 678, 2023, doi: 10.1186/s12889-023-15562-6.
- [12] F. Mbengo, E. Adama, A. Towell-Barnard, A. Bhana, and M. Zgambo, "Barriers and facilitators to HIV prevention interventions for reducing risky sexual behavior among youth worldwide: a systematic review," *BMC Infectious Diseases*, vol. 22, no. 1, p. 679, 2022, doi: 10.1186/s12879-022-07649-z.
- [13] B. Little, "Role of peers in personality development, The," in *Encyclopedia of Personality and Individual Differences*. Springer International Publishing, 2020, pp. 4499–4504. doi: 10.1007/978-3-319-24612-3_1931.
- [14] D. Govender, S. Naidoo, and M. Taylor, "Knowledge, attitudes and peer influences related to pregnancy, sexual and reproductive health among adolescents using maternal health services in Ugu, KwaZulu-Natal, South Africa," *BMC Public Health*, vol. 19, no. 1, p. 928, 2019, doi: 10.1186/s12889-019-7242-y.
- [15] O. A. Aguirrebeagoa *et al.*, "Risk factors associated with sexually transmitted infections and HIV among adolescents in a reference clinic in Madrid," *PLOS ONE*, vol. 15, no. 3, p. e0228998, 2020, doi: 10.1371/journal.pone.0228998.
- [16] G. L. Hor, S. A. Tan, L. L. Soh, and R. Q. Lim, "Relationship between perceived peer and adolescents' sexual behaviors: the moderating role of gender," *The Journal of Genetic Psychology*, vol. 183, no. 2, pp. 169–179, 2022, doi: 10.1080/00221325.2021.2023457.
- [17] P. Hastuti, F. Wulandari, and E. Yunitasari, "Relationship between peer conformity and sexual behavior among adolescents in Surabaya, Indonesia," *Malaysian Journal of Public Health Medicine*, vol. 22, no. 2, pp. 122–127, 2022.
- [18] M. Naserirad, F. Ayari, A. Hamdini, and K. Hadiji, "Effectiveness of a peer-led HIV/AIDS education program on HIV-related health literacy of jailed adolescents in Tunis, Tunisia," *Journal of Public Health*, vol. 27, no. 4, pp. 425–433, 2019, doi: 10.1007/s10389-018-0975-8.
- [19] I. Lestari, D. W. S. R. Wardani, J. F. Suwandi, and S. Bakri, "Social environment of friends, family, communities, and HIV/AIDS Cases," *Mutiara Medika: Jurnal Kedokteran dan Kesehatan*, vol. 22, no. 1, pp. 29–37, 2022, doi: 10.18196/mmjkk.v22i1.12505.

- [20] T. P. Ryan, "Sample size determination and power," *Sample Size Determination and Power*, pp. 1–374, 2013, doi: 10.1002/9781118439241.
- [21] T. Yamane, *Statistics. An introductory analysis. Third edition*. Harper & Row, 1973.
- [22] R. Liu, K. Xu, X. Zhang, F. Cheng, L. Gao, and J. Xu, "HIV-related knowledge and sexual behaviors among teenagers: implications for public health interventions," *Children*, vol. 10, no. 7, p. 1198, 2023, doi: 10.3390/children10071198.
- [23] D. A. Cort, K. Reynolds, and D. Chakraborty, "HIV stigma beliefs and unprotected sex among teenagers and young adults in sub-Saharan Africa: The moderating role of mass media exposure," *Social Science & Medicine*, vol. 317, p. 115615, 2023, doi: 10.1016/j.socscimed.2022.115615.
- [24] P. A. Bossonario *et al.*, "Risk factors for HIV infection among adolescents and the youth: a systematic review," *Revista Latino-Americana de Enfermagem*, vol. 30, no. spe, 2022, doi: 10.1590/1518-8345.6264.3696.
- [25] C. L. Celum *et al.*, "HIV pre-exposure prophylaxis for adolescent girls and young women in Africa: from efficacy trials to delivery," *Journal of the International AIDS Society*, vol. 22, no. S4, 2019, doi: 10.1002/jia2.25298.
- [26] C. Bommer, S. Vollmer, and N. M. Zagre, "Correlates of HIV seropositivity in young West and Central African women: A pooled analysis of 17 Demographic and Health Surveys," *Journal of Global Health*, vol. 11, p. 13005, 2021, doi: 10.7189/jogh.11.13005.
- [27] E. Ruiz-Palomino, R. Ballester-Arnal, C. Giménez-García, B. Gil-Juliá, and M. D. Gil-Lario, "Clinical profile associated with HIV risk in Spanish youth," *International Journal of Developmental and Educational Psychology. Revista INFAD de Psicología.*, vol. 2, no. 1, p. 387, 2018, doi: 10.17060/ijodaep.2018.n1.v2.1247.
- [28] S. Shamu *et al.*, "Knowledge, attitudes and practices of young adults towards HIV prevention: an analysis of baseline data from a community-based HIV prevention intervention study in two high HIV burden districts, South Africa," *BMC Public Health*, vol. 20, no. 1, p. 1249, 2020, doi: 10.1186/s12889-020-09356-3.
- [29] R. She *et al.*, "The double-edged sword effect of social networking use intensity on problematic social networking use among college students: The role of social skills and social anxiety," *Computers in Human Behavior*, vol. 140, p. 107555, 2023, doi: 10.1016/j.chb.2022.107555.
- [30] T. Keto, A. Tilahun, and A. Mamo, "Knowledge, attitude and practice towards risky sexual behaviors among secondary and preparatory students of Metu town, south western Ethiopia," *BMC Public Health*, vol. 20, no. 1, p. 1394, 2020, doi: 10.1186/s12889-020-09371-4.
- [31] M. Magadi *et al.*, "Sexual and reproductive health knowledge and behaviour of adolescent boys and girls aged 10–19 years in western Kenya: evidence from a cross-sectional pilot survey," *Journal of Biosocial Science*, vol. 54, no. 5, pp. 792–811, 2022, doi: 10.1017/S0021932021000353.
- [32] H. Kim, K.-H. Park, and S. Park, "Gender differences in sexual behaviors and their relevance to mental health among high school students with sexual experience in South Korea," *International Journal of Environmental Research and Public Health*, vol. 18, no. 21, p. 11295, 2021, doi: 10.3390/ijerph182111295.
- [33] J. Nalukwago *et al.*, "Gender norms associated with adolescent sexual behaviours in Uganda," *International Social Science Journal*, vol. 69, no. 231, pp. 35–48, 2019, doi: 10.1111/issj.12203.
- [34] K. M. Edwards *et al.*, "Evaluating the impact of a youth-led sexual violence prevention program: youth leadership retreat outcomes," *Prevention Science*, vol. 23, no. 8, pp. 1379–1393, 2022, doi: 10.1007/s1121-022-01343-x.
- [35] J. Pringle *et al.*, "The physiology of adolescent sexual behaviour: A systematic review," *Cogent Social Sciences*, vol. 3, no. 1, p. 1368858, 2017, doi: 10.1080/23311886.2017.1368858.
- [36] A. J. Lee, M. J. Sidari, S. C. Murphy, J. M. Sherlock, and B. P. Zietsch, "Sex differences in misperceptions of sexual interest can be explained by sociosexual orientation and men projecting their own interest onto women," *Psychological Science*, vol. 31, no. 2, pp. 184–192, 2020, doi: 10.1177/0956797619900315.
- [37] D. Ratnawati and N. V. Angraini, "The influence of perceptions of social support and family health tasks on hiv/aids prevention behavior in adolescents," *Jurnal Info Kesehatan*, vol. 19, no. 2, pp. 110–124, 2021, doi: 10.31965/infokes.Vol19.Iss2.518.
- [38] M. E. Powers *et al.*, "Care of adolescent parents and their children," *Pediatrics*, vol. 147, no. 5, 2021, doi: 10.1542/peds.2021-050919.
- [39] S. Kuppens and E. Ceulemans, "Parenting styles: a closer look at a well-known concept," *Journal of Child and Family Studies*, vol. 28, no. 1, pp. 168–181, 2019, doi: 10.1007/s10826-018-1242-x.
- [40] M. C. Shongwe, M.-H. Chung, L.-Y. Chien, and P.-C. Chang, "Does parenting style moderate the relationship between parent-youth sexual risk communication and premarital sexual debut among in-school youth in Eswatini?," *PLOS ONE*, vol. 16, no. 1, p. e0245590, 2021, doi: 10.1371/journal.pone.0245590.
- [41] W. Widagdo, "The relationship between parenting and sexual behavior in adolescents," *International Journal of Multidisciplinary Research and Analysis*, vol. 05, no. 10, 2022, doi: 10.47191/ijmra/v5-i10-37.
- [42] W. S. Hertinjung, L. Nurfirdausa, and S. N. Aulia, "The role of parenting patterns with sexual deviations: literature review," in Indonesian "Peran Pola Asuh Orang Tua Dengan Penyimpangan Seksual: Literatur Review," *EPIGRAM (e-journal)*, vol. 19, no. 1, pp. 98–105, 2022, doi: 10.32722/epi.v19i1.4448.
- [43] M. C. K. Mak, L. Yin, M. Li, R. Y. Cheung, and P.-T. Oon, "The relation between parenting stress and child behavior problems: negative parenting styles as mediator," *Journal of Child and Family Studies*, vol. 29, no. 11, pp. 2993–3003, 2020, doi: 10.1007/s10826-020-01785-3.
- [44] W. Jantarabenjakul *et al.*, "Behavioral problems in perinatally HIV-infected young children with early antiretroviral therapy and HIV-exposed uninfected young children: prevalence and associated factors," *AIDS Care*, vol. 32, no. 4, pp. 429–437, 2020, doi: 10.1080/09540121.2019.1680790.
- [45] T. K. Aliyu and J. O. Aransiola, "Parent-adolescent communication about reproductive health issues in Nigeria," *SAGE Open*, vol. 13, no. 2, p. 215824402311666, 2023, doi: 10.1177/21582440231166607.
- [46] J. O. Sabarua and I. Mornene, "Family Communication in Shaping Children's Character," (in Indonesian), *International Journal of Elementary Education*, vol. 4, no. 1, p. 83, 2020, doi: 10.23887/ijee.v4i1.24322.
- [47] M. Mekie, D. Addisu, A. Melkie, and W. Taklual, "Parent-adolescent communication on sexual and reproductive health issues and its associated factors in Ethiopia: a systematic review and meta-analysis," *Italian Journal of Pediatrics*, vol. 46, no. 1, p. 162, 2020, doi: 10.1186/s13052-020-00921-5.
- [48] G. Ö. Uzun, "The storm period in psychological and educational development: an overview of adolescence," *Revista on line de Política e Gestão Educacional*, 2021, doi: 10.22633/rpge.v25iesp.6.16171.
- [49] Y. Efrati and M. Gola, "Adolescents' compulsive sexual behavior: The role of parental competence, parents' psychopathology, and quality of parent-child communication about sex," *Journal of Behavioral Addictions*, vol. 8, no. 3, pp. 420–431, 2019, doi: 10.1556/2006.8.2019.33.
- [50] L. Ewnetu, A. Mekonnen, Y. Alemu, and W. Shume, "Parent-adolescent communication about Sexual and Reproductive Health Issues and Associated Factors among Mothers in Wogdie District, North Ethiopia," *Research Square*, pp. 1–22, 2021.




- [51] L. Widman, H. Javidi, A. J. Maheux, R. Evans, J. Nesi, and S. Choukas-Bradley, "Sexual Communication in the Digital Age: Adolescent Sexual Communication with Parents and Friends About Sexting, Pornography, and Starting Relationships Online," *Sexuality & Culture*, vol. 25, no. 6, pp. 2092–2109, 2021, doi: 10.1007/s12119-021-09866-1.
- [52] D. Krupić, S. Ručević, and S. Vučković, "From parental personality over parental styles to children psychopathic tendencies," *Current Psychology*, vol. 42, no. 19, pp. 16001–16010, 2023, doi: 10.1007/s12144-020-00676-6.
- [53] N. Hidayah, G. D. Lestari, and I. K. A. J. Artha, "Parent and Child Communication Patterns in Early Childhood Emotional Social Development," in *Proceedings of the International Joint Conference on Arts and Humanities 2021 (IJCAH 2021)*, 2021, pp. 1130–1135. doi: 10.2991/assehr.k.211223.197.
- [54] H. Joorbonyan, M. Ghaffari, and S. Rakhshanderou, "Peer-led theoretically Desinged HIV/AIDS prevention intervention among students: a case of health belief model," *BMC Public Health*, vol. 22, no. 1, p. 8, 2022, doi: 10.1186/s12889-021-12445-6.
- [55] M. Yalew *et al.*, "Parent-young communication on sexual and reproductive health issues and its association with sex and perceptions of young people in Ethiopia, 2020: a systematic review and meta-analysis," *Archives of Public Health*, vol. 78, no. 1, p. 133, 2020, doi: 10.1186/s13690-020-00515-x.
- [56] K. J. Isaksen, P. Musonda, and I. F. Sandøy, "Parent-child communication about sexual issues in Zambia: a cross sectional study of adolescent girls and their parents," *BMC Public Health*, vol. 20, no. 1, p. 1120, 2020, doi: 10.1186/s12889-020-09218-y.
- [57] D. Wangdi and S. Tshomo, "Adolescents' perception of parental communication about sexuality," *Rabsel- CERD Education Journal*, vol. 18, no. 1, pp. 43–59, 2017.
- [58] O. Olusanya and A. Jegede, "Existing practices of parent-child communication on sex-related matters among households in Ondo State, Nigeria," *European Scientific Journal, ESJ*, vol. 18, no. 22, p. 159, 2022, doi: 10.19044/esj.2022.v18n22p159.
- [59] T. M. Scull, C. V. Malik, E. M. Keefe, and A. Schoemann, "Evaluating the short-term impact of media aware parent, a web-based program for parents with the goal of adolescent sexual health promotion," *Journal of Youth and Adolescence*, vol. 48, no. 9, pp. 1686–1706, 2019, doi: 10.1007/s10964-019-01077-0.
- [60] A. M. Ariyo, O. M. Sotayo, T. K. Olurin, and T. Eni-Olorunda, "Sexual communication between parents and adolescents: perception of secondary school students in Abeokuta, Ogun State, Nigeria," *Mediterranean Journal of Social Sciences*, vol. 11, no. 4, p. 112, 2020, doi: 10.36941/mjss-2020-0046.
- [61] S. Horanicova *et al.*, "Teacher and classmate support may keep adolescents satisfied with school and education. Does gender matter?," *International Journal of Public Health*, vol. 65, no. 8, pp. 1423–1429, 2020, doi: 10.1007/s00038-020-01477-1.
- [62] D. DeLay, W. J. Burk, and B. Laursen, "Assessing peer influence and susceptibility to peer influence using individual and dyadic moderators in a social network context: The case of adolescent alcohol misuse," *International Journal of Behavioral Development*, vol. 46, no. 3, pp. 208–221, 2022, doi: 10.1177/01650254221084102.
- [63] W. O. Adeniyi and A. T. Jinadu, "Influence of peer pressure on gang behaviour among secondary school students in osun State, Nigeria," *European Journal of Education and Pedagogy*, vol. 2, no. 3, pp. 171–177, 2021, doi: 10.24018/ejedu.2021.2.3.131.
- [64] R. Busching and B. Krahé, "With a Little help from their peers: the impact of classmates on adolescents' development of prosocial behavior," *Journal of Youth and Adolescence*, vol. 49, no. 9, pp. 1849–1863, 2020, doi: 10.1007/s10964-020-01260-8.
- [65] O. M. Keletsoitse, "Examining the impact of peer groups in the unfolding of bullying in a private boarding school in Botswana," *International Journal of Education and Research*, vol. 9, no. 6, pp. 51–60, 2021.
- [66] A. Tokar, J. E. W. Broerse, J. Blanchard, and M. Roura, "HIV testing and counseling among female sex workers: a systematic literature review," *AIDS and Behavior*, vol. 22, no. 8, pp. 2435–2457, 2018, doi: 10.1007/s10461-018-2043-3.
- [67] J. He, Y. Wang, Z. Du, J. Liao, N. He, and Y. Hao, "Peer education for HIV prevention among high-risk groups: a systematic review and meta-analysis," *BMC Infectious Diseases*, vol. 20, no. 1, p. 338, 2020, doi: 10.1186/s12879-020-05003-9.
- [68] A. Zhao *et al.*, "Pharmacy-based interventions to increase use of HIV pre-exposure prophylaxis in the United States: A scoping review," *AIDS and Behavior*, vol. 26, no. 5, pp. 1377–1392, 2022, doi: 10.1007/s10461-021-03494-4.
- [69] J. S. Kikula, "The Influence of peer based HIV/AIDS education on students sexual behaviour: A case of Mzumbe University, Tanzania," *Huria: Journal of the Open University of Tanzania*, vol. 25, no. 2, pp. 64–80, 2018.
- [70] G. Prado *et al.*, "Rationale and design for ehealth familias unidas primary care: a drug use, sexual risk behavior, and STI preventive intervention for hispanic youth in pediatric primary care clinics," *Contemporary Clinical Trials*, vol. 76, no. 12, pp. 64–71, 2019, doi: 10.1016/j.cct.2018.11.005.
- [71] C. Giménez-García, R. Ballester-Arnal, M. D. Gil-Llario, and P. Salmerón-Sánchez, "Peer-led or expert-led intervention in hiv prevention efficacy? a randomized control trial among spanish young people to evaluate their role," *Health Promotion Practice*, vol. 19, no. 2, pp. 277–286, 2018, doi: 10.1177/1524839917733966.

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