

The Relationship Between Information Sources And The Role Of Parents With Adolescents' Knowledge Of Hiv And Aids at State Senior High School 15 Semarang

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ABSTRACT

HIV/AIDS remains a global public health problem with a significant impact on adolescents, particularly due to low reproductive health literacy. Adolescents' knowledge of HIV/AIDS is influenced by the information sources they access and the role of parents in providing health education. This study aims to determine the relationship between information sources and parental roles with adolescents' knowledge of HIV/AIDS at SMA Negeri 15 Semarang. The study used a quantitative cross-sectional design with a population of all eleventh-grade students (357 students) and a sample of 79 respondents selected using a simple random sampling technique. Data were collected using a questionnaire and analyzed using Fisher's Exact Test at a significance level of 0.05. The results showed that most respondents had good information sources (69 respondents; 87.3%), high parental roles (38 respondents; 48.1%), and good knowledge (45 respondents; 57.0%). Bivariate analysis showed a significant relationship between information sources and adolescents' knowledge ($p = 0.001$) and between parental roles and adolescents' knowledge ($p = 0.001$). It can be concluded that sources of information and the role of parents are significantly related to the level of knowledge of adolescents about HIV/AIDS, so that strengthening access to credible information and parental involvement needs to be continuously encouraged as part of efforts to prevent HIV/AIDS in adolescents.

Keywords: *HIV/AIDS; adolescent knowledge; parental role; information sources*

INTRODUCTION

Human Immunodeficiency Virus (HIV) attacks CD4 cells and damages the immune system, so that without proper treatment it can develop into Acquired Immunodeficiency Syndrome (AIDS), a condition where the immune system is severely compromised and vulnerable to various opportunistic diseases (WHO, 2024). The World Health Organization recorded nearly 40 million people living with HIV globally at the end of 2024, and this epidemic is

still ongoing in almost all regions of the world so that ongoing education remains a priority for prevention (WHO, 2024).

In Indonesia, HIV/AIDS remains a major public health concern. Data from the HIV/AIDS Information System indicates that of the 6.1 million people tested for HIV in 2023, 57,299 tested positive, with an alarming proportion of cases in the 15–24 age group (Ministry of Health, 2022). The largest cumulative distribution of HIV cases in Indonesia from 2005–2024 occurred in Papua, East Java, West Java, Jakarta, and Central Java, with an estimated 63,707 cases in 2024 (Ministry of Health, 2022), underscoring the importance of youth-based prevention programs.

Semarang City is one of the cities that has implemented various HIV/AIDS prevention initiatives, but implementation has not been evenly distributed across all community health centers (Puskesmas) areas, resulting in suboptimal prevention outcomes (Dzakia et al., 2023). Tembalang District is recorded as the area with the highest number of HIV/AIDS cases in Semarang City, and SMA Negeri 15 Semarang is located in that area, making the adolescent population at this school a group that requires special attention.

Adolescents' knowledge of HIV/AIDS is influenced by exposure to various sources of information, such as social media, schools, health workers, and peers, whose accuracy is not always guaranteed, as well as by the role of the family as the primary socialization agent (Sari et al., 2023). However, parental communication about sexuality and HIV/AIDS remains low due to perceived taboos, making adolescents more vulnerable to exposure to information from unreliable sources and at risk of engaging in risky behavior (CW Agustina et al., 2024). Previous studies have shown a strong correlation between knowledge, information sources, and HIV/AIDS prevention practices in adolescents (Yunus, 2017; D. Agustina et al., 2025).

A preliminary study conducted by researchers on 15 eleventh-grade students at SMA Negeri 15 Semarang showed that most students had general knowledge of HIV/AIDS, but their understanding of how it is transmitted varied. Ten students obtained information primarily from social media, which is often mixed with hoaxes; six students obtained information from school through biology lessons or community health center counseling; and only five students had discussed the topic with their parents, while the other ten students had never

discussed it because it was considered taboo. This condition indicates a knowledge gap that needs further study in relation to information sources and the role of parents.

Unlike previous studies that tended to examine the role of parents or information sources separately on HIV/AIDS prevention behavior (Widhawati et al., 2024; Zari & Soedirham, 2022), this study integrates both variables simultaneously in relation to adolescents' knowledge levels, thus hopefully providing a more comprehensive picture of family factors and information factors that shape adolescents' knowledge about HIV/AIDS. The purpose of this study was to analyze the relationship between information sources and parental roles with adolescents' knowledge about HIV/AIDS at SMA Negeri 15 Semarang.

RESEARCH METHODS

This study is a quantitative study with a cross-sectional design, which allows the measurement of relationships between variables to be carried out at a single point in time without long-term follow-up (Sugiyono, 2019). The target population of the study was all adolescents aged 15–19 years at SMA Negeri 15 Semarang, with an accessible population of 357 grade XI students. The sample size was determined using the Slovin formula with a 10% error rate, resulting in a sample of 79 respondents selected using a simple random sampling technique from three classes (XI.3, XI.7, and XI.8). Inclusion criteria included adolescents aged 15–19 years who were willing to be respondents and were able to communicate well, while exclusion criteria included respondents with communication/cognitive disorders or those who did not complete the questionnaire completely. Data collection was conducted on April 15–16, 2026, at SMA Negeri 15 Semarang.

Data were collected using three closed-ended questionnaires. The information source questionnaire was adapted from the Indonesian Demographic and Health Survey (SDKI, 2012) and has been used in previous research (Wahyuni & Ronoatmodjo, 2017), consisting of 11 items with “yes/no” answer options, categorized as good (accessing ≥ 3 types of information sources) and poor (< 3 types). The parental role questionnaire was a modification of Widya's (2018) instrument with a four-point Likert scale (strongly disagree–strongly agree) that measures aspects of parental closeness, concern, and role model, and was categorized as low, medium, and high. The adolescent knowledge questionnaire was

adapted from an instrument that has been tested for validity and reliability (Ekartika & Candra, 2018) with 24 valid items ($r_{\text{count}} > r_{\text{table}}$ 0.361 at a 5% significance level), with the categories good (76–100% correct answers), sufficient (56–75%), and poor (< 55%).

Univariate analysis was performed to describe the frequency distribution and percentage of each variable. Bivariate analysis was performed using the Chi-Square test to test the relationship between categorical variables; if more than 20% of cells have an expected count of less than 5, then the alternative Fisher's Exact Test was used (Astuti, 2024). All data processing was performed using SPSS version 26 at a significance level (α) of 0.05, with the H_a criterion being accepted if the p -value < 0.05 . This study has received ethical approval from the Research/Health Bioethics Commission of the Faculty of Medicine, Sultan Agung Islamic University, Semarang (Number 88/II/2026/Bioethics Commission) and pays attention to the principles of respecting human dignity, doing good, not harming, and justice for all respondents.

RESULTS

The characteristics of the research variables are presented through univariate analysis in Tables 1, 2, and 3. Furthermore, the relationships between variables are presented through bivariate analysis in Tables 4 and 5.

Table 1. Frequency Distribution of Information Sources for Adolescents about HIV/AIDS

Category	f	%
Good	69	87.3
Not enough	10	12.7
Total	79	100

Most respondents (73 people; 92.4%) obtained HIV/AIDS information via the internet/social media, followed by counseling services/VCT/NGOs (70 people; 88.6%) and schools/formal education (68 people; 86.1%), while radio was the least used source (19 people; 24.1%).

Table 2. Frequency Distribution of the Role of Parents of Teenagers

Category	f	%
Low	6	7.6
Currently	35	44.3
Tall	38	48.1
Total	79	100

Table 3. Frequency Distribution of Adolescents' Knowledge Levels about HIV/AIDS

Category	f	%
Good	45	57.0
Enough	20	25.3
Not enough	14	17.7
Total	79	100

Table 4. Relationship between Information Sources and Adolescents' Knowledge about HIV/AIDS

Resources	Good n (%)	Enough n (%)	Less n (%)	Total n (%)	p
Good	39 (49.4)	18 (22.8)	12 (15.2)	69 (87.3)	
Not enough	6 (7.6)	2 (2.5)	2 (2.5)	10 (12.7)	0.001*
Total	45 (57.0)	20 (25.3)	14 (17.7)	79 (100)	

**Fisher's Exact Test*

The results of the analysis show a p value = 0.001 ($p < 0.05$), which means H_a is accepted and H_o is rejected, so there is a significant relationship between information sources and adolescent knowledge about HIV/AIDS at SMA Negeri 15 Semarang.

Table 5. Relationship between Parental Role and Adolescent Knowledge about HIV/AIDS

The Role of Parents	Good n (%)	Enough n (%)	Less n (%)	Total n (%)	p
Low	3 (3.8)	2 (2.5)	1 (1.3)	6 (7.6)	
Currently	20 (25.3)	9 (11.4)	6 (7.6)	35 (44.3)	0.001*
Tall	22 (27.8)	9 (11.4)	7 (8.9)	38 (48.1)	
Total	45 (57.0)	20 (25.3)	14 (17.7)	79 (100)	

**Fisher's Exact Test*

The results of the analysis show a p value = 0.001 ($p < 0.05$), which means H_a is accepted and H_o is rejected, so there is a significant relationship between the role of parents and adolescent knowledge about HIV/AIDS at SMA Negeri 15 Semarang.

DISCUSSION

The majority of respondents (87.3%) had good sources of information, indicating that most adolescents had gained extensive access to information about HIV/AIDS through the internet, social media, schools, and health workers. This finding aligns with the view that the more and more diverse sources of information a person accesses, the greater the chance of developing sound knowledge (Notoatmodjo, 2014). The dominance of the internet/social media as the primary source of information indicates a shift in adolescents' health information seeking patterns toward digital media, in line with the ease of access via mobile phones. However, 12.7% of respondents still had insufficient sources of information, likely influenced by differences in information seeking interests, digital literacy, and social support (Notoatmodjo, 2014).

The majority of parents' parental roles were in the high category (48.1%), reflecting their active involvement in communication, supervision, and guidance with adolescents. Parents serve as the primary educators in the family, shaping adolescents' understanding of health issues, including HIV/AIDS (Santrock, 2019). However, some respondents still had

moderate to low parental roles, which may be influenced by parents' busy schedules and limited knowledge and communication between parents and adolescents (Hurlock, 2011).

The level of knowledge of HIV/AIDS among adolescents was mostly in the good category (57.0%). This can be explained by widespread access to digital information and the existence of reproductive health education programs in schools that support students' understanding of the definition, transmission, symptoms, and prevention of HIV/AIDS (Notoatmodjo, 2018). However, some respondents still had misconceptions, such as regarding the need for continuous antiretroviral therapy for HIV sufferers, indicating the need to strengthen education on aspects of HIV/AIDS treatment and management, not just transmission and basic prevention.

Fisher's exact test results showed a significant relationship between information sources and adolescents' knowledge of HIV/AIDS ($p = 0.001$). Adolescents with more diverse access to information, such as from schools, the internet, social media, and health professionals, tended to have a more comprehensive understanding of HIV/AIDS, consistent with previous research that also reported a significant relationship between information support and adolescents' knowledge of HIV/AIDS prevention (Nuswantoro et al., 2023). However, some respondents with less information sources still demonstrated relatively good knowledge, indicating that access to information is not the sole factor in shaping knowledge, but rather one of many interacting factors (Nuswantoro et al., 2023).

The analysis also showed a significant relationship between parental involvement and adolescents' knowledge of HIV/AIDS ($p = 0.001$). Theoretically, strong parental involvement in communication and supervision will support the development of better adolescent knowledge, as parents serve as guides and primary sources of communication within the family (Santrock, 2019). Interestingly, some respondents with low parental involvement still had good knowledge, possibly due to the availability of alternative sources of information outside the family, such as teachers, health workers, digital media, and school counseling programs. This finding confirms that schools and information media can be compensatory factors when parental involvement in reproductive health education is still limited.

Overall, these findings reinforce the importance of collaboration between families, schools, and health professionals in building comprehensive knowledge about HIV/AIDS among

adolescents, given that both factors—information sources and parental involvement—contribute significantly, but not independently, to shaping adolescents' understanding. This study has limitations, including potential bias due to respondents sitting close together while completing the questionnaire and the possibility of some students being less focused while completing the questionnaire.

CONCLUSION

Most adolescents at SMA Negeri 15 Semarang have good sources of information (87.3%), high parental involvement (48.1%), and good knowledge about HIV/AIDS (57.0%). There is a significant relationship between sources of information and adolescents' knowledge about HIV/AIDS ($p = 0.001$) and between parental involvement and adolescents' knowledge about HIV/AIDS ($p = 0.001$). Schools are advised to strengthen health education programs through curriculum and regular counseling, parents are advised to be more active in building open communication about reproductive health, adolescents are advised to improve their digital literacy in sorting health information, and health workers are advised to develop interactive digital media-based health promotion. Future research is recommended to add other variables such as peer influence or parental education level, and use a longitudinal design to uncover causal relationships in more depth.

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