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ORIGINAL RESEARCH

Social support and HIV prevention behavior among adolescents in Indonesia

Apoyo social y comportamientos de prevención del VIH entre adolescentes en Indonesia

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Abstract

Adolescents are susceptible to HIV transmission. The incidence of HIV among teenagers and young adults in Indonesia is on the rise, underscoring the importance of understanding the factors that influence HIV prevention behavior in adolescents, with social support being a significant factor to consider. **Objective.** This study aimed to investigate the correlation between social support and HIV prevention behavior among adolescents. **Methods.** This study was a quantitative correlational analytic study using a cross-sectional design. A total of 610 students from vocational high schools in Bandung, Indonesia, participated in this study. Data were collected using the family and friend versions of the Perceived Social Support Scale (PSSfa and PSSfr) and the Sexual Behavioral Abstinence and Avoidance of High-Risk Situations Questionnaire (SBAHAQ). Descriptive data were analyzed using descriptive statistics. Relationships between variables were analyzed using Spearman's correlation test, followed by simple linear regression analysis. **Results.** Social support and HIV prevention behavior scores were positively and weakly associated ($r = 0.288$, $p < 0.0001$). The mean value of social support from family was 11.87 (SD = 3.83), and social support from peers was 11.64 (SD = 4.22). The mean values of HIV prevention behavior were 14.51 (SD = 3.14) for the self-efficacy domain, 11.69 (SD = 3.04) for behavioral intention, and 22.40 (SD = 4.69; range 0–30) for perceived benefit. **Conclusion.** Healthcare professionals should develop evidence-based educational interventions specifically tailored to the needs of adolescents and incorporating life skills education. This approach aims to enhance HIV prevention behaviors among adolescents using a peer-support framework.
Keywords: Adolescents; HIV prevention behavior; Social support.

Resumen

Los adolescentes son susceptibles a la transmisión del VIH. La incidencia del VIH entre adolescentes y adultos jóvenes en Indonesia está en aumento, lo que subraya la importancia de comprender los factores que influyen en las conductas de prevención del VIH en adolescentes, siendo el apoyo social un factor significativo a considerar. **Objetivo.** Este estudio tuvo como objetivo investigar la correlación entre el apoyo social y las conductas de prevención del VIH en adolescentes. **Métodos.** Esta investigación fue un estudio analítico correlacional cuantitativo con un diseño transversal. Participaron 610 estudiantes de escuelas secundarias vocacionales de Bandung, Indonesia. Los datos se recopilaron utilizando las versiones para familiares y amigos de la Escala de Apoyo Social Percibido (PSSfa y PSSfr) y el Cuestionario de Abstinencia y Evitación de Situaciones de Alto Riesgo en el Comportamiento Sexual (SBAHAQ). Los datos descriptivos se analizaron mediante estadística descriptiva. Las relaciones entre las variables se analizaron mediante la prueba de correlación de Spearman, seguida de un análisis de regresión lineal simple. **Resultados.** Las puntuaciones de apoyo social y comportamiento de prevención del VIH se asociaron positiva y débilmente ($r = 0,288$, $p < 0,0001$). El valor medio del apoyo social de la familia fue 11,87 (DE = 3,83); el apoyo social de los pares fue 11,64 (DE = 4,22). El valor medio del comportamiento de prevención del VIH para el dominio de autoeficacia fue 14,51 (DE = 3,14); la intención de comportamiento fue 11,69 (DE = 3,04); el beneficio percibido fue 22,40 (DE = 4,69; rango 0-30). **Conclusión.** Los profesionales de la salud deben desarrollar intervenciones educativas basadas en la evidencia específicamente adaptadas a las necesidades de los adolescentes, incorporando educación en habilidades para la vida. Este enfoque tiene como objetivo mejorar los comportamientos de prevención del VIH entre los adolescentes, utilizando un marco de apoyo entre pares.

Palabras clave: Adolescentes; Conducta de prevención del VIH; Apoyo social.

Introduction

As adolescents transition into adulthood, their emotional and social landscapes undergo significant changes. One factor influencing these changes is the need for sexual fulfillment.[1] The rising number of HIV cases among teenagers poses a significant concern, especially given that adolescents represent the upcoming generation of the nation's youth. UNESCO highlights prevention as the primary strategy in combating HIV/AIDS, making adolescent HIV prevention a crucial area of focus, particularly in light of the growing number of adolescent behaviors that increase susceptibility to HIV infection.[2] Contemporary adolescents often exhibit deviant behaviors related to sexuality and substance abuse, which can significantly heighten their vulnerability to HIV/AIDS.[3]

Data from the United Nations Population Fund (UNFPA) show that adolescents are the age group most vulnerable to HIV/AIDS. Most new infections occur between the ages of 15 and 24 years, with more than 67 adolescents becoming infected with HIV every minute in sub-Saharan Africa [4, 5]. In 2021, adolescents aged 13–19 years and young adults aged 20–24 years constituted 19% of the 36,189 new HIV diagnoses in the United States and its dependent areas [6, 7]. In Indonesia, HIV infections have been increasing annually by 13.1% among adolescents aged 15–19 years and by 11.8% among young people aged 20–24 years [8, 9]. These alarming trends emphasize the critical importance of improving education, increasing awareness, and strengthening social support systems to promote effective HIV prevention behaviors among adolescents and young adults, thereby reducing the impact of HIV/AIDS in these high-risk groups.

Adolescents frequently receive misleading information about sex from peers, the media, or unreliable sources that contradict established moral and ethical principles [10]. Consequently, this misinformation can lead to sexual problems among teenagers, including an increased risk of HIV/AIDS transmission. An essential component of HIV prevention therefore focuses on adolescents and young adults as a specific target group [8].

In Indonesia, every effort to provide assistance must consider the religious beliefs, cultural norms, and traditional practices of the local population. Indonesian culture remains largely closed to discussions of sensitive issues; everything related to sex is still considered taboo, including talking about, providing information on, and educating people about sex [11,12]. The increasing number of HIV/AIDS cases in Indonesia is partly caused by this lack of information, which affects HIV prevention behavior [13]. In some cases, although cognitive development during adolescence may be adequate, environmental factors—especially peer influence—strongly shape behavioral patterns.

Indonesian adolescents have a low level of knowledge about HIV/AIDS (48.90%) and a poor attitude toward HIV/AIDS prevention (32.87%) [14]. This also contributes to low levels of prevention behavior. Research has shown that 24.03% of adolescents have poor peer relationships, which can influence their HIV prevention behavior [15]. Adolescents whose peers do not support HIV prevention behaviors are 3.68 times more likely to engage in risky behaviors [15]. Peers are an important source of social support for adolescents. Peer social support is defined as the assistance, attention, and comfort obtained from peers [16].

Social support is an important sociocultural factor in HIV prevention strategies because it can influence individual behaviors and community norms regarding HIV testing, condom use, and other preventive measures (17,18). Numerous studies have demonstrated the positive impact of social support from family, peers, and community networks in promoting HIV-related preventive behaviors among adolescents and young adults. Research has shown that adolescents who perceive greater social support from their peers are more likely to engage in safer sexual practices, undergo HIV testing, and access HIV treatment and care services (19). A study of adolescents in Iran found that social support, along with family functioning and self-efficacy, could predict engagement in risky behaviors related to AIDS [20]. Understanding the role of social support in shaping HIV prevention behaviors is therefore critical for designing and implementing comprehensive, evidence-based interventions, particularly for vulnerable adolescent populations [19].

The impact of social support on HIV-related behaviors varies across populations and may be influenced by the specific sources and functions of that support [21]. However, there has been relatively little research on the relationship between social support and HIV prevention behavior among adolescents, particularly in Indonesia. Adolescents are especially vulnerable to HIV transmission because of limited access to disease prevention information and education. Previous research has shown that social support from family, friends, and the community can significantly influence adolescent health behaviors. Nevertheless, further in-depth study is needed to determine the extent to which social support affects HIV prevention behavior among adolescents. Understanding this relationship will support the development of more effective programs to increase adolescent awareness and preventive behaviors related to HIV/AIDS, thereby helping to reduce transmission rates. Accordingly, this study aims to address this knowledge gap by investigating the relationship between social support and HIV prevention behaviors among adolescents in Indonesia.

Material and Methods

Study design and sample

This study employed a quantitative design with a cross-sectional approach. The association between adolescent HIV prevention behaviors and social support was examined using a descriptive correlational design. The sample consisted of 610 vocational high school students from Bandung, Indonesia. The sample size was calculated using G-Power Software Version 3.1.9.4, with the exact test assuming $\alpha = 0.05$ [22]. The minimum required sample size was 555, with an additional 10% added to account for attrition. Simple random sampling was employed using a lottery method based on class lists.

Instrument

Social Support

Social support was measured using the Perceived Social Support Scale (PSS), developed by Procidano and Heller in 1983. This instrument comprises two subscales: PSS-Fa, which measures perceived support from family, and PSS-Fr, which assesses perceived support from friends. The scale is designed to capture individuals' perceptions of the extent to which their social networks meet their needs for emotional support, information, and feedback. Respondents rate each item using a three-point scale (yes, no, unsure), and the total score ranges from 0 to 20, with higher scores indicating stronger perceived social support [23].

The PSS-Fr and PSS-Fa subscales have demonstrated high internal consistency, with Cronbach's alpha values ranging from 0.88 to 0.90 in previous validation studies. The instruments also showed strong test–retest reliability over a 2- to 4-week interval, with correlation coefficients of 0.83 for the friend support subscale and 0.90 for the family support subscale.[23]

HIV Prevention Behavior

The Sexual Behavioral Abstinence and Avoidance of High-Risk Situations Questionnaire (SBAHAQ) is a self-report instrument developed to evaluate behaviors related to sexual abstinence and the avoidance of risky situations, particularly in the context of HIV/AIDS prevention. It comprises 14 items, including 4 items assessing self-efficacy, 6 items evaluating perceived benefits, and 4 items measuring behavioral intentions. Responses are rated on a 6-point Likert scale ranging from 0 to 5, yielding a total possible score between 0 and 70. Higher scores indicate stronger self-efficacy, more favorable perceived benefits, and greater behavioral intention regarding sexual abstinence and risk avoidance. The instrument's content validity was supported by a content validity ratio (CVR) of 0.85, indicating a high degree of item relevance and appropriateness for measuring the intended construct24. The reliability of the SBAHAQ was assessed using Cronbach's alpha coefficients, yielding values of 0.85 for the self-efficacy subscale, 0.87 for perceived benefits, and 0.77 for behavioral intentions. The overall internal consistency of the instrument was strong, with a total Cronbach's alpha of 0.8324.

Data Analysis

To examine the relationship between social support and HIV prevention behaviors among adolescents, both descriptive and correlational analyses were performed. Because the data for both variables did not meet the assumption of

normality, Spearman's rank-order correlation was used. In addition, simple linear regression analysis was conducted to explore the predictive relationship between the variables. All statistical procedures were performed using SPSS software, version 22, under a licensed agreement.

Ethical Consideration

Ethical approval for this research was granted by the Institutional Review Board of Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat (Approval Number: III/154/KEPK/STIKep/PPNI/Jabar/III/2020).

Results

Characteristics of Respondents

Table 1 summarizes the distribution of respondents and scores for social support and HIV prevention behavior. The majority of respondents were boys (82.3%), aged 14–16 years (83%), living with both parents (91.5%), and more than half had occasionally skipped school (55.6%). The mean value of social support from family was 11.87 (SD = 3.83; range 0–20), while the mean value of social support from peers was 11.64 (SD = 4.22; range 0–20). The mean value of HIV prevention behavior for the self-efficacy domain was 14.51 (SD = 3.14; range 0–20), for the behavioral intention domain was 11.69 (SD = 3.04; range 0–20), and for the perceived benefit domain was 22.40 (SD = 4.69; range 0–30).

Across all domains, scores for social support and HIV prevention behavior were higher among girls than boys. Scores were moderate in both social support domains and in the behavioral intention domain of HIV prevention behavior, and were high in the self-efficacy and perceived benefit domains. Respondents aged 17–19 years exhibited higher scores across all domains except the perceived benefit domain compared with those aged 14–16 years.

Table 1. Distribution of respondents and score of social support and HIV prevention behavior (n=610)

Characteristic	n(%)	Social Support		HIV Prevention Behavior		
		Family	Friends	Self Efficacy	Behavioral Intention	Perceived Benefit
		Mean (SD) (min-max : 0-20)		Mean (SD) (min-max : 0-20; 0-20; 0-30)		
Gender						
Boy	502 (82.3)	11.82(3.94)	11.60(4.09)	14.38(3.26)	11.59(3.15)	22.47(4.82)
Girl	108 (17.7)	12.07(3.27)	11.84(4.53)	15.11(2.46)	12.28(2.40)	23.12(3.98)
Respondent Age						
14-16	506 (83)	11.76(3.82)	11.33(4.31)	14.49(3.06)	11.43(2.96)	22.44(4.63)
17-19	104 (17)	12.67(3.83)	13.15(3.80)	14.61(3.51)	13.00(3.09)	22.22(5.00)
Living Status						
With Both Parents	558 (91.5)	11.98(3.83)	11.65(4.25)	14.53(3.12)	11.70(3.07)	22.43(4.67)
With Single Parents	44 (7.2)	11.11(3.42)	12.11(3.42)	14.63(2.98)	11.90(2.19)	22.65(4.36)
Living with Others	8 (1.3)	8.00(4.17)	8.5(3.42)	12.50(4.98)	10.00(4.27)	19.00(7.92)
Habits of Skipping Classes						
Regular Attendance	271 (44.4)	11.89(3.90)	11.76(4.19)	14.61(3.16)	11.73(2.94)	22.88(4.29)
Prone to Truancy	339 (55.6)	11.85(3.78)	11.55(4.25)	14.43(3.12)	11.66(3.12)	22.02(4.96)
Overall Mean(SD)		11.87(3.83)	11.64(4.22)	14.51(3.14)	11.69(3.04)	22.40(4.69)

Table 2. Association of Social Support and HIV Prevention Behaviour (n=610)

		HIV Prevention Behavior			
		B (SE)	R	R^2	*p*-value
Social Support		42.21 (1.00) 2.92(0.40)	0.288	.083	.000
Family		.147(.102)			.152
Friends		.422(.093)			.000

Respondents living with others had the lowest scores across all domains compared with those living with both parents or with a single parent. Class attendance also showed differences across all domains, with higher scores observed among those who attended class regularly than among those who frequently skipped classes. As in other comparisons, scores were moderate in the social support and behavioral intention domains and high in the self-efficacy and perceived benefit domains.

The Relationship of Social Support to HIV Prevention Behavior in Adolescents

Table 2 presents the results of the correlation analysis for continuous variables. A significant relationship was found between social support and HIV prevention behavior ($p < .0001$). The significance value for social support from friends (.000) was lower than that for family (.152), indicating a stronger association for peer support. The correlation coefficient was .288, indicating a weak relationship between the two variables. The results also demonstrate a positive direction of association: higher social support is associated with higher HIV prevention behavior. Social support accounted for 8.3% of the variance in HIV prevention behavior. The constant term for HIV prevention behavior was 42.21, with a regression coefficient of .292, indicating that for every one-unit increase in social support, HIV prevention behavior increased by .292.

Discussion

This study was the first to investigate the relationship between social support and HIV prevention behavior among Indonesian teenagers and was conducted in West Java Province. Our findings revealed a significant positive correlation between these factors: teenagers who receive greater social support are more likely to engage in comprehensive HIV prevention initiatives. Additionally, previous studies have demonstrated a favorable relationship between increased perceived social support and various health behaviors, such as discussing one's HIV status, participating in voluntary counseling and testing, and adopting behavioral HIV risk-reduction strategies [25]. Social support promotes health-protective behaviors through several mechanisms, including the provision of information and practical assistance, modeling positive behaviors, offering encouragement, and helping individuals achieve health-related goals [26]. Affirmative social support can also strengthen personal values by reinforcing the importance of engaging in proactive, health-conscious behaviors in the future.[27]

Our results indicate that social support was higher among girls than boys and was positively correlated with HIV prevention behavior. Female adolescents received moderate levels of social support from both family and peers. They tend to have larger social support networks and perceive support from family and friends as more positive than boys do. Previous research has shown that individuals with stronger social support, in both quantity and quality, experience a lower risk of various health problems [28], suggesting that strong social support increases awareness of risky behaviors that can lead to health problems. Regarding HIV prevention behavior, the highest scores among female adolescents were observed in the self-efficacy and perceived benefit components. Self-efficacy reflects confidence in controlling motivation, behavior, and the social environment [29]. In the context of HIV prevention, girls demonstrated high self-efficacy, including confidence in abstaining from sex before marriage, avoiding risky behaviors even when opportunities arise, avoiding risky situations, and refusing risky

suggestions from peers or others [24]. Perceived benefit refers to an individual's belief in the effectiveness of recommended HIV prevention measures [30]. Based on our analysis, girls believe that sexual abstinence protects them from HIV/AIDS and other sexually transmitted infections.

The majority of respondents live with their parents, a living arrangement that plays an important role in adolescent development. This study indicates that adolescents who do not live with their parents have lower levels of social support and engage less in HIV prevention behaviors. During adolescence, psychological needs evolve, shifting from reliance on parents to a greater need for peer connection. The results of this study suggest that peer social support has a greater influence on HIV prevention behavior than familial support. This finding implies that the onset of adolescence marks a turning point at which peer support becomes more prominent and may surpass family support as adolescents become more independent and peer-oriented [31]. Peer social support therefore emerges as a crucial determinant of HIV prevention behaviors and the uptake of HIV interventions, particularly during the adolescent developmental period [32]. Accordingly, leveraging peer social support should be an important consideration in the design of effective HIV prevention programs.

This study of social support among adolescents is consistent with Social Cognitive Theory (SCT) developed by Albert Bandura [33]. SCT, as applied to HIV prevention, emphasizes the dynamic and reciprocal interaction between personal factors (such as HIV knowledge, substance use, and abstinence self-efficacy), behavioral factors (such as HIV testing), and environmental factors (such as social support) [34, 35]. SCT recognizes the pivotal role of social support in shaping self-efficacy and motivation to engage in protective behaviors. Self-efficacy refers to an individual's belief in their ability to perform behaviors that lead to desired outcomes. According to this theory, social support can strengthen adolescents' self-efficacy to engage in HIV prevention behaviors, such as consistent condom use and negotiating safer sexual practices. By enhancing self-efficacy, social support serves as a critical catalyst for adolescents to adopt and maintain protective health behaviors in the context of HIV prevention.[33]

HIV prevention behavior among adolescents in this study was moderate in the behavioral intention domain and high in the self-efficacy and perceived benefit domains. Self-efficacy refers to confidence in one's ability to perform a behavior, perceived benefit refers to beliefs about the advantages of performing a behavior, and behavioral intention refers to the intention or desire to perform a behavior [24]. Adolescents' self-efficacy is essential for the formation of positive behavioral intentions and, ultimately, the adoption of healthy behaviors. The Theory of Planned Behavior (TPB) emphasizes the role of self-efficacy in predicting behavioral intention and actual behavior in adolescents [36]. TPB posits that behavioral intentions are motivational factors that influence behavior: the stronger an individual's intention to engage in a behavior, the more likely it is to be enacted. This intention is influenced by several predictors, including attitudes toward the behavior, which are shaped by self-efficacy, perceived benefit, and subjective norms.[36]

Behavioral change is also shaped by social norms, which play a significant role in influencing individual behavior. In Indonesia, persistent stigma and discrimination against people living with HIV/AIDS can hinder adolescents' access to HIV prevention information and services [37]. Adolescents may fear social rejection if they disclose their sexual behavior or seek sexual health services [38]. In addition, gender norms that place women in subordinate positions may limit female adolescents' ability to negotiate condom use or refuse risky sexual encounters, thereby increasing their vulnerability to HIV transmission [37]. The cultural tendency in Indonesia to avoid discussing sexuality further restricts adolescents' access to adequate HIV prevention information and education. As a result, adolescents may feel uncomfortable discussing sexual and reproductive health issues with parents or teachers [38]. Comprehensive community-based efforts involving the government, health sector, educational institutions, and society are therefore required to address harmful social and cultural norms and to expand adolescents' access to

friendly, non-discriminatory HIV prevention information and services.

Interventions aimed at strengthening adolescents' self-efficacy and perceived benefits are essential and can effectively promote behavioral intention and the adoption of healthy behaviors. Peer social support should be incorporated into strategies to improve HIV prevention behavior among adolescents. Nurses play a key role in enhancing social support and promoting effective HIV prevention behaviors. They should assess available sources of support, the types of support required (emotional, informational, and instrumental), and the barriers adolescents face. Behavior-change efforts should address environmental, personal, and behavioral factors in accordance with Social Cognitive Theory (SCT), while also incorporating self-efficacy, subjective norms, and perceived behavioral control as described in the Theory of Planned Behavior (TPB). Community nurses can implement peer-support programs, utilize digital technologies [39, 40], promote cross-sector collaboration, and provide life-skills education to strengthen HIV prevention behaviors among adolescents.

Further research by community nurses should explore additional factors influencing HIV prevention behavior beyond social support. In this study, social support accounted for approximately 8% of the variance in HIV prevention behavior, although the overall association was weak. More in-depth analyses are therefore needed, incorporating additional SCT and TPB constructs. Moreover, the relationship between social support and HIV prevention behaviors may differ across social contexts and types of social networks. This association is not always straightforward, particularly among high-risk groups such as adolescents, people who use drugs, and men who have sex with men (MSM) [21, 25]. Context-specific measurement of social support appears to be critical in determining its influence on HIV prevention. Future research should identify more complex determinants of HIV prevention behavior and develop targeted interventions to strengthen protective behaviors among adolescents.

Conclusion

The current study has shown that social support is statistically related to HIV prevention behavior among adolescents. Social support from peers is more prevalent than support from parents. While the self-efficacy and perceived benefit domains of HIV prevention behavior show strong values, there is a need to improve the behavioral intention domain. Healthcare professionals should develop evidence-based educational interventions tailored to the specific needs of adolescents, incorporating life skills education to enhance HIV prevention behavior. An intervention approach that leverages peer social support to effectively promote preventive behaviors among adolescents is highly recommended.

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