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Psychoeducation for HIV/AIDS and Sexually Transmitted Infection Prevention Among Adolescents: A School-Based Community Service Program

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Abstract

Adolescence is a developmental stage characterized by heightened vulnerability to risk-taking behaviors, including unprotected sexual activity, which increases exposure to Human Immunodeficiency Virus (HIV), Acquired Immunodeficiency Syndrome (AIDS), and Sexually Transmitted Infections (STIs). Inadequate health literacy, persistent myths, and social stigma compound this risk, particularly in school-aged populations. This study reports a community service psychoeducation program implemented at SMA Negeri 2 Bukittinggi, West Sumatra, Indonesia, targeting 80 adolescent students (grades X and XI). A pre-test/post-test quasi-experimental design was employed to evaluate knowledge gains. Results showed that prior to the intervention, only 40% of participants demonstrated adequate knowledge of HIV/AIDS and STIs. Following the interactive psychoeducation sessions—which incorporated multimedia presentations, group discussion, role-play, and participatory quiz activities—72.5% of participants achieved good knowledge scores, representing a 32.5 percentage point improvement. Qualitative findings indicated greater openness to discussing sexual health, reduced stigmatizing attitudes toward people living with HIV (PLHIV), and heightened intention to utilize voluntary counselling and testing (VCT) services. These outcomes affirm the effectiveness of school-based, interactive psychoeducation as a preventive public health strategy for HIV/AIDS and STI transmission among Indonesian adolescents. The program model is presented as a replicable framework for broader adolescent reproductive health promotion.

Keywords: psychoeducation; sexually transmitted infections; adolescents; school-based intervention

1. Introduction

Adolescence constitutes a critical transitional period in human development, marked by rapid physiological changes, evolving psychosocial identity, heightened curiosity, and an emergent sexual awareness (World Health Organization, 2021). While these developmental processes are normative, they simultaneously render adolescents vulnerable to risk-taking behaviors, particularly in the domain of sexual health. The convergence of incomplete cognitive and emotional maturation, peer pressure, and limited access to accurate health information creates conditions that substantially elevate the risk of acquiring sexually transmitted infections (STIs), including Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) (UNAIDS, 2022).

The global burden of HIV/AIDS and STIs among young people remains alarming. According to the World Health Organization, adolescents and young adults aged 15–24 years account for a disproportionate share of new HIV infections, with the majority occurring in low- and middle-income countries (World Health Organization, 2021). In Indonesia, epidemiological surveillance data from the Ministry of Health indicate a sustained increase in HIV/AIDS cases within the adolescent and young adult population, with a substantial proportion of infections attributable to unprotected sexual contact, inadequate knowledge of transmission routes, and the normalization of risk behaviors (Kementerian Kesehatan Republik Indonesia, 2022). The psychosocial consequences of infection—

including social stigma, discrimination, depression, and social exclusion—further underscore the urgency of preventive action (Goffman, 1963).

A critical barrier to effective prevention is the persistence of myths, misinformation, and cultural taboos surrounding sexual health discourse among Indonesian youth. Many adolescents hold inaccurate beliefs about HIV/AIDS transmission, falsely attributing infection exclusively to marginalized populations, or underestimating personal susceptibility (Notoatmodjo, 2012). These misconceptions are reinforced by the limited integration of evidence-based sexual health education in formal school curricula and the social discomfort surrounding open discussion of reproductive and sexual health topics (Depkes RI, 2018).

Psychoeducation—defined as the systematic provision of structured psychological and health information aimed at enhancing knowledge, altering attitudes, and promoting adaptive behaviors—represents a theoretically grounded and empirically supported approach to adolescent HIV/AIDS prevention (Lukens & McFarlane, 2004). Unlike conventional didactic health instruction, psychoeducation integrates affective, cognitive, and behavioral dimensions of learning, addressing not only factual knowledge but also emotional responses, social skill development, and decision-making competencies (Colom & Vieta, 2006). When implemented in school settings, psychoeducation benefits from institutional reach, peer social dynamics, and the availability of trained facilitators, making it a particularly viable modality for population-level preventive intervention (Kirby et al., 2007).

The present report documents a community service psychoeducation program delivered at SMA Negeri 2 Bukittinggi, West Sumatra, Indonesia, targeting adolescent students in grades X and XI. The program was designed and implemented by a team from Universitas Prima Nusantara Bukittinggi in February 2023. This article presents the program rationale, theoretical framework, methodology, outcomes, and implications for adolescent reproductive health policy and practice in Indonesia.

2. Literature Review

2.1. Adolescent Vulnerability to HIV/AIDS and STIs

The vulnerability of adolescents to HIV/AIDS and STIs is a product of biological, psychological, and social factors interacting across developmental time (Steinberg, 2010). Biologically, young people who are sexually active face heightened infection risk due to physiological characteristics of the adolescent reproductive system, including increased cervical ectopy in females, which facilitates mucosal transmission of pathogens including HIV and gonorrhea (Centers for Disease Control and Prevention, 2021). Psychologically, the adolescent period is characterized by heightened sensation-seeking, reduced risk perception, susceptibility to social influence, and incomplete prefrontal cortical development, all of which are associated with impulsive decision-making and reduced capacity for consistent safe-sex practice (Casey et al., 2008).

Socially, adolescents in Indonesia face multiple structural risk factors, including gender-based power asymmetries in sexual relationships, limited access to confidential and youth-friendly health services, and cultural norms that discourage open discussion of sexual health with parents or teachers (BKKBN, 2020). The BKKBN's national adolescent reproductive health guidelines acknowledge these barriers and recommend participatory, youth-sensitive educational approaches as a foundation for prevention programming (BKKBN, 2023).

2.2. HIV/AIDS and STI Epidemiology in Indonesia

Indonesia's HIV epidemic is classified as a concentrated epidemic, with high prevalence among key populations including men who have sex with men (MSM), people who inject drugs (PWID), and sex workers (Kementerian Kesehatan Republik Indonesia, 2022). However, heterosexual transmission now accounts for an increasing proportion of new infections, and the epidemic is gradually expanding into the general population, particularly young people. The Ministry of Health's health profile data from 2021 recorded cumulative HIV cases exceeding

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500,000, with young adults comprising a substantial proportion of new diagnoses (Kementerian Kesehatan Republik Indonesia, 2022).

STI burden among Indonesian adolescents is similarly substantial. Common STIs including chlamydia, gonorrhea, syphilis, and genital herpes are associated with increased HIV susceptibility through facilitation of mucosal entry, and their prevalence is elevated among sexually active young people with low condom use rates (Kementerian Kesehatan Republik Indonesia, 2021). The WHO's Global Health Sector Strategy on STIs identifies adolescents as a priority population for targeted prevention, emphasizing the need for integrated sexual and reproductive health services (World Health Organization, 2020).

2.3. Psychoeducation as a Preventive Framework

Psychoeducation is grounded in social cognitive theory (Bandura, 1986), health belief models (Janz & Becker, 1984), and the transtheoretical model of behavior change (Prochaska et al., 1992), all of which posit that knowledge, attitudes, self-efficacy, and perceived social norms are determinants of health behavior. By addressing each of these constructs, psychoeducation creates a multi-pathway influence on HIV/AIDS risk behavior.

Empirical evidence for psychoeducation-based HIV prevention among adolescents is substantial. Systematic reviews and meta-analyses have documented significant effects on HIV-related knowledge, risk perception, condom use intention, and reduction of stigmatizing attitudes [21, 22]. School-based programs, in particular, have shown robust effects due to their ability to reach large numbers of young people within a structured, educator-facilitated context. The inclusion of interactive methodologies—such as role-play, peer discussion, and simulation—has been identified as a key active ingredient in effective programs, outperforming passive information delivery alone (Guse et al., 2012).

In the Indonesian context, psychoeducation targeting adolescent sexual health has been shown to improve knowledge scores, reduce misconceptions about HIV transmission, and increase willingness to seek voluntary counselling and testing (VCT) services (Yulianti & Anasari, 2020). However, program availability remains uneven, and coverage of school-age populations in West Sumatra specifically remains limited, highlighting the need for locally contextualized program models such as the one described in this report.

2.4. Anti-Stigma Education and PLHIV Inclusion

Stigma and discrimination against people living with HIV (PLHIV) represent significant barriers to HIV testing, treatment engagement, and disclosure, and are themselves perpetuated by misinformation and fear (Parker & Aggleton, 2003). Educational programs that explicitly address the mechanisms and consequences of HIV stigma, while providing accurate information about transmission risks, have demonstrated efficacy in reducing stigmatizing attitudes among school-aged youth (Herek et al., 2002). Incorporating anti-stigma content within psychoeducation aligns with global commitments to a rights-based approach to HIV response and is essential for creating inclusive school environments supportive of PLHIV (UNAIDS, 2014).

3. Methodology

3.1. Program Setting and Participants

The psychoeducation program was implemented at SMA Negeri 2 Bukittinggi, a public senior secondary school located in Bukittinggi, West Sumatra, Indonesia, on Monday, 27 February 2023. Participants were 80 students enrolled in grades X and XI, selected through purposive sampling based on class availability and school scheduling. The age range of participants was approximately 15 to 17 years, consistent with the target demographic of mid-adolescence. The program received institutional approval from Universitas Prima Nusantara Bukittinggi and

formal permission from the school principal, coordinated through the University's Research and Community Service Institute (LP2M).

3.2. Program Design

The program employed a pre-test/post-test quasi-experimental design without a control group, combined with qualitative evaluation through facilitator observation and participant reflection. This design was selected to assess the magnitude of knowledge change attributable to the intervention while also capturing qualitative shifts in attitudes and behavioral intentions. The program team comprised one licensed psychologist (Dahlia Susanti, M.Psi., Psikolog) as lead facilitator, supported by two trained student co-facilitators (Budhi Khalis and Febri) and an external health resource person from the local community health center (Puskesmas).

3.3. Intervention Components

The psychoeducation program was structured across a single intensive session lasting approximately six hours (10.00–15.30 WIB), divided into the following components:

(1) Pre-test administration: A standardized knowledge questionnaire comprising items on HIV/AIDS and STI transmission routes, prevention methods, myths versus facts, and stigma-related attitudes was administered to all participants prior to the intervention.

(2) Psychoeducation lecture with multimedia support: A structured presentation covering (a) the biological nature of HIV/AIDS and common STIs; (b) modes of transmission and routes of infection; (c) evidence-based prevention strategies, including consistent condom use, abstinence and delay of sexual debut, and avoidance of needle sharing; (d) correction of prevalent myths and misconceptions; (e) the rights and social inclusion of PLHIV; and (f) the role of adolescents as agents of prevention within their communities. Audiovisual materials including short documentary clips and infographic presentations were integrated to enhance engagement.

(3) Interactive group discussion and role-play: Participants were divided into small groups to discuss case scenarios involving sexual health decision-making. Role-play exercises simulated situations requiring assertive refusal of peer pressure, negotiation of condom use, and appropriate responses to STI disclosure. These activities were facilitated using Socratic questioning and reflective prompting to deepen critical engagement with content.

(4) Myth-busting quiz: A participatory kahoot-style quiz activity addressed widespread misconceptions about HIV/AIDS and STIs, providing corrective information in an engaging format.

(5) Post-test and reflective commitment: Following the intervention, participants completed the same knowledge questionnaire used in the pre-test. Additionally, participants were invited to make brief written commitments articulating one personal behavior change intention related to the session content.

3.4. Data Analysis

Quantitative data from pre- and post-test questionnaires were analyzed using descriptive statistics. Knowledge scores were categorized as 'good' (≥70% correct), 'fair' (50–69%), or 'poor' (<50%). The proportion of participants in each category was compared across pre- and post-test timepoints to evaluate knowledge gains. Qualitative data from facilitator observations and participant reflections were analyzed using thematic analysis.

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4. Results and Discussion

4.1. Participant Knowledge at Baseline

Pre-test results revealed substantial deficits in HIV/AIDS and STI-related knowledge among the 80 adolescent participants. Prior to the intervention, only 32 students (40%) demonstrated good knowledge levels, while 48 students (60%) scored in the fair or poor categories. This baseline pattern is consistent with the broader epidemiological literature on adolescent HIV knowledge in Indonesia. Kementerian Kesehatan RI's surveys consistently document low HIV knowledge levels among secondary school students nationally, with misconceptions regarding transmission through casual contact, sharing utensils, and mosquito bites being particularly prevalent (Kementerian Kesehatan Republik Indonesia, 2022).

These findings underscore the inadequacy of current reproductive health education provision in the school context and validate the need for targeted psychoeducation programs. Notably, the significant proportion of students with poor baseline knowledge was not attributable to absence of school health education in general, but rather to the limited depth, interactivity, and coverage of sexual health topics within existing curricula, consistent with observations by Depkes RI (Utami & Sari, 2019) and BKKBN (BKKBN, 2023).

4.2. *Knowledge Gains Following Psychoeducation*

Post-test assessments following the psychoeducation session demonstrated significant knowledge gains across the participant cohort. The proportion of students achieving good knowledge scores increased from 40% (n=32) at baseline to 72.5% (n=58) post-intervention, representing a 32.5 percentage point improvement. Among the remaining participants, 27.5% (n=22) achieved fair knowledge scores, indicating partial but not complete mastery of session content. No participants remained in the poor knowledge category post-intervention.

These gains are clinically and educationally meaningful and compare favorably with outcomes reported in comparable school-based psychoeducation programs in Southeast Asian settings [21, 23]. The magnitude of knowledge improvement is attributable to the multi-modal, participatory design of the intervention, which integrated cognitive (didactic content), affective (group discussion, personal reflection), and behavioral (role-play, skill practice) learning modalities. Research consistently demonstrates that multi-component interventions produce superior knowledge and attitude outcomes compared to information-only approaches, and the present findings corroborate this evidence base (Johnson et al., 2009).

4.3. Attitude and Behavioral Intention Outcomes

Beyond knowledge gains, qualitative evaluation documented meaningful shifts in participants' attitudes toward sexual health topics and PLHIV. Prior to the intervention, many participants described the subject of HIV/AIDS and STIs as uncomfortable, embarrassing, or reserved for specific populations. Following the program, participants expressed greater comfort engaging with sexual health information, a willingness to seek further knowledge through formal channels, and recognition of their personal relevance to the topics discussed.

A notable attitudinal shift was observed regarding stigma toward PLHIV. Several participants explicitly reflected on previously held discriminatory attitudes and articulated revised perspectives emphasizing the shared humanity, civil rights, and social support needs of PLHIV. These shifts are consistent with theoretical models positing that direct engagement with accurate information, combined with perspective-taking exercises, reduces affective stigma components [25, 26].

Behavioral intention data from written commitments indicated that the most commonly articulated intentions included: committing to seek further information about sexual health; committing to discuss sexual health topics with trusted adults; and committing to support PLHIV in their social environments without discrimination. These intentions, while not equivalent to behavioral outcomes, represent important proximal determinants of health behavior change (Prochaska et al., 1992).

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4.4. VCT and Health Service Utilization

One of the program's secondary outcomes was to increase awareness of and intention to utilize voluntary counselling and testing (VCT) services and other youth-friendly reproductive health resources. Facilitator observation and participant feedback indicated that many students were unaware of VCT services prior to the program. Following the session, participants demonstrated improved awareness of VCT availability and expressed greater willingness to utilize these services in the event of perceived risk. This finding is significant because VCT uptake among adolescents in Indonesia remains low, with stigma and unfamiliarity with services cited as primary barriers (Depkes RI, 2018).

4.5. Programmatic Implications

The program's outcomes carry several important implications for adolescent reproductive health programming. First, the demonstrated effectiveness of a single-session intensive psychoeducation program suggests that even time-limited, resource-constrained interventions can produce meaningful health knowledge improvements when designed with methodological rigor and participant engagement. This supports the scalability of school-based psychoeducation as a cost-effective preventive strategy.

Second, the significant baseline knowledge deficits observed highlight the inadequacy of relying on standard school health curricula to address adolescent HIV/AIDS and STI knowledge needs. Supplementary psychoeducation programs, delivered by trained psychologists and health professionals, are needed to bridge this educational gap. Integration of psychoeducation within national school health programs (UKS) and the adolescent reproductive health service program (PKPR) provides a policy framework for sustainable implementation (Utami & Sari, 2019).

Third, the cross-sectoral collaboration between the university team, school administration, and community health center exemplified in this program represents a productive model for maximizing resource utilization and ensuring content credibility. Such partnerships should be formalized through memoranda of understanding between higher education institutions and local health and education authorities.

5. Conclusion

This community service psychoeducation program successfully improved HIV/AIDS and STI knowledge among adolescent students at SMA Negeri 2 Bukittinggi, West Sumatra, Indonesia. The proportion of participants with good knowledge levels increased from 40% to 72.5% following a single structured psychoeducation session employing interactive, multimedia, and participatory methodologies. Qualitative findings demonstrated additional gains in anti-stigma attitudes, openness to sexual health discussion, and willingness to utilize VCT and reproductive health services.

The program affirms the effectiveness and feasibility of school-based psychoeducation as a preventive public health modality for HIV/AIDS and STI transmission among Indonesian adolescents. The participatory, multi-modal design—integrating didactic instruction, audiovisual media, group discussion, and role-play—is identified as a key driver of program effectiveness and should be adopted as a standard approach in future school-based health promotion initiatives.

Future programs should incorporate longitudinal follow-up designs to assess the durability of knowledge gains and the translation of behavioral intentions into actual protective behaviors. Expansion to additional schools, integration within formal health and psychology curricula, and the development of train-the-trainer models for peer

educators are recommended as strategies for sustainable, large-scale impact on adolescent reproductive health outcomes in Indonesia.

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