



ARTICLE RESEARCH

URL artikel: <http://jurnal.fkmumi.ac.id/index.php/woh/article/view/woh8206>**Early Identification of HIV Infection Among Adolescents in Primary Care Center:
A Case Study****^CLinlin Lindayani¹, Putri Hilda Octaviani², Apriyadno Jose Al Freadman Koa³, Dian Anggraini⁴**¹ Department of nursing, Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat, Bandung, Indonesia² Nurse profession program, Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat, Bandung, Indonesia³ Department of Nursing, National Cheng Kung University, TaiwanCorresponding Author Email (^C): linlinlindayani@gmail.comlinlinlindayani@gmail.com¹, putrihildaocaviani@gmail.com², apriyadno@gmail.com³, dians_23@yahoo.com⁴

ABSTRACT

Adolescents are at high risk for HIV transmission due to exploratory behaviors and risky activities. Early identification of HIV infection is crucial to prevent transmission, as it interrupts the transmission chain through awareness of one's HIV status. This study aimed to explore the implementation of adolescent-centered HIV early detection services in primary care. A qualitative case study design was employed, involving in-depth interviews and document analysis at a public health center in Central Bandung. A purposively selected nurse, with 15 years of experience managing the HIV program, served as the key informant. Data were collected through semi-structured interviews and analyzed using content analysis techniques to identify key themes, categories, and codes. Six themes emerged: (1) VCT service procedures; (2) community health initiatives; (3) collaboration with external institutions; (4) adolescent engagement strategies; (5) barriers to adolescent testing; and (6) factors facilitating testing. Although the VCT protocol was comprehensive and included pre- and post-counseling, fear of a positive diagnosis. While the VCT model at the primary care level is aligned with national HIV prevention strategies, its effectiveness for adolescents is limited by low participation and social resistance. Integrating case-based learning in nursing education, enhancing peer-based outreach, and strengthening adolescent-friendly health services are recommended to improve early HIV detection and care linkage for youth.

Keywords: Early detection; HIV; adolescents; case study

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INTRODUCTION

Adolescents are a high-risk group for HIV transmission due to their identity search and risky behavior, such as unsafe sexual relations.¹ In 2021, 410,000 adolescents aged 10-24 were infected globally, with Indonesia expecting 741 infected teenagers in 2022.² HIV transmission in adolescents is primarily through risky sexual behavior and illegal drugs, highlighting the need for government attention and increased awareness.³ Moreover, the Indonesian government is implementing a strategy to combat HIV by prioritizing early detection and expanding HIV Counselling and Testing services. This includes making testing mandatory in all health facilities and collaborating with communities and the public.

Within this demographic, early initiation of sexual activity, inconsistent use of protection, and intravenous drug use are leading modes of transmission⁴. In response to the ongoing epidemic, the Indonesian government has aligned its national health goals with the UNAIDS 90-90-90 targets—designed to ensure that 90% of those living with HIV are aware of their status, 90% of diagnosed individuals receive antiretroviral treatment, and 90% of those on therapy achieve viral suppression⁵. To meet these targets, HIV testing has been integrated into routine services in primary healthcare settings, supported by broader initiatives such as HIV Counseling and Testing (HCT) programs and community-based education campaigns⁶.

However, despite these national efforts, HIV testing rates among adolescents remain alarmingly low. Several persistent barriers continue to hinder testing uptake, including limited access to adolescent-friendly services during the COVID-19 pandemic, deep-rooted societal stigma, low levels of health literacy, and restrictive consent regulations requiring parental approval⁷⁻⁹. The fear of being ostracized by family or peers, or having one's privacy compromised, often prevents adolescents from coming forward for testing and care¹⁰.

Voluntary Counselling and Testing (VCT) has become a central approach to identifying HIV infection early and linking individuals to care. VCT offers confidential, client-centered services that respect informed consent and promote risk awareness¹¹. It plays a key role in encouraging early diagnosis, facilitating the timely initiation of antiretroviral therapy (ART), and reducing further transmission through targeted education. Healthcare professionals, especially nurses and counselors, serve as essential touchpoints in this process by conducting risk assessments and supporting adolescents emotionally throughout testing^{12, 13}. Nonetheless, existing research highlights that Indonesian youth continue to face significant obstacles in accessing these services, particularly due to gaps in service readiness and a lack of outreach designed for younger clients¹⁴.

Although past studies have explored what adolescents know and believe about HIV prevention¹⁵, many have overlooked critical service-level and policy-related barriers—such as inadequate provider training, unclear confidentiality safeguards, and cultural resistance to youth-specific testing models¹⁶. Few studies have evaluated how VCT is implemented for adolescents in real-world clinical or community settings, especially in lower-resource or culturally sensitive environments^{17, 18}. This study addresses these

limitations by examining the broader context in which VCT services for adolescents are managed in Indonesia. It explores how healthcare workers, families, and communities influence adolescent access to early HIV testing. The research focuses on the operational, legal, and social complexities shaping VCT utilization among youth. Unlike earlier studies that emphasize general prevention strategies, this work investigates how VCT systems function in practice, highlighting the challenges and opportunities for creating more inclusive, confidential, and acceptable services. Through this lens, the study offers practical recommendations for advancing adolescent-centered HIV strategies in line with Indonesia's national HIV response goals¹⁹.

METHODS

The study uses a case study design, involving interviews and work document analysis. The study utilized purposive sampling to select participants, including health workers at public health center, who were required to undergo VCT training under the program manager's supervision, and those unwilling to participate in interviews were excluded.

The study adhered to ethical guidelines, ensuring participants were informed about the study's objectives and confidentiality preservation. Researchers received informed consent before discussions and interviews, and participants had the right to terminate or decline participation. Confidentiality was maintained regarding sensitive information, and the interviewee's voice was removed post-interview. A researcher conducted a study involving health workers, including nurses, program administrators, and those trained in Voluntary Counselling and Testing. A single participant was found and engaged in communication. Interviews were conducted after informed consent and observations were conducted at the public health center. The study used semi-structured interviews, recording on a mobile device, lasting 40-60 minutes. The researcher assured respondents of confidentiality and promised expungement of results after the research.

Interview guideline: Opening Question

1. What is your experience as the person responsible/implementing the VCT service?
2. Can you tell me about the process of early detection of HIV in teenagers?
3. Is there VCT screening for teenagers? If so, what is the process?

Interview guideline: Core Question

1. What is the community health center program designed to manage early detection of HIV in adolescents?
2. What is the process of public health center to find out that the teenager is suspected of HIV?
3. How the involvement of the family?
4. What are the difficulties and obstacles faced when carrying out early detection HIV testing in adolescents?
5. What are the supporting factors for teenagers to want to take an HIV test?

The study utilized qualitative research methods, specifically content analysis tools. The process involves formulating research questions, selecting relevant media or data sources, using sampling

techniques, establishing operational definitions, creating categories, collecting and coding documents, summarizing content, and developing scales and items based on criteria. The data is then interpreted, drawing on relevant theories and hypotheses to make sense of the findings. This qualitative research method ensures a comprehensive understanding of the research problem.

RESULTS

Case setting

The public health center is located in the Central Bandung area and covers eight sub-districts. The district covers 526.84 Ha/m2 with a flat land surface, with a population of 116,103 people and a density of 327 people/ha. The public health center has been offering Voluntary Counselling and Testing (VCT) services since 2018, with 640 individuals, including pregnant women, undergoing HIV testing from January to May 2023. A total of 14 individuals tested positive, demonstrating the center's commitment to comprehensive health services. The research investigates a 53-year-old female nurse overseeing the HIV testing program.

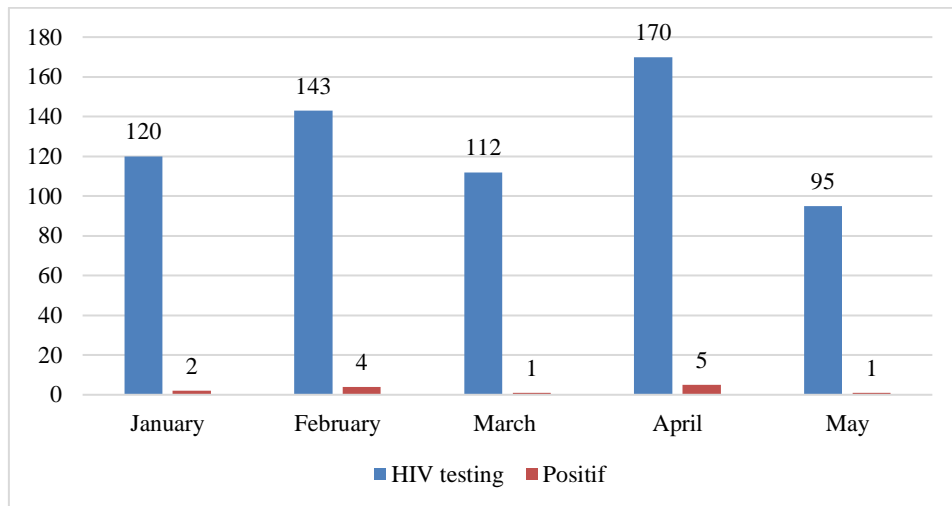


Figure 1. Frequency distribution of cumulative HIV Testing

Case descriptions

The study focuses on a 53-year-old female nurse at the public health centre, who has 15 years of experience in managing the HIV testing program. The interview results revealed 25 coding, 16 categories, and 6 themes, including VCT service procedures, community health initiatives, collaboration, engaging adolescents, obstacles to HIV testing, and factors facilitating HIV testing among adolescents.

Table 1. Content Analysis results

Coding	Category	Theme
1. Suppress the high rate of HIV, find out whether the person is exposed to HIV or not, and know the HIV status.	1. The purpose of the VCT examination	VCT service procedures
2. Pre-VCT counseling	2. Stages of VCT examination	

Coding	Category	Theme
3. Explanation of HIV		
4. HIV testing using the rapid test method		
5. Post-testing counseling		
6. Youth Posyandu	1. Youth posyandu	community health
7. Youth posyandu activities	activities	initiatives
8. Schedule of VCT at youth posyandu	2. Areas supported by youth posyandu	
9. Youth Posyandu target areas		
10. Referral to non-governmental organizations (NGOs)	1. Referrals from various institutions	VCT Service collaboration
11. Referrals from prisons		
12. PITC		
13. Persuasive counseling, conducting health checks.	1. Youth approach program	engaging adolescents
14. Creative outreach	2. Motivation to want to do the test	
15. Communicate what they need		
16. Motivation for HIV testing, treatment, and the dangers of being exposed to HIV.		
17. Conduct counseling before the test examination		
18. Lack of youth participation in HIV testing	1. Adolescents' refusal to test for HIV	obstacles to HIV testing
20. Refusing the VCT test	2. Fear of test results	
21. Fear of test results		
22. Adolescents' knowledge about HIV	1. Adolescents' knowledge about HIV	factors facilitating HIV testing among adolescents
23. Self-awareness of the importance of HIV testing	2. Self-awareness of the importance of HIV testing	
24. The role of peers	3. The role of peers	
25. Facilities available at PKM	4. Facilities are available at PKM	

Theme 1: Voluntary Counselling and Testing (VCT) Service Procedures

Category 1: Phases of Voluntary Counselling and Testing (VCT) Assessment

The text outlines the procedural aspects of voluntary counseling and testing (VCT) services, which include pre-testing counseling, fast HIV testing, and post-testing counseling, highlighting the multiple requisite processes involved.

“..The individual visited the SOMEAH organization and experienced a delay in receiving service. They underwent pre-test counseling, establishing trust through effective communication and comprehensive information about HIV. The results were accessed through a laboratory, and if poor results were found, a

three-month monitoring period was recommended. If excellent results were found, the individual should consult the Personal Development Plan (PDP) promptly".

"The HIV test method is characterized by its rapidity."

Category 2: Objectives of Voluntary Counselling and Testing (VCT) Examination

The informant emphasized the VCT examination's objective to reduce HIV prevalence and facilitate early identification for timely diagnosis as a preventive measure.

"The implementation of HIV testing has a crucial role in mitigating the prevalence of HIV infection by facilitating the identification of individuals who have been exposed to the virus, hence enabling the determination of their HIV status."

"One of the activities we engage in is VCT counseling, followed by early detection as a component of the counseling process."

Theme 2: Community Health Initiatives

Informants' accounts reveal a second thematic category focusing on public health initiatives, including health counseling and HIV testing, similar to the youth Integrated Healthcare Center.

Category 1: Activities of Youth in Integrated Healthcare Center

The informant narrates the Activities of Youth in the Integrated Healthcare Center.

"For instance, counseling is prioritized as the initial step. Following the completion of counseling, we conduct Voluntary Counselling and Testing (VCT) counseling without delay".

Category 2: Youth Integrated Healthcare Center Development Zones

The UPT Ibrahim Adjie Health Centre houses multiple posyandu facilities, each catering to specific target areas, including scheduled HIV testing provision.

"For instance, a youth Posyandu is organized every month, albeit not consistently every month. VCT is conducted biannually or annually at the posyandu facility. Additionally, each sub-district is equipped with multiple youth posyandu facilities."

Theme 3: VCT Service Collaboration

The Ibrahim Adjie Community Health Centre service collaborates with various institutions, including NGOs, correctional facilities, and other health centers, according to informants.

"Today, we anticipate a substantial level of support, including assistance from peers, particularly those affiliated with MSM (Men Having Sex with Men) and NGOs (Non-Governmental Organisations) that specialize in the oversight of MSM-related matters. We express gratitude for the continuity of the program, as it has facilitated the provision of HIV care over an extended period".

...Subsequently, in the event of referrals originating from non-governmental organizations (NGOs), correctional facilities, or other health centers lacking HIV services..."

"...For instance, in the scenario where an individual seeks treatment at a general clinic and exhibits symptoms such as persistent diarrhea, along with risk factors such as engaging in men who have sex with men (MSM) relationships or being an injecting drug user... Alternatively, may he be engaged in the occupation of a sex worker?"

Theme 4: Engaging Adolescents

The fourth theme pertains to using a strategic strategy in working with teenagers. Initially, employ a persuasive approach to engage individuals in counseling, prompting them to express their specific counseling needs. This strategy aims to foster enthusiasm and active participation in the counseling process. According to the individuals providing information, as indicated by the following informants:

Category 1: Program for Engaging Youth

When engaging with adolescents, counselors employ conventional counseling techniques and persuasive counseling strategies to encourage teens' active participation in various activities.

"The counseling provided to teenagers in our current setting exhibits notable distinctions compared to the counseling offered to individuals in this particular context. In the context of adolescents, it is imperative to employ persuasive strategies and prioritize their well-being as a primary concern".

"Provide them with what they desire. Occasionally, there is a proclivity for organizing events in which our musical ensembles desire to participate. Mother; I want us to attend that evening".

Category 2: Factors Influencing Motivation to Engage in the Test

This study explores the importance of HIV testing, especially among high-risk populations, and the motivational factors driving individuals to seek treatment for HIV infection.

"Due to the chronic nature of HIV infection, it is imperative to consistently encourage individuals to get testing and foster their comprehension of the risks associated with HIV exposure. However, considering his HIV-positive status, what factors could drive his motivation to seek treatment?"

Theme 5: Obstacles to HIV Testing among Adolescents

The fifth thematic area discusses challenges in HIV testing among young people, including lack of participation, active refusal, and concerns about the potential outcomes of the test, particularly if positive results are obtained.

Category 1: Adolescent Noncompliance with HIV Testing

Adolescents frequently exhibit insufficient engagement in undergoing HIV testing procedures. According to the informant,

"it has been observed that there is a relatively low turnout of teens at the posyandu, even though it is specifically intended for this age group. Teenagers have a notable deficiency in terms of their level of engagement and involvement. Typically, during adolescence, if an individual expresses a lack of interest in voluntary counseling and testing (VCT), they are unlikely to actively participate in the local integrated health service center (posyandu).

Adolescents frequently exhibit reluctance to undergo HIV testing. According to the accounts provided by the informants,

“There are individuals who occasionally exhibit a refusal to comply. The term “VCT,” which stands for Voluntary Counselling and Testing, is commonly used to refer to the subject under discussion. It is important to possess a certain willingness to engage in this process. That said, let us continue elaborating on the topic at hand”.

Category 2: Anxiety for Positive Outcome

Upon receiving a positive HIV test result, individuals may perceive their hopes and objectives as futile.

“In addition to this, adolescents may also encounter social stigma within their immediate surroundings. Furthermore, teenagers may be apprehensive about the test's potential positive outcome. Due to the perception that HIV is a highly lethal ailment capable of jeopardizing one's prospects for the future”.

Theme 6: Factors Facilitating HIV Testing Among Adolescents

Theme six explores factors influencing adolescents' decision to undergo HIV testing, emphasizing the importance of understanding HIV, self-awareness, and peer support in increasing their willingness to undergo the test.

“These factors are significant determinants for adolescents' inclination to undergo HIV testing. Firstly, the awareness among teens regarding HIV disease plays a crucial role in motivating them to seek testing. Additionally, their self-awareness regarding their risk factors and susceptibility to HIV further contributes to their decision to undergo testing. Furthermore, observing their peers undergoing HIV testing can influence adolescents to follow suit and opt for testing themselves”.

DISCUSSION

Indonesia's multifaceted strategy for HIV prevention includes several national programs: the Information and Education Communication (KIE) initiative, the HIV Testing and Counseling Program, the HIV Test and Treat framework, and the 100% Condom Use Programme. These initiatives reflect the government's commitment to a comprehensive response, with a particular emphasis on scaling up Voluntary Counselling and Testing (VCT) services as a gateway to early treatment and reduced transmission^{10, 11}. In line with these efforts, the current study assessed the accessibility and quality of care, counseling, and support services available to individuals diagnosed with HIV, with a particular focus on the effectiveness of VCT in early detection and care linkage.

Additionally, the Youth Integrated Health Program has demonstrated success in facilitating preventive health services through structured activities such as anemia screening, nutrition supplementation, and peer-led discussions on sexual and reproductive health¹⁶. This aligns with the present study's emphasis on early detection and the importance of engaging youth in holistic health education. The use of group-based activities, including interactive counseling, educational film screenings, and skill-building sessions, has been shown to enhance both awareness and participation among adolescents¹⁷.

The initial phase of voluntary counseling and testing (VCT) in a community involves pre-test counseling, with clients taking a proactive approach to registration. Participants complete a consent form after receiving information about the trial. The next stage involves the client's decision to continue the evaluation. A post-counseling test is administered after completing both pre-counseling and HIV tests.

Counselors explain results emotionally, and the client's mental health status influences therapy follow-up.⁹ The Ministry of Health is establishing Adolescent Health Services (PKPR) at community health centers, offering comprehensive services like KIE, counseling, peer counselor development, clinical/medical services, and referrals.¹⁰ Sexuality education is part of this comprehensive education, aiming to help adolescents mature into responsible individuals and navigate sexual well-being.⁹ Integrated health program aims to facilitate knowledge acquisition, ideation of remedies, and support network formation among young individuals

The Youth Integrated health program involves registration, attendance list completion, clinical evidence of anemia, and systematic recording of outcomes in a register book and an adolescent health monitoring book.¹¹ Health services are administered based on various issues, including counseling tailored to the specific challenges faced by adolescents,¹² provision of iron tablets or vitamin supplements, IEC initiatives, and group-based activities such as counseling sessions, film screenings, reading surgical literature as a group, and fostering group skills in areas such as handicrafts, entrepreneurship, and gymnastics.¹³ Correctional institutions in Indonesia, also known as Lapas, provide counseling and education to incarcerated individuals. HIV testing for inmates within correctional facilities uses VCT methods conducted in collaboration with UPT Puskesmas Ibrahim Adjie. However, young individuals face hurdles in HIV testing due to non-participation, hesitancy towards voluntary counseling and testing, and apprehensions about positive test results.¹⁴ Further research is needed to understand the advantages of early HIV testing and its potential for extended health periods. HIV testing services and peer influence drive adolescents to undergo testing, with knowledge about HIV disease positively associated with awareness of the need for testing.¹⁵ Knowledge about HIV and transmission modes influences intentions to undergo testing, and assessing an individual's knowledge is essential for understanding the potential consequences of high-risk behaviors.¹⁶

Notably, earlier studies have shown that peer influence and access to youth-friendly health information significantly increase the likelihood of adolescents undergoing HIV testing¹⁹. Awareness of HIV transmission routes and preventive practices is closely linked to testing intentions²⁰. The present study reinforces this association, highlighting the critical role of knowledge acquisition in encouraging early diagnosis. Moreover, the presence of trained peer educators, school-based interventions, and accessible mobile-based information platforms have also been associated with higher HIV testing uptake among adolescents²¹. However, while many previous investigations explored youth knowledge and attitudes about HIV, few have focused on the operational delivery of VCT or on system-level challenges within Indonesian public health structures²². By examining how VCT is managed at the service level and perceived by both providers and adolescents, the current study fills this gap and underscores the urgent need for capacity-building, confidentiality safeguards, and culturally responsive outreach strategies in adolescent-focused HIV services.

The case study research methodology, limited to a single respondent and a single community health center in Bandung City, has limitations in generalizability and adolescent detection management,

highlighting a weakness in Indonesian HIV services. However, the study provides valuable insights for community health centers, especially in promoting early HIV detection in adolescents, as effective strategies can reduce HIV prevalence in Indonesia, facilitate early diagnosis, improve treatment outcomes, and serve as a reference for future research.

CONCLUSIONS AND RECOMMENDATIONS

The research in primary care reveals that the youth integrated health program aims to identify early HIV cases among adolescents through HIV counseling and testing. However, low engagement and reluctance to test can hinder successful implementation. To overcome these, educational institutions should incorporate case studies on early HIV detection, use them as resources for nurses, and enhance HIV testing techniques. Community health centers are crucial for providing healthcare services to underserved populations and addressing healthcare disparities. Primary care should also enhance its HIV testing techniques to engage adolescents. The study's findings will serve as foundational evidence for future research on the proactive role of nurses in identifying HIV infection in adolescent populations.

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