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Biological Perspective Analysis on Education Level and Motivation in the Implementation of Premarital HIV Screening Tests: A Quantitative Study with a Cross-Sectional Design

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Abstract: The research aims to explore how education level and motivation influence the adoption of premarital HIV screening tests in Pasar Kemis District, Tangerang Regency, in 2024, focusing on biological perspectives of HIV. HIV, a virus impacting human immunity by targeting CD4 cells crucial for immune response, underscores the significance of understanding its biological mechanisms to enhance early detection and prevent transmission. Using a quantitative approach with a cross-sectional design, the study involves 61 mothers of prospective brides and grooms, sampled through accidental selection. Data collection utilizes a questionnaire to gather primary data, analyzed via chi-square tests. Preliminary findings reveal a substantial 63.94% participation rate in premarital HIV screening, with 52.52% having higher education and 63.9% showing high motivation. Bivariate analysis demonstrates a significant correlation between education (p-value = 0.001) and motivation (p-value = 0.000) with the uptake of premarital HIV testing. Emphasizing the role of education and motivation in promoting HIV screening, the study advocates for encouraging prospective couples to undergo testing early. This proactive approach aims to identify and manage potential HIV infections promptly, mitigating further transmission and enhancing overall health outcomes.

Keywords: Education; Motivation; Screening Pre-Marital HIV Test

Introduction

Human Immunodeficiency Virus (HIV) is a virus that specifically targets and infects white blood cells, which are integral to the human immune system(Thurman et al., 2020; Zahra et al., 2022). This infection ultimately leads to a profound weakening of the body's ability to defend itself against infections and diseases. Recognized by the World Health Organization (WHO) as a persistent global health issue, HIV/AIDS has claimed the lives of approximately 32 million individuals worldwide, making it one of the most devastating pandemics and a critical multinational concern (Kementerian Kesehatan Republik Indonesia, 2022).

As of the WHO's latest estimates in 2023, around 39.0 million people were living with HIV globally by the end of 2022. This includes 1.5 million children under the age of 14. The year 2022 saw 1.3 million new HIV infections and 630,000 deaths due to HIV-related illnesses globally, marking a significant decrease in mortality compared to previous years (Barmania & Aljunid, 2017; Thuo et al., 2016). In the Americas alone, an estimated 3.8 million people were living with HIV in 2022, with encouraging statistics showing that a high percentage knew their status, received treatment, and

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achieved viral suppression (WHO, 2023). Similarly, Southeast Asia, including Indonesia, reported 3.9 million people living with HIV in 2022, with 75% of them receiving antiretroviral therapy (ARV).

In the Asia Pacific region, Indonesia ranks third in terms of HIV/AIDS cases, following India and China. The Ministry of Health (Kemenkes) projects that the number of HIV cases in Indonesia could reach 515,455 by September 2023, with 88% of cases confirmed. Majority of HIV cases in Indonesia are found among individuals aged 25-49 years (69.9%), followed by those aged 20-24 years (16.1%) (Muhamad, 2023). In Banten Province, which includes Tangerang Regency, there are predictions that HIV/AIDS cases could reach 17,680, with most cases concentrated in the Greater Tangerang area, including Pasar Kemis District, where factors such as transgender communities and illegal prostitution contribute significantly to transmission (Saadatuddaraen, 2023).

Specifically, in Tangerang Regency, the number of HIV/AIDS cases increased from 522 in 2022 to 533 in 2023, with a majority of cases affecting men (79.44%) and a significant proportion affecting individuals aged 25-29 years (70%) (Dinas Kesehatan Kabupaten Tangerang, 2023). Despite efforts by the government, such as marriage guidance programs to raise awareness about HIV, stigma and insufficient knowledge about HIV testing remain major obstacles, leading to low uptake of testing among the population (Kementerian Kesehatan Republik Indonesia, 2022).

Lawrence Green's health behavior theory, as discussed by Notoatmodjo (2020), identifies education and motivation as critical factors influencing health screening behaviors, including HIV testing. Previous studies by Sari (2015) have demonstrated a clear link between higher levels of education, stronger motivation, and increased participation in HIV testing among communities (Bull & Rayment, 2016; Chen et al., 2022; Fenske & Wang, 2023).

A preliminary study conducted at the Kutabumi Community Health Center in Pasar Kemis District, Tangerang Regency, revealed that out of 1,137 individuals surveyed, only 802 (70.53%) underwent HIV screening tests. This indicates a persistent gap in achieving the targeted screening rate of 95%. Interviews conducted with 10 individuals revealed that lack of motivation, particularly among those with lower educational attainment (junior high school), was a significant factor contributing to low testing rates (Kementerian Kesehatan Republik Indonesia, 2022).

Given the severity and complexity of the HIV/AIDS epidemic in Pasar Kemis District and broader Tangerang Regency, it is imperative to conduct rigorous research into the factors influencing premarital HIV testing. This study aims to uncover the underlying reasons behind the disparities in testing rates, particularly focusing on the roles of education, motivation, and socio-cultural factors (Griffin, 2018; Nkenfou et al., 2015; Ochola et al., 2021). By understanding these dynamics, interventions can be tailored to effectively promote and facilitate increased uptake of HIV screening tests among the population (Harahap et al., 2022; Hasibuan, 2024).

The significance of this research lies in its potential to inform targeted public health strategies and policies aimed at improving HIV testing rates and reducing transmission rates in high-risk communities like Pasar Kemis. By identifying barriers and facilitators to testing, health authorities can implement more effective education campaigns, destigmatization efforts, and accessible healthcare services (Birhanu et al., 2023; Sianturi & Wittiarika, 2022). Ultimately, this research endeavors to contribute to the global effort in combating HIV/AIDS, ensuring better health outcomes and quality of life for affected individuals and communities in Tangerang Regency and beyond (Poirier et al., 2015; Thurman et al., 2020; Wang & Cheng, 2020).

The importance of this research lies in addressing the critical gaps and challenges in HIV/AIDS prevention and control efforts, particularly in Pasar Kemis District, Tangerang Regency. Despite government initiatives, such as awareness programs and healthcare services, low uptake of HIV testing persists due to factors like stigma, insufficient knowledge, and lack of motivation among the population (Huang et al., 2023; Mourez et al., 2018; Susanto et al., 2016). By investigating the underlying reasons for disparities in testing rates, focusing on education, motivation, and socio-cultural influences, this study aims to provide insights that can inform targeted interventions and policies. These efforts are crucial for promoting widespread HIV testing, reducing transmission rates, and ultimately improving health outcomes and quality of life for individuals and communities affected by HIV/AIDS in Tangerang Regency and similar high-risk areas.

Method

Research design and method should be clearly defined. This research design is quantitative analytical research with a cross design sectional. Data was collected by the researcher himself directly from the first source, namely the results of questionnaires with respondents relating to knowledge, attitudes, sources of information, family support and support from health workers with screening. premarital HIV test (Chavez et al., 2020; Patel & Cassidy, 2018). Retrieval technique sample used is accidental sampling because researcher

spread questionnaire to every respondent. The questionnaire used in this study used a closed questionnaire with structured questions asked directly to the subject, the subject just had to choose the answers provided (Kirana et al., 2023; Unigwe et al., 2023; Karame et al., 2024). Population taken in this research were all prospective brides and grooms in 2024 who underwent examinations at the Kutabumi Health Center, Pasar Kemis District, Tangerang Regency for the period February-April 2024, totaling 155 respondents. Research Samplefor this research was 61 respondents. The research was carried out in April -May 2024.The place of research was carried out at the Kutabumi Health Center, Pasar Kemis District, Tangerang Regency.Data processing is carried out in a way univariate and bivariate with the Chi Square test using the SPSS program.

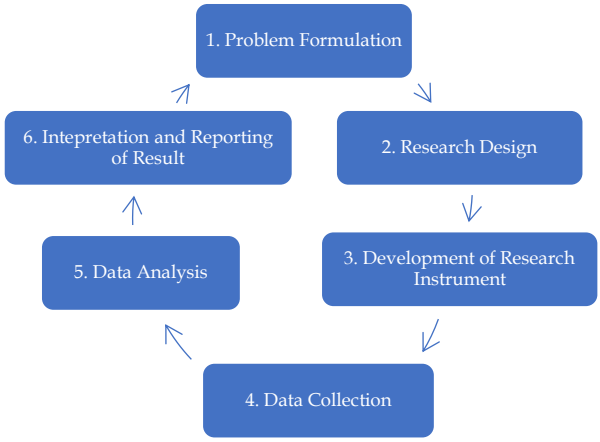

Figure 1. Research Procedure

Result and Discussion

Based on the research results presented in Table 1, it is evident that out of the total 61 respondents (referred to as catins), a significant majority participated in pre-marital HIV testing. Specifically, 32 individuals, accounting for 63.9% of the sample, underwent screening for HIV prior to marriage. Additionally, within this group, 32 people, or 52.5%, had attained higher education levels. Moreover, a considerable number of respondents, 39 individuals representing 63.9% of the sample, exhibited high levels of motivation towards undergoing the pre-marital HIV testing. These findings highlight the positive correlation between higher education, motivation, and the likelihood of participating in HIV screening among prospective brides and grooms.

Based on Table 2, it shows that of the 32 catins with higher education, 27 (84.4%) underwent screening pre-marital HIV testing, while of the 29 women with low education, 17 (58.6%) did not undergo screening premarital HIV test. The results of the Chi- Square test showed a p value = 0.001 < 0.05, which means there is a significant relationship between catin education and screening. pre- marital HIV test at the Kutabumi Community Health Center, Pasar Kemis District,Tangerang Regency in 2024. The OR value is 7.650, so it can be stated that women with higher education have a 7.650 chance of being screened. premarital HIV test compared to catin with low education.

Table 1. Distribution Frequency Screening Pre-Marital HIV Testing, Catin Education and Motivation at Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency in 2024

Variable	Frequency (f)	Percentage (%)
Premarital HIV Screening Test		
Yes	32	63.9
No	22	36.1
Education		
Tall	32	52.5
Low	29	47.5
Motivation		
Tall	39	63.9
Low	22	36.1
Amount	61	100

Table 2. Connection between Catin Education with Pre-Marital HIV Screening Test at Community Health Center Kutabumi Pasar Kemis District, Tangerang Regency in 2024

Education	Premarital HIV Screening Test				Amount		P value	ORCI (95%)
	Yes		No					
	f	%	f	%	f	%		
Tall	27	84.4	5	15.6	32	100	0.001	7.65 (2.28-25.57)
Low	12	41.4	17	58.6	29	100		
Total	39	63.9	22	36.1	61	100		

Table 3. The relationship between Catin Motivation and Screening Pre-Marital HIV Testing at Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency in 2024

Motivation	Pre-Marital HIV Screening Test				Amount		P value	ORCI (95%)
	Yes		No					
	F	%	f	%	f	%		
Tall	32	82.1	7	17.9	39	100	0.000	9.796 (2.91-32.98)
Low	7	31.8	15	68.2	22	100		
Total	39	63.9	22	36.1	61	100		

Based on table 3, it shows that of the 39 catins with high motivation, 32 (82.1%) carried out screening pre-marital HIV testing, while of the 22 catins with low motivation, 15 (68.2%) did not carry out screening premarital HIV test. The results of the Chi- Square test showed a p value = 0.000 < 0.05, which means there is a significant relationship between catin motivation and screening. Pre-marital HIV test at the Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency in 2024. The OR value is 9.796 so it can be stated that women with high motivation have a 9.796 chance of undergoing screening. premarital HIV testing compared to catin with low motivation.

Screening Frequency DistributionPre-Marital HIV Test on Catin at Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency in 2024

Based on the results of the research, it was found that in 2024 most of the catins at the Kutabumi Health Center, Pasar Kemis District, Tangerang Regency carried out screening. Pre- marital HIV testing was 32 people (63.9%). The implementation of HIV testing needs to be adjusted to the principle that the patient has received sufficient information and agreed to the HIV test and all parties maintain confidentiality. HIV testing is only carried out on the basis of the client's willingness, without coercion and without pressure (Kementerian Kesehatan Republik Indonesia, 2022). According to Lawrence Green's theory in Notoatmodjo (2020), education and motivation are related to the mother's behavior in carrying out screening examinations Pre-Marital HIV Test on Catin.

In accordance with the results of research by Aswar (2013), her research shows that the majority of mothers undergo screening premarital HIV testing was 64.2%. Likewise, with the research results of Hikmah et al. (2018) in their research based on examination screening test the majority of mothers undergo HIV testing screening test HIV is as much as 63.1%. Different research obtained by Sabilla et al. (2020) showed that 86% of them had HIV testing visits.

Researchers assume that many prospective brides and grooms undergo screening examinations test HIV, this is caused by the mother's awareness as an effort to prevent HIV transmission caused by sexual intercourse. Apart from that, through screening testHIV will then create trust in each other after marriage. Several factors in this awareness are caused by the mother's high education and motivation to carry out screening examinations test Premarital HIV.

Frequency Distribution of Catin Education at Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency in 2024

Based on the research results, it was found that in 2024, the majority of catins at the Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency had higher education, 32 people (52.5%). Education influences the learning process, the higher a person's education, the easier it is for that person to receive information. Ignorance can be caused by low education, someone with too low an education level will find it difficult to receive messages, digest the messages and information conveyed. This knowledge is obtained both formally and informally. Meanwhile, mothers who have a higher level of education are generally open to accepting changes or new things to maintain their health (Wawan & Dewi, 2021). Notoatmodjo (2020) said that changes or actions to maintain and improve health produced by health education are based on knowledge and awareness through the learning process so that this behavior is expected to last a long time and persist because it is based on awareness.

In line with the research results of Aswar (2013), her research shows that the majority of respondents had higher education, 94.2%. Likewise, with the research results of Hikmah et al. (2018) in their research, the majority of mothers' education was higher education, namely 68.3%. Different research was obtained by Sabilla et al. (2020). Based on the highest frequency of education, it was categorized as high, namely SMA 75.0%. Researchers assume that there are many mothers with higher education, where the average mother has a high school education so that mothers have more knowledge in examinations screening test Premarital HIV for the reason that health can be detected, especially in relation to HIV disease which can be transmitted through sexual intercourse. Education is one of the factors that influences a person's acceptance of new ideas, including screening test Premarital HIV. Someone who has a high level of education will be more knowledgeable and easier to accept ideas, more independent and rational in making decisions and actions. Women who have higher education will tend to carry out examinations screening test Premarital HIV.

Frequency Distribution of Catin Motivation in Kutabumi Health Center, Pasar Kemis District, Tangerang Regency in 2024

Based on the research results, it was found that the majority of catins at the Kutabumi Health Center, Pasar Kemis District, Tangerang Regency in 2024 had high motivation, as many as 39 people (63.9%). Motivation contains three important elements, namely initiating energy changes in each individual human being, motivation is relevant to psychological issues, affection and emotions which can determine changes in human behavior and is stimulated by a goal (Sardiman, 2020). Factors that influence motivation are physical, mental,

hereditary, environmental, age maturity, facilities and media (Wawan & Dewi, 2021).

In line with the results of Sari (2015) research, the majority of respondents with strong motivation to utilize VCT services were 67.8%. Puspita et al. (2019) in their research found that 92.4% had high motivation. Researchers assume that many mothers have high motivation, indicating that mothers who have a strong perception of self-control in HIV prevention efforts will have a more positive attitude, resulting in positive behavioral changes in carrying out examinations. screening test Premarital HIV. Increasing pregnant women's efforts to prevent HIV requires high motivation to carry out examinations screening test Premarital HIV. A person can be motivated to change a behavior by providing knowledge. Good knowledge of inspection screening test Pre-marital HIV makes them feel confident that they are able to face the obstacles that exist within themselves to encourage them to undergo examination screening test Premarital HIV.

Catin Education and Screening Pre-Marital HIV Testing at Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency in 2024

Based on research, it shows that the p value = 0.001 < 0.05, which means there is a significant relationship between catin education and screening. pre- marital HIV test at the Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency in 2024. The OR value is 7.650, so it can be stated that women with higher education have a 7.650 chance of being screened. premarital HIV testing compared to those with low education.

Efendi (2015) explains that the level of education is something that plays a role in participation in carrying out examinations screening test HIV. Any information conveyed can be processed so that it can be accepted by reason. Low education levels carry out less screening test HIV. Mothers with higher education are more exposed to information related to HIV (ways of transmission and prevention) including how to have safe sexual relations. Elsa (2021) emphasized that the level of education also has an influence in determining choices, because someone who has a higher education will generally have a broader outlook and be more receptive to innovative ideas and things. Education is the process of changing the attitudes and behavior of a person or group of people in an effort to mature humans through teaching and training efforts. A person with a higher level of education will have a better level of utilization of VCT clinics so they will have a higher desire to carry out screening examinations test HIV.

In line with the research results of Aswar (2013), her research shows that the results of the chi test square There is a relationship between education level and participation in the examination screening test HIV, obtained a significance of 0.005, so there is a relationship between the level of education and participation in the examination screening test HIV. Likewise, with the research results of Hikmah et al. (2018) in their research there is a relationship between education and examination screening test HIV with significance value the results show (p = 0.01 < 0.05). Different research was obtained by Sabilla et al. (2020) results of the chi-square test and P Value statistical test = 0.567, so there is no significant relationship between education and HIV testing visits. This is because most mothers with higher and lower education have HIV testing visits.

Researchers assume there is a relationship between education and examination screening test Premarital HIV. This is because the higher the education, the stronger the desire to carry out examinations screening test Premarital HIV. A person's level of education influences behavior regarding their health condition. Education can improve access to services, namely by increasing women's access to information, and increasing their ability to absorb new health concepts. Low education will make it difficult to teach and provide information, resulting in knowledge about examinations screening test HIV is also limited. A mother's education will determine the pattern of acceptance and decision making, the more educated a mother is, the better the decisions she will make.

The Relationship between Catin Motivation and Screening Pre-Marital HIV Test at Community Health Center Kutabumi, Pasar Kemis District, Tangerang Regency in 2024

Based on research, it shows that the p value = 0.000 < 0.05, which means there is a significant relationship between catin motivation and screening. pre -marital HIV test at the Kutabumi Community Health Center, Pasar Kemis District, Tangerang Regency in 2024. The OR value is 9.796 so it can be stated that women with high motivation have a 9.796 chance of undergoing screening. premarital HIV testing compared to catin with low motivation.

In general, the purpose of motivation is to move or inspire someone so that they have the desire and willingness to do something so that they can get results or achieve certain goals (Purwanto, 2021). Motivation will cause a change in the energy that exists within humans, so that it will be related to issues of psychological symptoms, feelings and emotions, so that they can then act or do something. Everything is driven by goals, needs and desires. The motivation in this research is the motivation to carry out a scining examination test HIV (Sardiman, 2020).

In accordance with the research results of Sari (2015), p value = 0.000, thus there is a relationship between motivation in prevention efforts and

encouragement (motivation) to utilize VCT services. Puspita et al. (2019) in their research with p value 0.000 so there is a relationship between motivation and readiness to carry out HIV testing.

Researchers assume there is a relationship between motivation and screening pre-marital HIV testing, this is because the higher the mother's motivation, the stronger she is to carry out screening premarital HIV test. Mothers who have high motivation certainly already know the benefits of carrying out screening Pre- marital HIV testing is an effort to prevent early detection of HIV before marriage which results in transmission and can even cause death. This has a positive impact on actively participating in screening premarital HIV test.

Conclusion

In conclusion, the study conducted at the Kutabumi Community Health Center in Pasar Kemis District, Tangerang Regency, in 2024 highlighted encouraging trends in premarital HIV screening participation among catins. A significant majority, accounting for 63.9%, underwent the screening, reflecting a positive response to health initiatives in the community. The research also identified a noteworthy correlation between higher education levels and engagement in HIV screening, with 52.5% of participants having attained higher education. Moreover, the study underscored the pivotal role of motivation, as evidenced by 63.9% of catins demonstrating high motivation towards undergoing the premarital HIV test. Statistical analyses further reinforced these observations, revealing statistically significant relationships between educational attainment ($p = 0.001$) and motivation ($p = 0.000$) with the likelihood of participating in the screening. These findings emphasize the importance of educational campaigns and motivational strategies in promoting proactive health behaviors among prospective brides and grooms, thereby contributing to enhanced public health outcomes and HIV prevention efforts in the community.

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Author Contributions
The following statements should be used Conceptualization, TR, IL, IJ, K, INS, IK contributed to the data collection process, data processing, article writing.

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Conflicts of Interest
The authors declare no conflict of interest.

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