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Association of Economic Status and Type of Occupation with Changes in Risky Behaviors among People Living with HIV/AIDS in Kupang City, Indonesia

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ABSTRACT

Background: Human Immunodeficiency Virus (HIV) remains a major global public health problem. Changes in risky behaviors among people living with HIV/AIDS (PLWHA) play a crucial role in preventing further transmission. Socioeconomic factors, particularly economic status and type of occupation, may influence behavioral changes by affecting access to health information and services.

Objective: This study aimed to analyze the association between economic status and type of occupation with changes in risky behaviors among people living with HIV/AIDS in Kupang City, Indonesia.

Methods: An analytical observational study with a cross-sectional design was conducted among adult PLWHA in Kupang City from August to October 2024. A total of 136 respondents were selected using non-probability consecutive sampling. Data were collected using structured questionnaires assessing economic status, type of occupation, risky behaviors, and changes in risky behaviors. Data analysis was performed using descriptive statistics and Spearman rank correlation test, with a significance level of $p < 0.05$.

Results: Most respondents showed changes in risky behaviors after being diagnosed with HIV. Statistical analysis demonstrated a significant association between economic status and changes in risky behaviors among PLWHA. In addition, type of occupation was also significantly associated with changes in risky behaviors.

Conclusion: Economic status and type of occupation are significantly associated with changes in risky behaviors among people living with HIV/AIDS in Kupang City. These findings highlight the importance of incorporating socioeconomic considerations into HIV prevention and behavioral intervention programs.

KEYWORDS: HIV/AIDS, economic status, occupation, people living with HIV/AIDS, risky behavior.

INTRODUCTION

Human Immunodeficiency Virus (HIV) is a virus that attacks the immune system by destroying CD4 cells, leading to progressive immune deficiency and increased susceptibility to opportunistic infections. Without adequate treatment, HIV infection may progress to Acquired Immune Deficiency Syndrome (AIDS) within 10–15 years. Individuals infected with HIV are commonly referred to as people living with HIV/AIDS (PLWHA).[1,2]

Since its identification in the early 1980s, HIV/AIDS has remained a major global public health concern. According to the World Health Organization (WHO), approximately 39 million people were living with HIV worldwide in 2022, with 1.3 million new infections and 630,000 HIV-related deaths reported in the same year.[3,4] Although the global incidence of HIV has declined over the past decade, transmission continues to occur, particularly among vulnerable populations.

In Indonesia, HIV/AIDS remains a significant public health problem. National reports indicate a cumulative total of more than 330,000 reported HIV cases by early 2023. In East Nusa Tenggara Province, the number of reported AIDS cases continues to increase, with Kupang City representing one of the areas with the highest burden.[5,6] These data highlight the importance of conducting locally relevant studies to support effective prevention and intervention strategies.

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HIV transmission primarily occurs through exposure to infected blood and sexual fluids, including unprotected sexual intercourse, sharing contaminated needles, mother-to-child transmission, and unsafe medical procedures.[7] Behavioral factors play a critical role in HIV transmission, and changes in risky behaviors among PLWHA are essential to prevent further spread of the virus. Risky behaviors include unprotected sexual activity, multiple sexual partners, injection drug use, and other practices that facilitate viral transmission.[8]

Socioeconomic factors are known to influence health-related behaviors, including those associated with HIV transmission. Economic status affects access to healthcare services, health information, and preventive measures. Individuals with lower economic status often experience limited access to HIV testing, treatment, and behavioral counseling, which may increase the likelihood of persistent risky behaviors.[9,10]

In addition to economic status, type of occupation may influence changes in risky behaviors among PLWHA. Employment stability and working conditions can affect access to health services, social support, and exposure to health information. Previous studies have shown that individuals with stable employment are more likely to engage in positive health behaviors and adhere to HIV treatment compared to those who are unemployed or employed in informal sectors.[11]

Despite evidence suggesting that socioeconomic factors play an important role in HIV-related behaviors, data examining the association between economic status, type of occupation, and changes in risky behaviors among PLWHA in Kupang City remain limited. Understanding these relationships is essential for developing targeted and context-specific interventions aimed at reducing HIV transmission. Therefore, this study aimed to analyze the association between economic status and type of occupation with changes in risky behaviors among people living with HIV/AIDS in Kupang City, Indonesia.

METHODS

This analytical observational study employed a cross-sectional design and was conducted in Kupang City, East Nusa Tenggara Province, Indonesia, from August to October 2024. The study population consisted of adult people living with HIV/AIDS (PLWHA) who were registered and receiving care at healthcare facilities providing HIV services in Kupang City. The sample size was calculated using the Slovin formula, resulting in a minimum sample of 136 respondents. Participants were recruited using a non-probability consecutive sampling technique, whereby all eligible individuals who met the inclusion criteria during the study period were invited to participate until the required sample size was achieved. Inclusion criteria were a confirmed diagnosis of HIV/AIDS, age of 18 years or older, ability to communicate effectively, and willingness to participate as indicated by written informed consent. Individuals who were severely ill or unable to complete the questionnaire at the time of data collection were excluded.

Data were collected using a structured questionnaire developed based on relevant literature and guidelines. The questionnaire captured sociodemographic characteristics, economic status, type of occupation, risky behaviors related to HIV transmission, and self-reported changes in risky behaviors following HIV diagnosis. Economic status was categorized according to monthly income relative to the regional minimum wage, while type of occupation was classified into employed and unemployed or informal employment categories. Changes in risky behaviors were defined as modifications in behaviors associated with HIV transmission risk, including unprotected sexual intercourse, multiple sexual partners, and other high-risk practices, and were categorized as no change, partial change, or complete change. Data collection was conducted through face-to-face interviews by trained data collectors to ensure data completeness and accuracy.

Data analysis was performed using statistical software. Descriptive statistics were used to summarize participant characteristics and variable distributions. Bivariate analysis was conducted using the Spearman rank correlation test to assess the association between economic status, type of occupation, and changes in risky behaviors. A p-value of less than 0.05 was considered statistically significant.

This study received ethical approval from the Health Research Ethics Committee, Faculty of Medicine and Veterinary Medicine, Universitas Nusa Cendana, Kupang, Indonesia (Approval Number: 52/UN15.21/KEPK/2024). Ethical review was conducted through an expedited process, and the study was approved without substantive revisions. All participants received detailed information regarding the study objectives, procedures, potential risks, and benefits prior to participation, and written informed consent was obtained. Participant confidentiality and anonymity were strictly maintained through the use of coded data and restricted access to research records. The study was conducted in accordance with the principles of the Declaration of Helsinki.

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RESULTS

Characteristics of Respondents

A total of 140 people living with HIV/AIDS (PLWHA) were included in this study. Most respondents were male, in the productive age group of 25–44 years, had completed senior high school education, and were unmarried. Detailed demographic characteristics are presented in Table 1. The majority of respondents were aged 25–44 years, indicating that most participants were in the productive age group.

Table 1. Characteristics of respondents (n = 140)

Variable	n	%
Sex		
Male	75	53.6
Female	65	46.4
Age group (years)		
18–24	18	12.9
25–44	99	70.7
45–59	17	12.1
60–74	6	4.3
Education level		
Primary school	15	10.7
Junior high school	23	16.4
Senior high school	75	53.6
Diploma (D3)	3	2.1
Bachelor's degree	24	17.1
Marital status		
Married	58	41.4
Unmarried	82	58.6

Socioeconomic Characteristics

The socioeconomic characteristics of respondents, including economic status and type of occupation, are summarized in Table 2.

Table 2. Socioeconomic characteristics of respondents (n = 140)

Variable	n	%
Economic status		
No income	51	36.4
< Regional minimum wage	72	51.4
≥ Regional minimum wage	17	12.2
Type of occupation		
Unemployed	51	36.4
Informal employment	45	32.2
Formal employment	44	31.4

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More than half of respondents had a monthly income below the regional minimum wage, and the largest proportion of respondents were unemployed.

Changes in Risky Behaviors

The distribution of changes in risky behaviors among respondents after being diagnosed with HIV is presented in Table 3. Most respondents reported partial or complete changes in risky behaviors following HIV diagnosis.

Table 3. Distribution of changes in risky behaviors among PLWHA (n = 140)

Changes in risky behaviors	n	%
No change	33	23.6
Partial change	51	36.4
Complete change	56	40.0

Association Between Economic Status and Changes in Risky Behaviors

The association between economic status and changes in risky behaviors among PLWHA was examined using the Spearman rank correlation test, as presented in Table 4. Statistical analysis revealed a significant association between economic status and changes in risky behaviors (p = 0.015). This finding indicates that variations in economic status were accompanied by differences in the distribution of behavioral changes among respondents.

Table 4. Association between economic status and changes in risky behaviors among PLWHA (n = 140)

Economic status	No change n (%)	Partial change n (%)	Complete change n (%)	Total n (%)	*p*-value
No income	14 (9.3)	26 (17.8)	11 (7.2)	51 (36.4)	
< Regional minimum wage	14 (10.7)	22 (16.4)	36 (26.4)	72 (51.4)	**0.015**
≥ Regional minimum wage	5 (3.6)	3 (2.2)	9 (6.4)	17 (12.2)	
Total	33 (23.6)	51 (36.4)	56 (40.0)	140 (100)	

Association Between Type of Occupation and Changes in Risky Behaviors

The relationship between type of occupation and changes in risky behaviors was also analyzed using the Spearman rank correlation test, with the results shown in Table 5. The analysis demonstrated a statistically significant association between occupation type and changes in risky behaviors (p = 0.006). This result suggests that differences in employment status were associated with variations in behavioral change patterns among PLWHA.

Table 5. Association between type of occupation and changes in risky behaviors among PLWHA (n = 140)

Occupation type	No change n (%)	Partial change n (%)	Complete change n (%)	Total n (%)	*p*-value
Unemployed	14 (9.9)	26 (18.5)	11 (7.8)	51 (36.4)	
Informal employment	9 (6.5)	16 (11.5)	20 (14.3)	45 (32.2)	**0.006**
Formal employment	10 (7.2)	9 (6.4)	25 (17.9)	44 (31.4)	
Total	33 (23.6)	51 (36.4)	56 (40.0)	140 (100)	

DISCUSSION

This study demonstrated that economic status and type of occupation were significantly associated with changes in risky behaviors among people living with HIV/AIDS (PLWHA) in Kupang City. These findings reinforce the conceptual framework presented in the Introduction, which emphasizes the role of socioeconomic determinants in shaping HIV-related behaviors. Previous

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studies have consistently shown that economic vulnerability influences access to healthcare, exposure to preventive information, and the ability to adopt and sustain safer behaviors.[9,10,12]

The significant association between economic status and changes in risky behaviors ($p = 0.015$) suggests that income level may function as an enabling or constraining factor in behavioral adaptation following HIV diagnosis. Individuals with higher or more stable income are more likely to access regular medical follow-up, counseling services, and antiretroviral therapy, which have been shown to reinforce risk-reduction behaviors.[13,14] In contrast, PLWHA with limited economic resources often face competing priorities, such as food security and housing, which may reduce their capacity to prioritize behavioral change.[12,15]

This finding is consistent with studies conducted in low- and middle-income countries, where socioeconomic disparities have been linked to persistent HIV risk behaviors despite awareness of transmission routes.[12,16] Economic hardship has also been associated with psychological stress and reduced self-efficacy, both of which may negatively affect decision-making related to sexual and health behaviors.[17] These mechanisms may partly explain why respondents with no income or income below the regional minimum wage were less likely to report complete changes in risky behaviors in this study.

The association between type of occupation and changes in risky behaviors ($p = 0.006$) further supports the role of structural factors in HIV prevention. Respondents with formal employment were more likely to report complete behavioral changes compared to unemployed or informally employed individuals. Formal employment is often associated with greater job security, predictable income, and access to workplace-based health information, all of which may facilitate healthier behavioral choices.[11,18]

Previous research has shown that stable employment is associated with improved adherence to antiretroviral therapy, increased utilization of healthcare services, and reduced engagement in risky sexual behaviors.[18,19] Conversely, unemployment and informal employment have been linked to social instability and reduced access to health-promoting environments, which may hinder sustained behavioral change among PLWHA.[16,20] These findings align with the results of the present study and highlight occupation as an important, yet often under-addressed, determinant of HIV-related behavior.

The observed pattern of behavioral change also supports the notion that HIV diagnosis can serve as a "teachable moment" for initiating risk-reduction behaviors.[8,14] However, the persistence of risky behaviors among nearly one-quarter of respondents indicates that diagnosis alone is insufficient to ensure behavior modification for all individuals. This underscores the importance of ongoing behavioral support and tailored interventions, particularly for socioeconomically disadvantaged groups.[13,17]

From a public health perspective, these findings suggest that HIV prevention strategies should extend beyond individual-level counseling to address broader socioeconomic determinants of health. Integrating economic empowerment programs, employment support, and social protection mechanisms into HIV care services may enhance the effectiveness of behavioral interventions.[12,18,21] Multisectoral approaches that combine health, social, and economic policies are increasingly recognized as essential components of comprehensive HIV prevention efforts.[16,21]

Several limitations should be considered when interpreting these findings. The cross-sectional design precludes causal inference between socioeconomic factors and behavioral changes. In addition, reliance on self-reported data may introduce recall bias and social desirability bias. Nonetheless, this study contributes valuable local evidence on the influence of economic status and occupation on behavioral changes among PLWHA in Kupang City, where empirical data remain limited.

Overall, the results of this study strengthen existing evidence that socioeconomic and occupational factors are integral to understanding behavioral changes among PLWHA. Addressing these determinants within HIV prevention and care programs may improve behavioral outcomes and contribute to reducing HIV transmission at the community level.

CONCLUSION

This study concludes that economic status and type of occupation are significantly associated with changes in risky behaviors among people living with HIV/AIDS in Kupang City, Indonesia. Individuals with higher economic status and those engaged in formal employment were more likely to report positive behavioral changes following HIV diagnosis. These findings highlight the importance of socioeconomic and occupational factors in influencing behavioral adaptation among PLWHA.

The results emphasize that HIV prevention efforts should not rely solely on individual-level behavioral counseling but should also address broader socioeconomic determinants of health. Integrating economic support and employment-related interventions into HIV care programs may enhance the effectiveness of strategies aimed at reducing risky behaviors and preventing further HIV

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transmission. Future research using longitudinal designs is recommended to better elucidate causal relationships and evaluate the long-term impact of socioeconomic interventions on behavioral outcomes among PLWHA.

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