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Determinant of Perception Factors in People Living with HIV/AIDS (PLWHA) with the Attitude of Preventing Opportunistic Infections

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ABSTRACT

HIV and AIDS are worldwide health concerns. Opportunistic infections are brought on by a weakened immune system and the introduction of germs (bacteria, fungi, and viruses) into the body. Opportunistic Infections (OIs) can cause death in >90% of AIDS patients. The objective of this research is to identify perception factors associated with a positive attitude toward preventing opportunistic infections in people living with HIV/AIDS (PLWHA). This research was an analytical study applying a cross-sectional design and quantitative approaches. This study included 30 samples from PLWHA from the General Hospital of South Tangerang City, Indonesia. Samples were collected using a non-random sampling technique involving accidental sampling. From the results of the study, a relationship of perceived threat (p-value = 0.001; r = 0.515), perceived susceptibility (p-value = 0.044; r = 0.345), perceived severity (p-value = 0.361), perceived benefit (p-value = 0.643), perceived barrier (p-value = 0.094; r = 0.463), and perceived self-efficacy (p-value = 0.004; r = 0.463) was obtained with the prevention attitude of opportunistic infections. The perceived threat is a major factor influencing attitudes toward OI prevention.

Keywords: Opportunistic Infection; Perceived; Attitude; HIV/AIDS

INTRODUCTION

The global HIV/AIDS epidemic has entered a critical phase (Bhat *et al.*, 2022; Aborode *et al.*, 2021; Kementerian PPN/Bappenas, 202). Until 2020, the number of people living with HIV/AIDS in Indonesia was 61% women and 39% men (Simanungkalit, 2020). Despite recent scientific advancements and rigorous public health initiatives, the HIV/AIDS pandemic remains one of the deadliest diseases in human history (Nsuami *et al*., 2018; Fahriati *et al.*, 2021; Ratnaningtyas *et al.*, 2022). The advanced stage of HIV infection is known as AIDS, one of the signs of which is Opportunistic Infection, or OI (Nuwa, Kiik & Vanchapo, 2019; Astrini *et al.*, 2020; Indah *et al.*, 2022). Opportunistic infections in PLWHA are concomitant infections caused by a decrease in the body's immune system due to immunological disorders (Simanjuntak, 2020; Adane *et al.*, 2020; AIDS and Hepatitis C Professional Group, Society of Infectious Diseases, Chinese Medical Association; (Simanjuntak, 2020; Adane *et al*., 2020; Chinese CDC and Prevention., 2022). Attitude, according to Lapierre in Azwar, is a response (positive or negative) to a conditioned stimulus (Sianturi & Dorothea *et al*., 2020).

OI is an infection caused by a decrease in the immune system and occurs when microorganisms enter into the body (bacteria, fungi, viruses, etc.) (Simanungkalit, 2020). Opportunistic infections or OIs can cause death in >90% of AIDS patients (Supriyatni, *et al*., 2021). Decreased immunity, along with various microorganisms tend to be active, and can cause opportunistic infections. Management of OI is very dependent on the type of microorganism that causes OI to attack (Asdaq *et al.*, 2021; Maciel-Vergara, 2021; Zafar & Saier, 2021). There are several studies related to opportunistic infections in PLWHA, the research conducted (Ernawati, 2018). The Health Belief Model (HBM) theory explains that perceptions can be influenced subjectively based on the person's point of view, while the

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perceptions in HBM theory in cases of HIV and AIDS include Perceived susceptibility to contracting HIV and AIDS, perceptions of the severity of HIV and AIDS that can cause exclusion, loss, and even death, perceived benefit or positivity, and negative perceptions of the impact of HIV and AIDS, as well as perceptions of ability and confidence in carrying out preventive behaviors (Luginaah *et al.*, 2021; An, *et al.*, 2021). The objective of this study is to determine the perception and factors influencing prevention of opportunistic infections in People Living With HIV/AIDS (PLWHA).

METHODOLOGY

This study uses a quantitative approach. The research location was carried out at the General Hospital of South Tangerang City, amounted to 30 PLWHA. A non-random sampling technique with accidental sampling was used in this study. The inclusion criteria are: active members of the General Hospital of South Tangerang City, aged > 17 years, able to read, able to access health information systems (after socialization), willing to become respondents and access health information systems.

Data collection techniques in this study used secondary and primary data collected by distributing questionnaires to respondents. Furthermore, the analysis of the research data was carried out by means of univariate and bivariate analysis. The ethics code for this study is No. 235/KEPK/FKM-UNEJ/VIII/2022, dated August 1, 2022.

RESULTS

Table 1: Characteristics of Respondents and Other Variables

Univariate Analysis	Frequency	Percentage (%)
Age		
17-25 years	3	10.0
26-35 years	10	33.3
36-45 years	17	56.7
Education		
Basic education	4	13.3
Middle education	15	50.0
Higher education	11	36.7
Perceived Threat		
Low	14	46.7
High	16	53.3
Perceived Susceptibility		
Low	11	36.7
High	19	63.3
Perceived Severity		
Low	12	40.0
High	18	60.0
Perceived Benefit		
Low	11	36.7
High	19	63.3
Perceived Barrier		
Low	12	40.0
High	18	60.0
Perceived		
Low	13	43.3
High	17	56.7
Prevention Attitude of Opportunistic Infections		
Low	12	40.0
High	18	60.0
Total	**30**	**100**

Table 2: Analysis of the Relationship Between Perceived with Prevention Attitude of Opportunistic Infections

Perceived	Prevention attitude of opportunistic infections				Total		Correlation coefficient r ; *p*-value
	Low		High				
	N	%	N	%	N	%	
Perceived Threat							
Low	10	71.4	4	28.6	14	100	0.515;0.001
High	2	12.5	14	87.5	16	100	
Perceived Susceptibility							
Low	7	63.6	4	36.4	11	100	0.345; 0.044
High	5	26.3	14	73.7	19	100	
Perceived Severity							
Low	6	50.0	6	50.0	12	100	0.164; 0.361
High	6	33.3	12	66.7	18	100	
Perceived Benefit							
Low	5	45.5	6	54.5	11	100	0.084; 0.643
High	7	36.8	12	63.2	19	100	
Perceived Barrier							
Low	7	58.3	5	41.7	12	100	0.292; 0.094
High	5	27.8	13	72.2	18	100	
Perceived Belief							
Low	9	69.2	4	30.8	13	100	0.463; 0.004
High	3	17.6	14	82.4	17	100	

DISCUSSION

Analysis of the Relationship between Perceived Threat with Prevention attitude of opportunistic infections

The results of statistical tests using the Phi Correlation with a degree of confidence of 95% ($\alpha = 0.05$) can be concluded that H_0 is rejected, which means that there is a relationship between perceived threat with Prevention attitude of opportunistic infections among PLWHA in the General Hospital of South Tangerang City (p-value = 0.001 <0.05). The higher the perceived threat, the higher the chances of opportunistic infection prevention of the respondents in this study. In many resource-rich countries, the inverse is often a cause for low prevention uptake. Prevention fatigue, or safer sex fatigue, refers to the attitude that leads to HIV prevention messaging and programs (Chard, Metheny & Stephenson (2017).

This research is in line with a study conducted by Ernawati (2018). The results of his research show that there is a strong relationship with the direction of positive correlation (p-value = 0.000 and r = 0.947). Where the higher the Perceived threat has an impact on the high attitude of prevention of opportunistic infections in respondents in undergoing treatment to prevent comorbidities from attacking their bodies.

There is still a lot of negative stigma that appears and is felt by PLWHA from their surrounding environment, especially from people who do not know correctly about HIV and AIDS and how the disease is transmitted. The results of this study support the opinion that a neighbour is socially close to PLWHA, whose attitude is very important in relation to stigmatizing PLWHA. This stigma can then have an impact on PLWHA to undergo treatment for HIV and AIDS.

Analysis of the Relationship between Perceived susceptibility with Prevention Attitude of Opportunistic Infections

The results of statistical tests using the Phi Correlation with a degree of confidence of 95% ($\alpha = 0.05$) can be concluded that H_0 is rejected, which means that there is a relationship between perceived susceptibility with Prevention attitude of opportunistic infections among PLHIV in the General Hospital of South Tangerang City (p-value = 0.044 <0.05). The strength of the relationship that is owned is weak (r = 0.345) with a positive or unidirectional relationship, which means that the higher the Perceived susceptibility, the higher the attitude of opportunistic infection prevention possessed by the respondents in this study.

This study is in line with a study conducted by Ernawati, (2018). The results of his research indicate that there is a strong relationship, but the direction of the correlation is negative (*p*-value = 0.000 and *r*= -0.525). Where the higher the perceived susceptibility is inversely proportional to the high attitude of prevention of opportunistic infections in respondents in undergoing treatment to prevent comorbidities from attacking their bodies. HIV continues to be a significant public health concern and despite recent reductions in new HIV, certain demographic factor continue to affect perceived disease susceptibility disproportionality (Carter, 2020).

Analysis of the Correlation of Perceived Severity with the Prevention attitude of opportunistic infections

The results of statistical tests using the Phi Correlation with a degree of confidence of 95% (α = 0.05) can be concluded that H0 is rejected, which means that there is a perceived relationship of severity with the attitude of prevention of opportunistic infections among PLHIV in the General Hospital of South Tangerang City (*p*-value = 0.361 >0.05).

This research is not in line with a study conducted by Ernawati, (2018). The results of his research showed that there was a sufficient relationship in the positive correlation direction (*p*-value = 0.037 and *r* = 0.323). Where the higher the perceived severity is directly proportional to the high attitude of prevention of opportunistic infections in respondents undergoing treatment to prevent comorbidities from attacking their bodies. Providers reported mixed attitudes about Treatment as Prevention, although most were supportive (Bor *et al*., 2021).

Analysis of the Relationship between Perceived benefit with Prevention attitude of opportunistic infections

The results of statistical tests using the Phi Correlation with a degree of confidence of 95% (α = 0.05) can be concluded that H0 is rejected, which means that there is a relationship between perceived benefits with Prevention attitude of opportunistic infections among PLWHA in the General Hospital of South Tangerang City (*p*-value = 0.084 >0.05). So early initiation of Anti-Retroviral Therapy is recommended for PLHIV by physicians after positive test results since it confers a survival benefit and reduces the risk for opportunistic infections (Kibwengo, Kabalimu, & Sungwa, 2022).

The results of his research indicate that there is a sufficient relationship, but the direction of the correlation is negative (*p*-value = 0.000 and *r* =-0.670). Where the higher the perceived profit is inversely proportional to the high attitude of prevention of opportunistic infections in respondents in undergoing treatment to prevent comorbidities from attacking their bodies (Ernawati, 2018).

Analysis of the Relationship between Perceived Barrier with Prevention Attitude of Opportunistic Infections

The results of statistical tests using the Phi Correlation with a degree of confidence of 95% (α = 0.05) can be concluded that H0 is rejected, which means that there is a relationship between perceived barrier with Prevention attitude of opportunistic infections among PLHIV in the General Hospital of South Tangerang City (*p*-value = 0.094 >0.05).

The results of his research indicate that there is a strong relationship with the direction of positive correlation (*p*-value = 0.000 and *r* = 0.633). Where the higher the Perceived obstacles is directly proportional to the high attitude of prevention of opportunistic infections in respondents undergoing treatment to prevent comorbidities from attacking their bodies (Ernawati, 2018)

The result of this study is not in line with research conducted by Fahriati *et al.*, 2021, which states that experience and positive social support received by PLWHA will minimize the Perceived obstacles initially felt by PLWHA in responding to their treatment. Improving patient retention in HIV care and use of antiretroviral therapy (ART) are key steps to improving the HIV care continuum. However, contemporary quantitative data on barriers to care and treatment from population-based samples of persons poorly engaged in care are sparse (Dombrowski, 2015).

Analysis of the Relationship between Perceived self-efficacy with Prevention Attitude of Opportunistic Infections

The results of statistical tests using the Phi Correlation with a degree of confidence of 95% (α = 0.05) can be concluded that H0 is rejected, which means that there is a relationship between self-perception with Prevention attitude of opportunistic infections among PLWHA in the General Hospital of South Tangerang City (*p*-value = 0.004 <0.05). The strength of the relationship that is owned is moderate (*r* = 0.669) with a positive or unidirectional relationship, which

means that the higher the Perceived obstacles, the higher the attitude of opportunistic infection prevention possessed by the respondents in this study. Helpful provider interactions may promote greater adherence self-efficacy, which is associated with better adherence to medications. Studies suggest that improving provider interactions in clinical care, and future directions for clarifying inter-relationships among provider interactions, increases adherence self-efficacy, and medication adherence (Johnson *et al*., 2006).

The results of this research indicate that there is a very strong relationship with the direction of positive correlation (*p*-value = 0.000 and *r* = 0.898). Where the higher the Perceived obstacles is directly proportional to the high attitude of prevention of opportunistic infections in respondents undergoing treatment to prevent comorbidities from attacking their bodies ((Ernawati, 2018).

Respondents in this study have high self-confidence, which has an impact on attitudes toward preventing comorbid infections. The support received from peers, peer support groups, and health workers builds a sense of confidence in one's own abilities, regardless of one's inherent HIV status. This is related to high perceived self-efficacy and high attitudes shown by respondents in preventing opportunistic infections. This is also in line with Rosenstock's theory in Fahriati *et al*., (2021) where the Perceived one's ability will have an impact on the prevention of a disease and the prevention of the effects of a disease.

CONCLUSION

The results of the study obtained a relationship of perceived threat, perceived susceptibility, perceived severity, perceived benefit, perceived barrier, perceived self-efficacy with the prevention attitude of opportunistic infections. Perceived threat is a dominant factor related to the attitude of preventing Ois.

An interprofessional team of medical professionals, including an infectious disease specialist, pharmacist, internist, infection control specialty nurses, and specialists depending on the organ infected, is the best way to manage HIV patients. Stress must be given to medication adherence and ongoing monitoring of HIV-positive people. The value of educating patients so that they understand the significance of chemoprophylaxis to prevent opportunistic infections is necessary.

Conflict of Interest

The authors declare that they have no conflict of interests.

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