



Original Article

Stress influencing and coping strategies model among people living with HIV/AIDS: a mixed-methods

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ABSTRACT

Background: The influencing factor is stress, which has an impact on the low motivation of People Living With HIV/AIDS (PLWHA) to recover. By knowing these factors, interventions in controlling stress can be carried out well. A coping model is needed as a basis for developing stress control intervention plans for PLWHA using a family approach. As the closest environment to PLWHA, the family is very appropriate to control stress in PLWHA.

Purpose: This research aims to determine the factors that influence stress and models of coping strategies for stress in PLWHA.

Methods: This is a mixed-method study with an exploratory sequential approach. This research was conducted in Padang City at the quantitative research stage. The sample in this study was 38 PLWHA and nine respondents in a quantitative study (psychologists, counselors, HIV counselors, companions of PLWHA (husband/wife/children/parents), and PLWHA). Data collection was carried out through observation and deep interviews with the respondents.

Results: The statistical analyses revealed that factors influencing stress are self-control and discrimination. The results of the interviews obtained information that PLWHA needs to increase their faith in God, PLWHA does not want their status to be known by many people, and there is a lack of knowledge of PLWHA and the environment regarding HIV/AIDS transmission. The appropriate coping strategy model for PLHIV is to increase the PLWHA's faith, prevent the family from disclosing the PLWHA's disease status to the environment, and increase the knowledge of PLWHA and the social environment.

Conclusion: Self-control and discrimination influence stress. The stress control coping strategy model for PLWHA is formed from three pillars: faith/belief, health status, and knowledge.

INTRODUCTION

According to the World Health Organization, in 2020, 37.7 million people were living with HIV, 1.5 million people were newly infected with HIV, and 680 thousand deaths related to Acquired Immunodeficiency Syndrome (AIDS).^{1,2} In 2022, in Indonesia, HIV cases will reach 7,650 people, with the most significant number being 70.3% in the 25-49 year age group. These data show that many people of productive age experience HIV/AIDS.³ In West Sumatra in 2022, the number of HIV cases was found to be 520 cases. The district or city in the top ranking is Padang City, with 227 HIV cases found, followed by Bukittinggi City, with 64

cases. Pariaman is third with the number of cases found, namely 35 cases, and the remaining areas are in the West Sumatra province.⁴

Patients diagnosed with HIV/AIDS will experience psychosocial problems such as excessive worry about unpredictable illnesses, financial problems, prolonged grieving, frustration, depression, feelings of guilt, and fear of facing death. Significant changes or perceptions experienced by individuals can also cause stress. Life-threatening chronic conditions, poverty, societal stigma, and pressure to comply with the treatment process can also increase stress conditions in People Living With HIV/AIDS (PLWHA).³⁻⁵

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Previous research found that more than 50% of PLWHA experience high levels of stress.^{6,7} High stress in PLWHA hurts their motivation to comply with antiretroviral treatment (ART), causing irregularity in taking medication or drug withdrawal, resulting in the quality of life of PLWHA worse. Research finds that the factors that cause stress faced by PLWHA are social isolation, violence, stigma, and economic problems.⁸⁻¹⁰ However, no research has been found that discusses the relationship between stress in PLWHA and self-control and health conditions.

This condition shows the need for appropriate strategies to deal with stress in PLWHA. In previous research, there have been coping models for controlling stress in PLWHA: problem-focused coping, emotion-focused coping, support-seeking coping, avoidance coping, and religious/spiritual coping.^{10,11} However, existing models still focus on PLWHA, while in this research, the stress coping model used is a stress control coping model for PLWHA with a family approach. The high level of stress in PLWHA, which impacts their motivation to undergo treatment, requires appropriate strategies to overcome it. The most appropriate method for reducing stress in PLWHA is a family approach.^{12,13} A comprehensive family approach involving all family members in the care process can create a supportive environment for PLWHA, help manage stress, and improve their quality of life. This research is novel in examining self-control variables, health status, and a stress-coping model that has never been carried out in previous research. This research aims to find out the factors that influence stress in PLWHA and to form a model of coping with stress in PLWHA using a family approach.

METHOD

Study Design

This is an exploratory sequential mixed-method study.^{14,15}

Setting and Respondent

This research was conducted in Padang City from June to December 2023. The population in this quantitative study was all PLWHA in Padang City registered at the health center Across Padang, totaling 38 people. The entire population was sampled in this study using the total sampling method, so the sample of this research was 38 people. The inclusion criteria in this study were PLWHA, who could write and read, were conscious and could communicate well. The exclusion criteria in this study were PLWHA, who were unwilling to fill out informed consent.

In a qualitative study, nine informants were included (psychologists, counselors, HIV counselors, companions of PLWHA (husband/wife/children/parents), and PLWHA). Data was taken using the snowball sampling method. Snowball sampling is a non-probability sampling method

involving new units recruited by other units to be part of the sample.¹⁵ Data collection was carried out until the data was saturated. Qualitative data was processed using source triangulation.

Variables, Instruments, and Measurements

In the quantitative stage, the variables studied are health conditions, discrimination, and self-control. The instrument used in this research was a questionnaire. The stress variable uses the stress scale 42 questionnaire, which consists of 14 questions. The discrimination variable is assessed from 10 questions, the self-control variable from 12 questions, and the health status variable from 9. Data was collected primarily using in-depth interviews conducted with PLWHA.

In the qualitative stage, the research was conducted to ask for information and input from experts regarding controlling risk factors that were known from the first research stage. Researchers conducted interviews using interview guidelines. The items that become probing for this stage are materials that families must understand in controlling correlated risk factors according to the first research results and the appropriate media in providing this information. There are ten main questions in the interview guide.

Statistical Analysis

In a quantitative study, univariate and bivariate analyses determine the factors influencing stress in PLWHA. In a qualitative study, all information obtained is narrated in writing and concluded.

Ethical Consideration

Research ethical approval was obtained from the Ethics Commission of the Faculty of Medicine, Andalas University (177/UN.16.2/KEP-FK/2023).

RESULTS

Characteristic Respondents

The characteristics of respondents in the quantitative study show that the majority of the respondents were Female (89.4%), aged 26-35 years old (39.4%), had a high school education (52.6%), and working (66.8%) (Table 1). Meanwhile, in qualitative research, the informant's Psychologists have expertise in mental health and stress science, two counselors who are experts in clinical psychology, two Companions of PLWHA (mother and wife), and four PLWHA, which represent adherent ART treatment and are not adherent. The characteristics of the informants in this research are shown in Table 2.

Stress Analysis in PLWHA

Table 3 shows that the majority of PLWHA have high stress (84%); apart from stress, PLWHA still lack good

self-control (73%), and PLWHA also feels they are discriminated against (86.8%). However, in terms of health status, the majority of PLWHA (92%) feel they have good health status. PLWHA who are in good health still feel stressed, have poor self-control, and feel they are being discriminated against. The statistical analysis shows that self-control and discrimination are risk factors for stress in PLWHA ($p < 0.05$). As many as 96.4% and 90.9% of PLWHA who have negative self-control and discrimination experience stress. In contrast to self-control and discrimination variables, health condition variables are not a risk factor for stress (Table 4).

Table 1. Characteristic PLWHA Respondents (n=38)

Characteristic	Result
Sex	
Female	34 (89.4%)
Male	4 (10.6%)
Age, yo	
17-25	13 (34.2%)
26-35	15 (39.4%)
36-45	8 (26.5%)
46-55	1 (13.1%)
56-65	1 (13.1%)
Educations	
Junior High School	1 (2.6%)
Senior High School	20 (52.6%)
College	17 (44.8%)
Employment Status	
Work	25 (66.8%)
Doesn't Work	13 (34.2%)

Table 2. Characteristic of Informant (n=9)

Informant	Characteristic
Informant-1 Psychologists	A male, 45 years old, has expertise in mental health and stress science
Informant-2 Counselor	A female, 36 years old, has knowledge related to stress and clinical psychology
Informant-3 HIV counselors	A female, 56 years old, HIV counselor at the Provincial General Hospital
Informant-4 Companions of PLWHA-1	A female, 42 years old, the patient's wife
Informant-5 Companions of PLWHA-2	A female, 68 years old, the patient's mother
Informant-6 PLWHA-1	A male, 25 years old, with HIV, following ART treatment
Informant-7 PLWHA-2	A male, 40 years old, with HIV, following ART treatment
Informant-8 PLWHA-3	A female, 32 years old, with HIV, does not following ART treatment
Informant-9 PLWHA-4	A male, 35 years old, with HIV, does not following ART treatment

Table 3. Stress Analysis, Health Conditions, Self-control and Discrimination in PLWHA (n=38)

Variable	Result
Stress	
High	32 (84%)
Moderate	6 (16%)
Health Condition	
Good	35 (92%)
Unhealthy	3 (8%)
Self-Control	
Positive	10 (26%)
Negative	28 (73%)
Discrimination	
Yes	33 (87%)
No	5 (13%)

Table 4. Crosstabulation Health Conditions, Self-control and Discrimination with Stress in PLWHA (n=38)

Variable	Stress		p-value
	Moderate	High	
Health Condition			
Good	5 (14.3%)	30 (85.7%)	0.065
Unhealthy	1 (33.3%)	2 (66.7%)	
Self-Control			
Positive	5 (50%)	5 (50%)	0.03
Negative	1 (3.6%)	27 (96.4%)	
Discrimination			
Yes	3 (9.1%)	30 (90.9%)	0.024
No	3 (60%)	2 (40%)	

The qualitative study results that the information was obtained that PLWHA still cannot accept the disease they suffer from, feel inferior, and are afraid that other people will find out about their disease status and feel that the environment cannot accept the disease they suffer. Among them are the following informant's statements:

"...Why am I the one who gets it, even though the others take longer, more often... sometimes I have a hard time accepting..." (Informant 5)

"... well what else, at first it was difficult... not just me, everyone else will not be able to accept this disease..." (Informant 6)

"... I don't dare to meet people who know my status, I think they will also avoid me..." (Informant 9)

"...now that my friend is no longer there, where is there anyone who wants to be close to me..." (informant 8)

"...that's why I was too lazy to check, so now everyone knows...if I could move, I would really like to..." (Informant 7)

"...he doesn't want to be taken out..." (Informant 4)

According to psychologists, counselors, and HIV counselors, the right solution to overcoming the factors that influence stress in PLHIV is the need to increase PLWHA's faith in their God so that PLWHA can accept the disease they suffer sincerely; the disease they suffer does not need to be spread widely, the environment feels fear of being infected makes it challenging to accept PLWHA. Among them are the following informant's statements:

"...This is the key to be sincere, if you are sincere your heart will be calm...this disease is a disgrace that should not be exposed..." (Informant 2)

"...strengthen your faith, surrender is the key to emotional calm..." (Informant 1)

"...of course, because not all of them have that understanding, this is scary and disturbing...this disease is not easily infected, so it doesn't need to be spread widely in the social environment..." (Informant 3)

The results of in-depth interviews and focus group discussions resulted in conclusions about the causes of stress in PLWH and solutions that can be implemented to overcome this stress, which can be seen in Table 5.

Coping Strategies Model in PLWHA

A stress-coping strategy model for PLWHA was formulated using the Analysis, Design, Development, Intervention, and Evaluation (ADDIE) model. Researchers and experts conducted a study regarding the design of stress-coping strategy models for PLWHA. Based on the findings, it was concluded that three pillars—faith/belief, knowledge, and health status — were the main factors in stress-coping strategies for PLWHA (Figure 1).

The stress coping strategy model for PLWHA explains that health conditions, self-control, and discrimination factors influence the level of stress felt by PLWHA. Therefore, coping with stress needs to be done with a family approach through 3 pillars: increasing knowledge, strengthening faith/trust, and maintaining health status to stay healthy. In the health pillar, families and PLWHA must receive education regarding what HIV/AIDS is, how it is transmitted, and routine ART. In the pillar of faith, the family invites and facilitates PLWHA in carrying out worship according to their beliefs. By increasing the faith of PLHAs, PLHAs will be willing to accept the disease they suffer. In the pillar of health status, the family supports a series of treatments for PLWHA and maintains the privacy of PLWHA so that they do not spread the disease suffered by PLHIV to their social environment.

Table 4. Interview and Focus Group Discussion Matrix in Qualitative Study

In-depth interviews	Focus Group Discussion	Conclusion	Solution
Surrender to Allah, do more dhikr, pray, and practice according to respective beliefs.	Try to be sincere and surrender because we have accepted this disease.	PLWHA increases their faith in God Almighty.	They are inviting PLWHA to strengthen their faith.
Families do not have to indulge in illnesses that PLWHA is suffering.	If they feel that people know their status, PLWHA becomes afraid and feels inferior.	PLWHA wants its status to be known by only a few people.	Do not reveal PLWHA status.
PLWHA feels that the environment cannot accept them and feels that their disease is a disease that is very feared and deadly; the environment around PLWHA is afraid of contracting HIV.	PLWHA feels very punished because the environment makes them suffer from very embarrassing and cursed diseases.	Lack of knowledge of PLWHA and the environment regarding HIV/AIDS transmission.	Increase knowledge, attitudes, and behavior of PLWHA and the environment (family) regarding HIV/AIDS transmission.

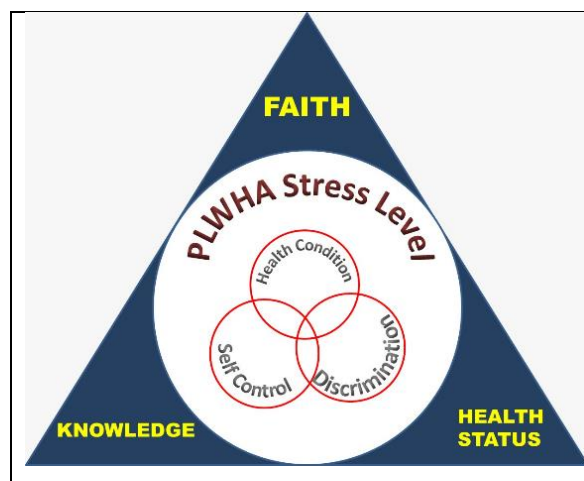


Figure 1. Model of Stress Coping Strategies for People with HIV Using a Family-Based Approach. 1) Discrimination, health conditions, and self-control are three interrelated things, as seen from the symbol of 3 red-lined circles making a wedge into each other; 2) The more vital the intersection of the three circles in point 1 (Discrimination, health conditions, and self-control), the higher the level of stress experienced by PLWHA; this can be seen from the prominent white circle symbol that covers the three small circles; 3) Stress in PLWHA can be controlled by applying three pillars (knowledge, faith/belief, and health status), which must be balanced, as seen in the dark blue equilateral triangle image, this color symbolizes being able to dim the white stress level. The symbol of an equilateral triangle floating on these three pillars must be balanced to control stress in PLWHA.

DISCUSSION

Stress in PLWHA

This research found that the incidence of stress, the ability of PLWHA to self-control, and discrimination in PLWHA are high. Meanwhile, the health condition of PLWHA is still quite good. This study's results also show a significant relationship between self-control and discrimination and the incidence of stress in PLWHA. Researchers assume that there is a significant relationship between the stress experienced by PLWHA and health conditions, self-control, and discrimination. Chronic stress worsens health outcomes through reduced immune function and increased susceptibility to infection. Strong self-control is thought to help individuals manage stress better and minimize its negative impacts. In addition, discrimination and social stigma are believed to be additional sources of stress that can worsen the physical and mental health conditions of PLWHA, as well as reduce the effectiveness of their self-control.^{16,17}

Stress in PLWHA has a significant impact on health conditions, self-control, and experiences of discrimination. The Stress and Adaptation Theory suggests that chronic stress can worsen health conditions through reduced immune function, while good self-control can help manage stress more effectively.¹⁸ Coping Theory highlights that effective coping strategies can help overcome physical and emotional symptoms, and social support can mitigate the impact of discrimination.¹⁹ Minority Stress Theory reveals that stigma and discrimination increase the risk of mental health problems, which in turn affects physical health.¹⁶ Social Influence Theory and Self-Determination Theory emphasize the importance of social support and fulfilling basic psychological needs for the well-being of PLWHA.²⁰ Social Cognitive Theory suggests strong self-efficacy can improve self-control and health management, although discrimination can undermine self-efficacy.^{21,22} The Biopsychosocial Model integrates biological, psychological, and social factors, highlighting that stress caused by discrimination can affect overall well-being.^{23,24} Previous research also found that risk factors for stressful events in PLWHA were physical illnesses (cardiovascular disease, HIV/AIDS, asthma, and autoimmune diseases), an unacceptable environment, and social and mental conditions of PLWHA.^{9,18,25}

Coping Strategies Model in PLWHA

In-depth interviews and Focus Group Discussions conducted with psychologists, counseling experts, HIV counselors, companions of PLWHA (husbands/wives/children/parents), and PLWHA obtained information that stress incidents in PLWHA were caused by PLWHA not being able to accept the disease they were suffering. They are embarrassed and feel shunned by PLWHA because their status is known to many people, and the low level of

knowledge, attitudes, and behavior of PLWHA and the environment towards HIV/AIDS. The right solution as a form of coping with stress for PLWHA is the need to increase faith for PLWHA in their God so that PLWHA can accept the disease they are suffering from sincerely; the disease they suffer does not need to be spread widely, the environment is afraid of being infected so it is challenging to accept PLWHA.

The stress coping strategy model for people with HIV with a family-based approach is to increase faith, not spread health status, and not discriminate. Researchers assume that faith can reduce stress in PLWHA because it provides spiritual support, which can help them find meaning and purpose in life even when facing illness. Faith also often provides a supportive community so PLWHA feels more accepted and less isolated. Religious practices such as prayer and meditation can provide a sense of calm and peace, which helps reduce stress levels. In addition, the belief that a more fantastic power controls life can provide hope and inner calm, thereby helping PLWHA manage the emotional stress they experience. Closing the disease status of PLWHA will be able to reduce stress for PLWHA because by maintaining the confidentiality of their HIV status, PLWHA can avoid social stigma and discrimination, which is often a source of great stress. Closing illness status can also provide a greater sense of security and control over their personal information, thereby reducing fears of social rejection and unfair treatment. In addition, PLWHA who choose to close their status may feel calmer and better able to live their daily lives without constant worry about adverse reactions from their surroundings.^{10,26}

The stress coping model theory refers to individuals' cognitive and behavioral processes to manage internal or external demands that exceed their resources. This Theory divides coping into two main categories: problem-focused coping, in which individuals attempt to overcome or modify the source of stress, and emotion-focused coping, which aims to regulate emotional responses to stress. Coping is a dynamic mechanism that adapts based on situations and environments and is influenced by social support, beliefs, and individual experiences.¹⁹ Researchers have not found similar research regarding the stress-coping model for PLWHA with a family approach. However, previous research on stress coping models generally provides information that emotional and social support and psychological and physical well-being are good stress coping.²⁶⁻²⁸

CONCLUSIONS AND RECOMMENDATION

The model of coping with stress in PLWHA with a family approach explains that the pillars that can reduce or control stress in PLWHA are family involvement in helping PLWHA to increase their faith/confidence, full family in-

volvement in maintaining the privacy of PLWHA by not revealing the illnesses suffered by PLWHA and by increasing PLWHA's knowledge and family related to HIV/AIDS, especially the transmission of HIV/AIDS. Understanding HIV/AIDS can change the attitudes and behavior of families and PLWHA in the social environment. The family understands that social contact with PLWHA will not transmit HIV. Factors that influence the occurrence of stress in PLWHA are self-control and discrimination. This model is hoped to be developed through modules, guides, and pocketbooks. This module is for health workers or counselors to provide material to families as companions for PLWHA. A guide is needed for families/companions of PLWHA, and a pocketbook is needed for PLWHA to control themselves.

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