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RELATIONSHIP BETWEEN LEVELS OF BURNOUT WITH LEVELS OF DEPRESSION IN CAREGIVER HIV/AIDS PATIENTS AT DR. KARIADI HOSPITAL SEMARANG

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ABSTRACT

Background: Burnout and depression are psychological problems often experienced by caregivers of HIV/AIDS patients. Burnout occurs due to ongoing emotional and physical stress, while depression can arise due to high care burden. **Objective:** This study aims to assess the relationship between the level of burnout and the level of depression in caregivers of HIV/AIDS patients at Dr. Kariadi Hospital Semarang. **Methods**: This study was a cross-sectional study involving 83 caregivers of HIV/AIDS patients. The level of burnout was measured using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), while the level of depression was assessed using the Montgomery-Åsberg Depression Rating Scale (MADRS). Data were analyzed using Spearman correlation test and Chi-square test to assess the relationship between burnout and depression level. **Results**: The majority of caregivers experienced burnout at a moderate level (43.6%), while severe burnout was found in 16.7% of subjects. Most subjects had mild to moderate depression (89.2%). Statistical analysis showed a significant relationship between the level of burnout and the level of depression ($p<0.001$). The dimensions of emotional exhaustion ($r=0.69$, $p=0.001$) and depersonalization ($r=0.68$, $p=0.001$) were strongly positively associated with depression, while personal accomplishment was negatively associated with depression ($r=-0.67$, $p<0.001$). **Conclusion**: Burnout has a significant relationship with the level of depression in caregivers of HIV/AIDS patients. The higher the burnout, the greater the risk of caregivers experiencing depression. Psychosocial intervention strategies are needed to reduce the risk of burnout and improve the psychological well-being of caregivers.

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INTRODUCTION

HIV/AIDS remains a significant global health challenge, affecting millions of people and requiring long-term care and support. According to the World Health Organization (WHO), approximately 39 million people worldwide are living with HIV/AIDS by the end of 2022, with more than 1.3 million new infections recorded in that year[1]. Advances in antiretroviral therapy (ART) have significantly improved life expectancy and disease management, but the burden of caring for HIV/AIDS patients remains large[2]. Caregivers, including family members and healthcare providers, play a critical role in ensuring adherence to treatment, managing opportunistic infections, and providing emotional support to patients[3]. However, the process of caring for patients is physically and emotionally demanding. Burnout syndrome, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, is prevalent among caregivers due to prolonged exposure to stress[4]. In addition, caregivers of HIV/AIDS patients have a higher risk of experiencing depressive symptoms, which is due to the chronic nature of the disease, social stigma, and financial pressures[5]. Research shows that burnout is a major risk factor for depression, which can jeopardize the mental health of caregivers and ultimately affect the quality of care provided to patients[6]. In Indonesia,

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the prevalence of HIV/AIDS continues to rise, with Central Java ranking sixth in the number of reported cases[7]. Despite growing recognition of the psychological challenges faced by caregivers, research on levels of burnout and depression among caregivers of HIV/AIDS patients is still limited, especially in health services in Indonesia. Understanding these relationships is critical to developing targeted interventions to support caregiver well-being and improve patient treatment outcomes.

Although previous studies have shown that caregiving burden contributes to burnout and depression, there is limited data measuring the correlation among caregivers of HIV/AIDS patients in Indonesia. Most existing studies have focused on the general caregiver population or caregivers of other chronic diseases such as dementia and cancer[8]. The impact of specific factors such as emotional exhaustion, depersonalization, and personal achievement on the severity of depression remains unexplored[9]. In addition, individual characteristics such as age, gender and comorbidities may influence the risk of burnout and depression, yet their role in this population is not well understood[10]. Investigating these factors will help fill the knowledge gap and provide a basis for developing mental health interventions tailored to HIV/AIDS caregivers.

Recent research has highlighted that burnout significantly predicts depression and anxiety among individuals involved in HIV care, underscoring the importance of addressing mental health in this context[11]. This study aims to assess the relationship between burnout and depression in caregivers of HIV/AIDS patients at Dr. Kariadi Hospital Semarang. Specifically, this study aims to determine the prevalence of burnout and depression in this caregiver population, analyze the correlation between burnout levels (emotional exhaustion, depersonalization, and personal accomplishment) and depression severity, and identify demographic and clinical factors such as age, gender, and comorbidities that influence this relationship. By achieving these objectives, this study will contribute to a better understanding of the mental health of caregivers in HIV/AIDS care, providing valuable insights for developing targeted support systems and interventions to improve caregiver well-being and quality of patient care.

METHODS

This cross-sectional study was conducted at Dr. Kariadi Hospital Semarang from January to February 2025. Ethical approval was obtained from the Health Research Ethics Committee of the Faculty of Medicine, Diponegoro University (668/EC/KEPK/FK-UNDIP/XII/2024), and all participants gave informed consent in accordance with the principles of the Declaration of Helsinki. This study involved caregivers of HIV/AIDS patients who met the inclusion criteria and were actively involved in providing care in the inpatient and outpatient departments of the hospital. Inclusion criteria were caregivers aged ≥18 years, currently providing care for at least six months, and willing to participate in the study by signing an informed consent. Exclusion criteria included caregivers with pre-existing psychiatric disorders and cognitive impairment that could interfere with survey completion.

Data were collected using self-reported questionnaires and structured interviews. Burnout levels were assessed using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), which evaluates three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. Depressive symptoms were measured using the Montgomery-Åsberg Depression Rating Scale (MADRS), a validated tool for assessing depression severity. Additional demographic and clinical variables, including age, gender, duration of caregiving, presence of comorbidities (hypertension, diabetes mellitus), and psychosocial stressors, were extracted from participants records and interviews.

The main variables were burnout scores (MBI-HSS) and depression scores (MADRS). The primary outcome was the correlation between burnout severity and depression. Covariates included age, gender, duration of caregiving, and comorbidities. Descriptive statistics summarized baseline characteristics, and Spearman correlations were used to assess the relationship between burnout dimensions and depression scores. Multivariate linear regression was performed to adjust for potential confounding. Subgroup analysis categorized caregivers by burnout severity (low, moderate, high) and depression severity (mild, moderate, severe).

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Ethical considerations included participant confidentiality, safe handling of data, and anonymous reporting of findings. The primary objective was to determine the correlation between burnout and depression among caregivers of HIV/AIDS patients, focusing on understanding the impact of emotional exhaustion, depersonalization, and personal accomplishment on mental health outcomes.

RESULT

Study Population and Baseline Characteristics

This study involved 83 caregivers of HIV/AIDS patients at Dr. Kariadi Hospital Semarang. Regarding educational background, 68.7% of caregivers had a high school education or lower, while 31.4% had a university degree. Comorbidities were present in 21.7% of caregivers, with 14 caregivers (16.9%) diagnosed with hypertension and 4 caregivers (4.8%) diagnosed with diabetes mellitus.

Table 1. Demographic Characteristics of Research Subjects

Variables	Frequency	%	Average± SD	Median (min - max)
Age (years)			39.19± 8.99	38 (23 - 61)
Maintenance Duration (month)			16.89± 7.18	16 (7 - 36)
Gender				
Male	47	56.6		
Female	36	43.4		
Education				
Elementary School	13	15.7		
Junior High School	23	27.7		
Senior High School	19	22.9		
Vocational High School	2	2.4		
Bachelor	26	31.4		
History of Chronic Disease				
None	65	78.3		
Hypertension	14	16.9		
Diabetes Mellitus	4	4.8		
Factors Causing Psychosocial Stress				
None	78	94.0		
Available	5	6.0		

Burnout Level

Burnout was assessed using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), with mean scores for emotional exhaustion at 19.82 (SD : 6.43), depersonalization at 8.21 (SD: 4.12), and personal accomplishment at 35.71 (SD: 5.89).

Table 2. Distribution of *Burnout* Level of Research Subjects

Burnout Level (n=78)	n	%
No burnout	0	00.0
Low	31	37.3
Medium	34	43.6
High	13	16.7
Total	78	100

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Level of Depression

The severity of depression was measured using the Montgomery-Åsberg Depression Rating Scale (MADRS) with a mean score of 17.84 (SD: 5.71), ranging from 4 to 35.

Table 3. Distribution of Depression Level of Research Subjects

Depression Level (n=83)	n	%
Not Depression	4	4.8
Mild	34	41.0
Medium	40	48.2
Severe	5	6.0
Total	83	100

Correlation Between Burnout and Depression

Spearman correlation analysis showed a strong positive correlation between emotional exhaustion and depression (r = 0.69, p = 0.001), as well as between depersonalization and depression (r = 0.68, p = 0.001). In contrast, personal accomplishment had a strong negative correlation with depression (r = -0.67, p = 0.001), indicating that caregivers who had higher personal accomplishment experienced lower depression severity. A chi-square test showed a significant association between burnout severity and depression severity (p < 0.001). Among caregivers with high burnout, 30.8% had severe depression, while 88.2% of those with moderate burnout had moderate depression

Factors Affecting Depression Severity

Bivariate analysis identified several significant predictors of depression severity, including hypertension (p = 0.03), diabetes mellitus (p = 0.004), psychosocial stressors (p < 0.001), and longer duration of caregiving (p = 0.024). However, age, gender, and educational background were not significantly associated with depression severity. Similarly, the level of burnout was significantly associated with duration of caregiving (p = 0.012), presence of chronic illness (hypertension/diabetes) (p = 0.009), and psychosocial stressors (p < 0.001).

Analysis of the Relationship between Burnout Level and Depression Level in Caregivers

The researcher used the Chi-square test, to test the relationship between ordinal variables without the requirement of normality. The results in Table 4 show p = 0.001, which means there is a significant relationship between burnout and depression levels in caregivers of HIV/AIDS patients (p < 0.05).

Table 4. Relationship between *Burnout* Level and Depression Level

***Burnout* Level**	**Depression Level**					***P***
	Not Depressed n=4(5.1%)	**Mild** n=31(39.7%)	**Medium** n=38(48.7%)	**Severe** n=5(6.4%)	**Total** n=78(100%)	
Low	4 (12.9%)	26(83.9%)	0 (0%)	1(3.25)	31(37.3%)	
Medium	0(0%)	4(11.8%)	30(88.2%)	0(0%)	34(41.0%)	0.001*
High	0(0%)	1(7.7%)	8(61.5%)	4(30.8%)	13(15.7%)	

* *Chi Square* test, significant p < 0.05

Analysis of the Relationship between Burnout Dimension Level and Depression Level in HIV/AIDS Patient Caregiver

Kolmogorov-Smirnov test showed the data was not normal, so Spearman correlation was used. As a result, emotional exhaustion (r = 0.69, p = 0.001) and depersonalization (r = 0.68, p = 0.001) had strong positive correlations with depression, while personal accomplishment showed a strong negative correlation (r = -0.67, p = 0.001).

Table 5. Correlation of *Burnout* Dimensions with Depression (MADRS Score)

Burnout Dimension (MBI-HSS Score)	MADRS Score
Emotional Exhaustion	0.69
Depersonalization	0.68
Personal Accomplishment	-0.67

n=83, p=0.001, *Spearman Correlation Test

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CONCLUSION

This study investigated the relationship between burnout and depression in caregivers of HIV/AIDS patients at Dr. Sardjito Hospital. Suggesting that caregivers who felt more effective in their role showed lower depressive symptoms. Additional analyses identified age, duration of caregiving, and the presence of chronic diseases such as hypertension and diabetes mellitus as significant factors influencing the severity of burnout and depression.

This study has several strengths. This study is one of the first in Indonesia to measure burnout and depression among caregivers of HIV/AIDS patients. The use of validated psychological scales (MBI-HSS and MADRS) ensured robust measurement of mental health outcomes. In addition, the clustering of burnout into three dimensions (emotional exhaustion, depersonalization, and personal accomplishment) provided deeper insights into how different aspects of caregiver stress contribute to depression. The study also included important demographic and clinical factors, such as duration of caregiving and comorbidities, to provide a comprehensive picture of caregiver burden. However, there are some limitations that should be noted. The study relied on self-reported questionnaires, which may introduce response bias. The cross-sectional design prevents inferences about causal relationships, thus limiting the ability to determine whether burnout directly causes depression or vice versa. The sample size (n=83), although adequate, may not be generalizable to all caregiver populations, especially in different healthcare settings. In addition, stress factors outside of caregiving, such as financial burden and social stigma, were not extensively analyzed, which might influence the level of depression. Future research with longitudinal designs and larger, more diverse samples may strengthen these findings.

The findings of this study are in line with research by Koutsimani et al. who reported a strong correlation between burnout and depression in caregivers, especially in healthcare settings[12]. Similarly, Mohamad et al. found that caregivers of chronically ill patients showed high levels of burnout and depressive symptoms, emphasizing the importance of psychological support interventions[13]. However, our findings differ from Alenezi et al. who reported no significant relationship between personal achievement and depression in caregivers of children with autism[14]. This difference may be due to differences in the caregiving role, where HIV/AIDS caregivers face unique challenges, including stigma and long-term emotional strain.

The strong correlation between burnout and depression may be explained by the chronic stress associated with treatment. Emotional exhaustion and depersonalization most likely arise due to continuous exposure to patient suffering, lack of social support, and limited time off. The significant negative correlation between personal accomplishment and depression suggests that caregivers who find their role meaningful are more resilient to psychological distress. In addition, comorbid conditions such as hypertension and diabetes mellitus also play a role in the mental health of caregivers. Chronic illnesses are known to exacerbate psychological stress and may contribute to higher depression scores. In addition, the presence of psychosocial stressors, such as financial pressure and lack of formal training in caregiving, may have increased the emotional burden on caregivers.

These findings highlight the need for targeted mental health interventions for caregivers of HIV/AIDS patients. Incorporating psychological support programs, stress management training, and peer support groups into the support framework for caregivers may help reduce burnout and depression. Routine screening for burnout and depression symptoms should be implemented in health facilities to identify caregivers at risk and provide early intervention. Future research should focus on longitudinal studies to assess how burnout and depression develop over time in caregivers, especially in relation to duration of caregiving and patient health status. In addition, exploring coping mechanisms and resilience factors among caregivers may provide insights into protective strategies that can enhance well-being. Finally, integrating socioeconomic factors and qualitative perspectives may provide a more thorough understanding of caregiver burden and guide the development of comprehensive caregiver support policies.

The results of this study showed a significant relationship between the level of burnout and the level of depression in caregivers of HIV/AIDS patients at Dr. Kariadi Hospital Semarang. The distribution of burnout levels varied, with 37.3% of caregivers experiencing low burnout, 43.6% moderate burnout, and 16.7% severe burnout. Variations in distribution

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were also seen in the dimensions of burnout, namely emotional exhaustion, depersonalization, and personal accomplishment. In addition, the level of depression in caregivers also varied, with 4.8% having no depression, 41.0% having mild depression, 48.2% moderate depression, and 6.0% severe depression. Further analysis revealed that each dimension of burnout-emotional exhaustion, depersonalization, and personal accomplishment-had a significant relationship with the level of depression in caregivers of HIV/AIDS patients.

ETHICAL APPROVAL

Ethical clearance has been issued with No. 668/EC/KEPK/FK-UNDIP/XII/2024.

CONFLICTS OF INTEREST

No potential conflicts of interest are reported by the author.

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AUTHOR CONTRIBUTIONS

Conceptualization: Hadi, Muchlis; Methodology: Hadi, Alifiati, Muchlis; Data Analysis: Hadi; Data Collection, Hadi; Source of Funds: Hadi; Wrote Original Draft: Hadi; Review and Edit: Hadi; Supervision: Hadi, Alifiati, Muchlis.

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