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The Relationship of Length of Treatment with the Stress Level of Surgical Inpatients in Dr. Rasidin Padang

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ABSTRACT

Length of hospital stay is a key factor influencing patient stress, especially among individuals in surgical wards who face both physical and psychological challenges. Unmanaged stress may delay recovery and reduce quality of life. This study aimed to examine the relationship between length of stay and stress levels among patients in the surgical ward of Dr. Rasidin Padang Hospital. A quantitative approach with a cross-sectional design was used. The sample consisted of 72 patients selected through purposive sampling based on inclusion criteria. Data were collected using the DASS-21 stress questionnaire and an observation sheet to record length of stay. Univariate analysis described the frequency distribution, while bivariate analysis using the Chi-square test assessed the relationship between variables. Results showed that most respondents had a length of stay of 5 days (58.3%) and experienced moderate stress levels (45.8%). The bivariate analysis indicated a significant relationship between length of stay and stress levels (p-value = 0.002), with longer hospitalization associated with higher stress. In conclusion, length of treatment is significantly related to patient stress levels. These findings highlight the importance of implementing stress management interventions, including patient education, psychological support, and regular mental health monitoring, to improve care quality and promote faster recovery.

Keywords: *Stress, Long Treatment, Surgical Ward*

INTRODUCTION

Health is a condition that includes physical, mental, and social aspects. In health services, the hospital not only plays a role in handling the patient's physical condition, but also must pay attention to the patient's psychological condition during treatment. Inpatients often experience

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environmental changes, activity limitations, dependence on health workers, and uncertainty about the condition of the disease experienced. These conditions can trigger the emergence of stress during the treatment period (SA'diah, 2025).

Stress in hospitalized patients is a fairly frequent problem and can affect the healing process. The World Health Organization (WHO) states that psychological disorders in patients undergoing hospital treatment continue to increase, especially in patients with chronic diseases and invasive measures. Some studies show that about 30-60% of hospitalized patients experience stress and anxiety during the treatment period. In surgical patients, the prevalence of stress tends to be higher due to fear of surgery, postoperative pain, and uncertainty of treatment results (Tino et al., 2022).

Stress experienced by patients can have an impact on physiological and psychological conditions. Patients who experience stress tend to experience sleep disturbances, decreased appetite, anxiety, and decreased motivation in undergoing treatment. These conditions can cause non-compliance with therapy, slow down the recovery process, increase the length of hospitalization, and even worsen the patient's health condition (Zamri, 2023). Therefore, the identification of factors related to patient stress levels is important in efforts to improve the quality of Nursing Services.

One of the factors suspected to be related to the patient's stress level is the length of the day of hospitalization. The longer the patient undergoes treatment, the more likely the patient is to experience burnout, loss of comfort, limited social interaction, and concern about the condition of the disease and the cost of treatment. The condition can increase the patient's psychological distress during treatment in the hospital (Jannah et al., 2024). In addition, patients with a long duration of treatment are also likely to experience mood swings such as irritability, anxiety, and despair that have the potential to develop into stress.

Several previous studies have examined factors that influence inpatient stress, such as social support (Andini, 2022), spiritual needs (Pratama, 2021), and the care environment (Lestari, 2023). Saputra's research (2024) also found a relationship between the length of the day of care and the psychological condition of patients. However, studies specifically analyzing the relationship of length of stay with stress levels in surgical ward patients are limited. Most previous studies have focused on external factors and have not specifically examined surgical patients who have higher levels of stress due to surgery and post-surgical recovery process.

Research gap in this study lies in the still limited research that examines the relationship of length of hospitalization with stress levels in surgical ward patients specifically, especially in regional hospitals. In fact, surgical patients have different psychological characteristics than other inpatients because they face invasive procedures, postoperative pain, and a relatively longer recovery period. These conditions make surgical patients a vulnerable group to experience stress during treatment.

The novelty of this study lies in the focus of the study that specifically analyzed the relationship of length of hospitalization with stress levels in patients in the surgical ward at Dr.

Rasidin Padang. This study not only assesses the general psychological condition of patients, but also relates it to the duration of treatment as a clinical factor that affects the success of the patient's recovery. In addition, this study was conducted in the local context of regional hospitals that have different patient characteristics and service systems with large hospitals, so that the results are expected to provide a more contextual picture in the development of Nursing Services.

The results of a preliminary survey conducted in the surgical ward of the Dr. Rasidin Padang pointed out that some patients who underwent treatment for more than five days complained of saturation, sleep disturbances, anxiety, and discomfort during treatment. The patient also admitted that he was worried about his health condition and the healing process. Meanwhile, patients with a shorter length of stay were seen to be better able to adapt to the hospital environment. The findings suggest a possible link between length of stay and patients ' stress levels.

Based on the description, research on the relationship of length of hospitalization with stress levels in patients in the surgical ward of Dr. It's an important field to do. This research is expected to be the basis in the development of nursing interventions to reduce patient stress during treatment, so that the healing process and quality of health care can be improved.

METHODS

This study used a quantitative approach with cross-sectional design to analyze the relationship between length of hospitalization and stress levels in patients in the surgical ward. Cross-sectional design was chosen because the study aims to identify the relationship between the independent and dependent variables at one time measurement without follow-up of respondents. This approach is considered appropriate to describe the patient's stress condition during treatment and the relationship between the length of hospitalization and stress levels efficiently. The study was conducted in the surgical inpatient room of Dr. Racine in 2025. The population in this study was all patients who were admitted to the surgical ward during the study period as many as 89 patients. The sample size was determined using Slovin formula with 5% error rate, so that a minimum sample of 72 respondents was obtained.

Sampling technique using purposive sampling with consecutive sampling approach, that is, all patients who meet the inclusion criteria are recruited sequentially until the number of samples is met. The selection of respondents was based on the availability of patients during the study period and compliance with the research criteria. Inclusion criteria include patients who have been admitted to the surgical ward for at least 2 days, 18 years old, conscious and able to communicate well, and willing to be a respondent to the study. The exclusion criteria include patients with cognitive impairment, patients in critical condition, and patients who have a history of psychiatric disorders. The independent variable in this study is the length of hospitalization (length of stay/LOS), while the dependent variable is the patient's stress level. The length of hospitalization is measured based on the number of days of patient care obtained from medical records and categorized into <5 days and ≥5 days. Stress levels were measured using the

Depression Anxiety Stress Scale (DASS-21). Stress scores were then categorized into mild stress, moderate stress, and severe stress according to dass-21 interpretation guidelines.

Data collection was conducted using the DASS-21 questionnaire to measure the patient's stress level and observation sheets to record the length of hospitalization based on medical record data. The dass-21 instrument has been widely used in psychological research and has good validity and reliability in measuring stress levels. Data analysis was conducted in univariate to describe the frequency distribution of each variable and bivariate analysis using Chi-square test with a confidence level of 95% (α=0.05) to determine the relationship between the length of hospitalization with the patient's stress level. In addition, the analysis of Odds Ratio (OR) and Confidence Interval (CI) 95% to determine the risk of long hospitalization to the patient's stress level.This study has paid attention to the principles of research ethics by obtaining permission from the relevant institutions and ethical approval. Before the data collection was conducted, all respondents were given an explanation of the purpose of the study, the benefits of the study, the confidentiality of the data, and the right of respondents to refuse or resign from the study at any time without consequences for the health services received.

RESULTS

Analysis of the results of this study is presented in the form of univariate and bivariate analysis. The univariate analysis aimed to describe the frequency distribution of respondents ' characteristics based on length of treatment and stress level. Furthermore, bivariate analysis was conducted to determine the relationship between the length of treatment and stress levels in patients in the surgical ward of Dr. Rasidin Padang.

1. Frequency Distribution of Treatment Duration and Stress Level

Table 1. Frequency Distribution of Treatment Duration and Stress Level (n=72)

Variable	Categories	Frequency (f)	Percentage (%)
Long Treated	< 5 days	30	41.7
	≥ 5 days	42	58.3
Stress Level	Lightweight	18	25.0
	Medium	33	45.8
	Weight	21	29.2

Based on Table 1, it can be seen that most of the respondents had a length of time of 5 days, that is, 42 people (58.3%). Meanwhile, the stress level of respondents was dominated by the medium category of 33 people (45.8%), followed by the heavy category of 21 people (29.2%), and the light category of 18 people (25.0%). This suggests that the majority of patients admitted to the surgical ward experienced a moderate level of stress in the category with a relatively longer duration of treatment.

Professional Evidence-based Research and Advances in Wellness and Treatment (PERAWAT)
Vol. 03, No. 2, April 2026

2. Relationship of Length of Treatment with Stress Levels in Surgical ward Patients

Table 2. Relationship of Length of Treatment with Stress Levels in Surgical Ward Patients n=72)

Length of Hospitalization	Mild Stress n (%)	Moderate Stress n (%)	Severe Stress n (%)	Total n (%)	OR (95% CI)	p-value
< 5 hari	14 (46,7%)	12 (40,0%)	4 (13,3%)	30 (100%)	Ref	
≥ 5 hari	4 (9,5%)	21 (50,0%)	17 (40,5%)	42 (100%)	8,31 (2,37–29,10)	0,002
Total	**18 (25,0%)**	**33 (45,8%)**	**21 (29,2%)**	**72 (100%)**		

Chi-square test results showed a value of p = 0.002 (p < 0.05), which means there is a significant relationship between the length of hospitalization with the level of patient stress in the surgical ward of Dr. Rasidin Padang. The Odds Ratio (OR) analysis showed that patients with a length of stay of 5 days had an 8.31 times greater risk of experiencing moderate–severe stress than patients with a length of stay of <5 days. The value of 95% Confidence Interval (CI) of 2.37–29.10 that does not pass the number 1 indicates that the relationship is statistically significant and has clinical significance.

DISCUSSION

1. Frequency Distribution of Treatment Duration and Stress Level

The results showed that most of the respondents underwent a five-day length of hospitalization (58.3%). These findings indicate that patients in the surgical ward require a relatively long recovery period due to the need for postoperative observation, pain control, as well as monitoring for possible complications. The length of hospitalization reflects not only the severity of the patient's clinical condition, but also describes the complexity of the medical services provided during the treatment period.

This finding is in line with the Saputra study (2024) which showed that most inpatients had a treatment duration of more than five days. Internationally, research by McIsaac et al. (2017) found that postoperative patients with complex clinical conditions tend to have longer hospitalization periods because they require intensive monitoring and gradual rehabilitation. Another study by Rotstein et al. (2019) also explained that length of hospitalization is influenced by a combination of clinical and non-clinical factors, such as quality of care, patient readiness for discharge, and family support during treatment.

The long duration of hospitalization has the potential to increase the psychological stress on the patient. Psychologically, hospitalization can lead to loss of self-control, anxiety about the condition of the disease, as well as limitations in social activities that trigger emotional stress. The monotony of the hospital environment, repeated medical measures and uncertainty of the prognosis can worsen the psychological state of the patient. From the biological side, prolonged stress can activate the hypothalamic-pituitary-adrenal (HPA) axis which increases the production

of the hormone cortisol. Long-term increases in cortisol are known to be associated with decreased immune system, impaired sleep quality, and delayed wound healing. This condition indicates that the length of hospitalization not only has an impact on the psychological aspect, but can also directly affect the physiological condition of the patient.

This study also showed that the stress level of respondents was dominated by the moderate category (45.8%). The results indicate that most patients experience significant psychological stress during the course of treatment. Although patients are still able to adapt, moderate stress can still affect comfort, motivation to undergo therapy, and the overall recovery process.

This finding is consistent with the research of Pangandaheng et al. (2024) and Melyana et al. (2023) who reported that moderate stress was the most dominant category in hospitalized patients. Internationally, Mitchell (2014) states that hospitalization is one of the main sources of stress in adult patients due to fear of medical procedures, uncertainty of treatment outcomes, and changes in social roles during treatment. In addition, research by Li et al. (2020) showed that patients with a longer duration of hospitalization had higher levels of anxiety and stress than patients with a shorter duration of treatment.

The predominance of moderate stress in the study was likely influenced by a combination of physical and psychological factors, such as postoperative pain, limited mobility, as well as a lack of emotional support during treatment. Patients who are treated for a long time tend to experience emotional burnout and exhaustion due to the monotonous hospital routine. In addition, the lack of optimal therapeutic communication between health workers and patients can also increase the patient's negative perception of the condition he is experiencing.

The study also found that 29.2% of respondents experienced severe stress. The proportion showed that almost a third of patients experienced high psychological stress that could potentially significantly affect the clinical condition. Severe stress can increase the perception of pain, decrease adherence to therapy, as well as slow down the postoperative recovery process. Research Zerlyfera et al. (2025) showed that patients with high stress levels have a greater risk of sleep disorders, severe anxiety, and non-compliance with treatment.

Biologically, severe stress can increase the activity of the sympathetic nervous system leading to an increase in heart rate, blood pressure and the release of inflammatory mediators. Ongoing physiological activation can worsen the patient's condition, especially in surgical patients who need physiological stability to accelerate the process of wound healing and recovery of the body. Therefore, stress in hospitalized patients should not only be viewed as an emotional problem, but also as a clinical risk factor that can affect the outcome of treatment.

On the other hand, as many as 25.0% of respondents experienced mild stress. This condition shows that some patients still have good coping skills in dealing with hospitalization situations. Variations in stress levels in this study indicate that the psychological response of patients is influenced by individual factors such as age, previous experience, family support, education level, and adaptability to the hospital environment. This is in accordance with adaptive

stress theory which states that an individual's ability to deal with pressure is greatly influenced by the coping mechanisms possessed.

Clinically, the results of this study indicate the importance of the integration of psychological services in the care of inpatients, especially in surgical wards. A service approach that focuses only on the physical aspect risks neglecting the patient's mental condition, which can affect the success of therapy. Hospitals need to develop interventions based on patient-centered care, such as preoperative education, psychological counseling, relaxation therapy, optimal pain management, and increased family involvement during treatment. In addition, regular stress level screening is important to identify patients at risk of severe stress so that interventions can be given earlier.

Based on the results of the study, researchers assume that the predominance of moderate stress in patients is due to a combination of physical, psychological and environmental factors during the treatment period, especially in patients with a relatively long duration of hospitalization. The condition is exacerbated by the limitations of psychological intervention in hospital services. Therefore, a multidisciplinary approach is needed that is not only oriented towards physical healing, but also pays attention to the psychological well-being of the patient as an important part of the overall recovery process.

2. Relationship of Length of Treatment with Stress Levels in Surgical ward Patients

The results showed that there was a significant relationship between the length of hospitalization with the stress level of patients in the surgical ward of Dr. Rasidin field ($p = 0.002$). Analysis of the Odds Ratio (OR = 8.31) showed that patients with a length of hospitalization ≥5 days had an 8.31 times greater risk of experiencing moderate to severe stress than patients with a length of hospitalization <5 days. Confidence Interval values (95% CI: 2.37–29.10) that do not pass the number 1 indicate that the relationship is statistically significant and has strong clinical significance. These findings indicate that the longer the patient undergoes treatment, the greater the risk of the appearance of psychological disorders during hospitalization.

The results of this study are in line with the research of Putri and Rahmawati (2022) which found that surgical patients with a length of stay of more than four days had higher stress levels than patients with shorter stays. Internationally, research by Chaboyer et al. (2021) showed that long duration of hospitalization is significantly associated with increased psychological distress, especially in postoperative patients. Another study by Zhang et al. (2020) also found that patients with prolonged hospitalization are more prone to experiencing anxiety, depression, and emotional exhaustion due to limited social activity and increased uncertainty about the healing process.

"The results showed that patients with a length of hospitalization of ≥5 days had a higher risk of moderate-severe stress than patients with a shorter length of hospitalization. These findings are in line with the research of Li et al. (2020) which states that longer duration of hospitalization is related to increased anxiety, emotional stress, and social isolation in hospitalized patients. Research Chaboyer et al. (2021) also found that surgical patients who underwent longer treatment

experienced higher psychological distress due to uncertain health conditions and limited activity during hospitalization.

The relationship between length of stay and stress can be explained through psychological as well as biological mechanisms. Psychologically, patients who undergo longer treatment are more likely to experience a loss of control over themselves and their environment. Dependence on health workers, limitation of activity, as well as uncertainty of prognosis can give rise to feelings of helplessness and increase emotional stress. This condition is in accordance with Lazarus and Folkman's stress theory which states that stress arises when individuals assess environmental demands beyond their coping abilities. In patients with long periods of hospitalization, the accumulation of psychological stress can lead to a decrease in adaptability and thus to an increased risk of moderate to severe stress.

From the biological aspect, prolonged stress can activate the hypothalamic-pituitary-adrenal (HPA) axis which triggers increased production of the hormone cortisol and activation of the sympathetic nervous system. Such physiological responses can lead to an increase in heart rate, blood pressure, sleep disturbance, as well as an increase in inflammatory mediators. Research by Wulandari et al. (2024) showed that patients with a longer length of hospitalization had elevated cortisol levels associated with high levels of stress. This condition can slow down the wound healing process, decrease the body's resistance, and worsen the clinical condition of postoperative patients. Thus, stress in hospitalized patients affects not only the psychological state, but also affects the recovery process physiologically.

In addition to clinical factors, the hospital environment also contributes to increased patient stress. A monotonous environment, lack of privacy, sleep disturbances due to care activities, as well as limited social interaction can reinforce emotional exhaustion during hospitalization. Research Hidayat et al. (2023) showed that burnout during treatment becomes an important mediator in the increase in inpatient stress. This shows that the experience of hospitalization is not only related to physical illness, but also influenced by the quality of the environment and services received by patients.

The study found that patients with a longer length of hospitalization tended to experience moderate to severe stress. Nevertheless, these results also show that not all patients give the same psychological response. Individual factors such as age, previous treatment experience, family support, and coping skills can influence the level of stress a patient experiences. This explains why some patients remain able to maintain a more stable psychological state despite prolonged hospitalization.

Clinically, the findings of this study have important implications for nursing services and hospital management. The high risk of stress in patients with prolonged hospitalization indicates that a service approach that focuses only on the physical aspect is not enough to optimally support the patient's recovery process. Hospitals need to implement a patient-centered care approach that integrates psychological interventions in the care of surgical patients. Interventions such as therapeutic communication, education about the healing process, effective pain management,

relaxation therapy, and increased family support can help lower a patient's stress levels during hospitalization.

In addition, the sufficiently high OR results in this study suggest that the length of hospitalization can be used as an indicator of psychological risk in surgical patients. Therefore, regular screening of stress levels in patients with long hospital stays is necessary as part of a comprehensive nursing service. Early intervention in patients who show signs of moderate or severe stress is important to prevent a more serious impact on the patient's physical and psychological condition.

Based on the results of the study, researchers assume that a significant relationship between the length of hospitalization and the level of stress occurs as a result of the accumulation of physical and psychological stress during the treatment process. The uncertainty of the state of Health, the limitation of activity, as well as the lack of psychological support during hospitalization worsen the patient's adaptability to the hospital environment. Therefore, the treatment of inpatients should not only be oriented towards the cure of the disease, but also pay attention to the psychological well-being of the patient as an important part of the overall recovery process.

CONCLUSIONS

The results showed that most of the respondents had a length of hospitalisation ≥5 days (58.3%) and the stress level was in the moderate category (45.8%). The results of bivariate analysis using Chi-square test showed a significant relationship between the length of treatment with the stress level of patients in the surgical ward of Dr. Rasidin field with p-value = 0.002. These findings indicate that the longer the patient is in hospital, the tendency for stress levels to increase. Thus, the length of treatment is one of the factors that is closely related to the patient's psychological condition during treatment.

Based on these results, it can be concluded that there is a significant relationship between the length of treatment and the level of stress in surgical ward patients. This study has limitations, such as cross-sectional design that only describes the relationship at one time so it can not explain the causal relationship with certainty. In addition, this study used only one hospital as a research location so that the generalization of the results is still limited. Other factors that can affect stress levels such as family support, economic conditions, and disease severity were not analyzed in depth in the study. Therefore, further research is recommended to use a longitudinal design and consider other variables more broadly so that the results obtained are more comprehensive.

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