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The Relationship Between Waiting Time, Anxiety Levels, and Hemodynamic Status in Preoperative Patients at Purwokerto Islamic Hospital

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ABSTRACT

Background: Anxiety is an emotional response from individuals that describes a state of worry, anxiety, fear and unease accompanied by various life situations from any aspect as part of a pain disorder.
Method: This research uses a correlational analytical research design, using a cross-sectional approach. The population and sample used were 56 respondents using the consecutive sampling method. The statistical test used is Spearman's rank.
Results: This study shows that the majority of respondents were aged 18 – 28 years (32.1%), male (50%), completed high school/vocational school (46.4%), type of general anesthesia (50%), and type of minor surgery (100%). The results of the Spearman's rank test showed a significance value with a p value <0.05, which means that there was a significant relationship between waiting time and anxiety levels and hemodynamic status of preoperative patients during the waiting time period.
Conclusion: There is a relationship between the waiting time period and the level of anxiety and hemodynamic status of preoperative patients at Purwokerto Islamic Hospital.

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1. INTRODUCTION

Anxiety is an emotional response that manifests as worry, unease, and fear, often accompanied by physical symptoms such as increased heart rate, trembling, and sweating. This response is typically triggered by situations perceived as threatening, particularly during medical procedures. According to global data, approximately 264 million individuals experience anxiety disorders worldwide[1]. Preoperative anxiety is a common psychological issue faced by patients awaiting surgery. Studies show that a substantial proportion of individuals, particularly in surgical settings, experience significant anxiety levels, which can negatively impact both psychological and physiological conditions.

In preoperative settings, waiting time, defined as the period between patient admission and the surgical procedure, plays a critical role in influencing anxiety levels. Anxiety during this period may arise from uncertainty about the surgical procedure, fear of pain, and lack of information. Furthermore,

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preoperative anxiety can lead to alterations in patients' hemodynamic status. Hemodynamic status refers to the function of the cardiovascular system, including blood pressure and heart rate, which are influenced by emotional stressors such as anxiety[2]. Previous studies have demonstrated that increased anxiety levels are associated with elevated heart rate and blood pressure, potentially complicating anesthesia and postoperative recovery[3].

In Indonesia, waiting time in preoperative care has become an important issue, as delays in surgical procedures may contribute to increased anxiety levels among patients. A study reported that delayed surgeries are a major source of anxiety in preoperative patients[4]. Additionally, anxiety has been shown to significantly affect hemodynamic status, with higher anxiety levels associated with increased systolic and diastolic blood pressure[5]. This relationship has important clinical implications, as it may influence the effectiveness of anesthesia and increase the risk of surgical complications.

Considering the importance of managing preoperative anxiety, it is essential to examine the impact of waiting time on anxiety levels and hemodynamic status. This study aims to analyze the relationship between waiting time, anxiety levels, and hemodynamic status, including blood pressure and heart rate, among preoperative patients at Purwokerto Islamic Hospital. Understanding this relationship is important for healthcare providers in developing strategies to reduce anxiety and maintain hemodynamic stability prior to surgery.

Recent studies have highlighted the effectiveness of various interventions in reducing preoperative anxiety and stabilizing hemodynamic status. However, there is still limited evidence regarding the specific contribution of waiting time to these outcomes, particularly in Indonesian hospital settings. Therefore, this study is expected to provide additional evidence regarding the role of waiting time in influencing the psychological and physiological readiness of preoperative patients.

2. RESEARCH METHOD

This study employed a quantitative research approach using a correlational analytical design with a cross-sectional method. The cross-sectional design was used to examine the relationship between exposure (waiting time) and outcomes (anxiety levels and hemodynamic status) at a specific point in time. This approach enabled the researcher to analyze the relationship between variables simultaneously[1].

In this study, the independent variable was waiting time, defined as the duration from patient admission to the surgical waiting room until the commencement of surgery. The dependent variables were anxiety levels and hemodynamic status. Anxiety levels were measured using the Amsterdam Preoperative Anxiety and Information Scale (APAIS), while hemodynamic status was assessed based on blood pressure and heart rate measurements recorded during the waiting period. The study was conducted at Purwokerto Islamic Hospital from March to April 2024. The population consisted of preoperative patients scheduled for elective surgery under general or regional anesthesia. A total of 56 respondents were selected using a consecutive sampling technique. Data were collected through direct measurement and structured questionnaires.

A structured checklist was used to obtain relevant data from patient records, including waiting time duration, anxiety levels, and hemodynamic status. Research instruments are essential tools to ensure systematic and accurate data collection[2]. Statistical analysis was performed using Spearman's rank correlation test to determine the relationship between waiting time, anxiety levels, and hemodynamic status. The level of statistical significance was set at $p < 0.05$. This study adhered to ethical principles, including voluntary participation, confidentiality, and informed consent. Ethical approval was obtained from the Ethical Review Committee of Universitas Muhammadiyah Purwokerto prior to data collection.

3. RESULT AND DISCUSSIONS

The data collection for the study was conducted from March 26, 2024, to April 26, 2024, at Purwokerto Islamic Hospital. The study participants consisted of 56 patients who experienced a preoperative waiting time period. The results of the study include:

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3.1. Univariate Analysis

Table 1. Characteristics of Respondents

NO	Characteristics	Frequency (n=56)	Percentage (%)
	Age		
1	18–28 years	18	32.1
2	29–39 years	10	17.9
3	40–50 years	14	25.0
4	51 years and above	14	25.0
	Gender		
1	Male	28	50.0
2	Female	28	50.0
	Education Level		
1	Elementary School	8	14.3
2	Junior–Senior High School	8	14.3
3	Senior High School/ Vocational School	26	46.4
4	Higher Education (University)	14	25.0
	Type of Anesthesia		
1	General Anesthesia	28	50.0
2	Regional Anesthesia	28	50.0
	Type of Surgery		
1	Major	0	0.0
2	Minor	56	100.0

Source: Primary Data, March 2024.

Based on Table 1, it can be seen that out of 56 preoperative patients, 18 patients (32.1%) were aged 18–28 years, 28 patients (50%) were male, 26 patients (46.4%) graduated from senior high school/vocational school, 28 patients (50%) used general anesthesia, and all 56 patients (100%) underwent minor surgeries.

Table 2. Distribution of Respondents Based on Preoperative Waiting Time at the Central Operating Room of Purwokerto Islamic Hospital (n = 56)

	Waiting Time (Minutes)	Frequency (n)	Percentage (%)	Mean
1	5 Minutes	5	8.9	26.51
2	10 Minutes	6	10.7	
3	15 Minutes	6	10.7	
4	20 Minutes	8	14.3	
5	25 Minutes	7	12.5	
6	30 Minutes	10	17.9	
7	35 Minutes	3	5.4	
8	40 Minutes	3	5.4	
9	45 Minutes	2	3.6	
10	50 Minutes	0	0.0	
11	55 Minutes	0	0.0	
12	60 Minutes	6	3.6	

Source: Primary Data, March 2024.

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Based on Table 2, the distribution of respondents according to the waiting time variable shows that the majority of respondents experienced a waiting time of 30 minutes, with 10 people (17.9%). The average waiting time for patients was 27 minutes.

Table 3. Distribution of Respondents Based on Anxiety Levels of Patients Who Experienced Preoperative Waiting Time at the Central Operating Room of Purwokerto Islamic Hospital (n = 56)

	Anxiety Levels	Frequency (n)	Percentage (%)
1	No Anxiety	4	7.1
2	Mild Anxiety	4	7.1
3	Moderate Anxiety	29	51.8
4	Severe Anxiety	15	26.8
5	Very Severe Anxiety/Panic	4	7.1

Source: Primary Data, March 2024.

Based on Table 3, the anxiety categories of patients experiencing preoperative waiting time show that the majority of individuals experienced moderate anxiety, with 29 respondents (51.8%). Four respondents (7.1%) experienced no anxiety, while another 4 respondents (7.1%) had mild anxiety. Additionally, 15 respondents (26.8%) experienced severe anxiety, and 4 respondents (7.1%) experienced very severe anxiety/panic.

Table 4. Respondents Based on Blood Pressure of Patients Who Experienced Preoperative Waiting Time at the Central Operating Room of Purwokerto Islamic Hospital (n = 56)

	Blood Pressure	Frequency (n)	Percentage (%)
1	Hypotension	5	8.9
2	Normal	4	7.1
3	Pre-hypertension	11	19.6
4	Hypertension Stage 1	17	30.4
5	Hypertension Stage 2	19	33.9

Source: Primary Data, March 2024.

Based on Table 4, among the 56 patients experiencing preoperative waiting time, the majority (19 people, or 33.9%) had Stage 2 hypertension.

Table 5. Distribution of Respondents Based on Pulse Rate of Patients Who Experienced Preoperative Waiting Time at the Central Operating Room of Purwokerto Islamic Hospital (n = 56)

	Pulse Rate	Frequency (n)	Percentage (%)
1	Normal	11	19.6
2	Bradycardia	11	19.6
3	Tachycardia	34	60.7

Source: Primary Data, March 2024.

Based on Table 5, among the 56 patients experiencing preoperative waiting time, the majority (34 people, or 60.7%) had tachycardia.

Table 6. Kolmogorov-Smirnov Normality Test

	Variable	Statistic	df	Significance
1	Waiting Time	0.162	56	0.001
2	Anxiety Level	0.275	56	0.001
3	Blood Pressure	0.227	56	0.001
4	Pulse Rate	0.375	56	0.001

Source: Primary Data, March 2024.

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Based on Table 6, the significance value in the normality test is $p < 0.001$, indicating that the data is not normally distributed.

3.2. Bivariate Analysis

Table 7. Statistical Test Results of the Relationship Between Waiting Time and Anxiety Level and Hemodynamic Status of Preoperative Patients at Purwokerto Islamic Hospital

Variable	Anxiety Level	
	r	p-value
Waiting Time	-0.292	0.029

Source: Primary Data, March 2024.

Based on Table 7, the results show that waiting time was significantly associated with anxiety levels ($p = 0.029$; $r = -0.292$), indicating a weak negative correlation in which shorter waiting times were associated with higher anxiety levels.

Table 8. Statistical Test Results of the Relationship Between Waiting Time and Blood Pressure and Hemodynamic Status of Preoperative Patients at Purwokerto Islamic Hospital

Variable	Blood Pressure	
	r	p-value
Waiting Time	-0.330	0.013

Source: Primary Data, March 2024.

Based on Table 8, the results show a significant relationship between waiting time and blood pressure ($p = 0.013$; $r = -0.330$), showing a weak negative correlation where shorter waiting times corresponded to higher blood pressure.

Table 9. Statistical Test Results of the Relationship Between Waiting Time and Pulse Rate and Hemodynamic Status of Preoperative Patients at Purwokerto Islamic Hospital

Variable	Pulse Rate	
	r	p-value
Waiting Time	-0.392	0.003

Source: Primary Data, March 2024.

Based on Table 9, the results show a significant association between waiting time and pulse rate ($p = 0.003$; $r = -0.392$), indicating a weak negative correlation in which shorter waiting times were linked to higher pulse rates.

This study demonstrated significant relationships between waiting time, anxiety levels, and hemodynamic status among preoperative patients. The negative correlations indicate that shorter waiting times were associated with higher anxiety levels and increased physiological responses. This finding suggests that anxiety may peak as patients approach the time of surgery.

From a psychological perspective, anxiety is not solely influenced by duration but also by perception and readiness. Patients who are closer to undergoing surgery may experience heightened emotional stress due to uncertainty, fear of pain, and anticipation of medical procedures. This aligns with previous studies indicating that preoperative anxiety intensifies as the surgical moment approaches. The physiological findings further support this explanation. Increased blood pressure and pulse rate observed in patients with shorter waiting times reflect activation of the sympathetic nervous system. This response is commonly associated with acute stress and may affect anesthesia management and surgical outcomes.

An important implication of this study is that reducing waiting time alone does not necessarily minimize anxiety. Without adequate psychological preparation, shorter waiting periods may instead trigger acute stress responses. Therefore, pre-operative care should include not only efficient scheduling but also psychological support, such as counseling, clear communication, and relaxation techniques. This study has several limitations. First, the use of a cross-sectional design limits the ability to establish causal relationships between variables. Second, the sample size was relatively small and limited to a single

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hospital, which may affect the generalizability of the findings. Third, other potential factors influencing anxiety, such as previous surgical experience, personality traits, and family support, were not assessed.

Future studies are recommended to use longitudinal or experimental designs to better understand causal relationships. In addition, further research should explore psychological interventions to reduce preoperative anxiety and examine other contributing factors affecting both anxiety and hemodynamic status.

4. CONCLUSION AND RECOMMENDATION

This study aimed to examine the relationship between waiting time, anxiety levels, and hemodynamic status among preoperative patients at Rumah Sakit Islam Purwokerto. The findings demonstrate that waiting time has a statistically significant relationship with both psychological and physiological responses. Specifically, shorter waiting times were associated with higher anxiety levels, blood pressure, and pulse rate, indicating increased stress responses as patients approach the time of surgery.

These results confirm that preoperative anxiety is not solely influenced by the duration of waiting but also by the patient's psychological readiness and perception of the upcoming procedure. This study contributes to the field of health sciences, particularly in anesthesiology and perioperative nursing, by providing empirical evidence that shorter waiting periods may trigger acute stress responses if not accompanied by adequate psychological preparation.

Therefore, this study highlights the importance of integrating psychological support into preoperative care. Providing structured education, clear communication, and emotional support is essential to improve patient readiness and stabilize hemodynamic conditions prior to surgery.

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