

## **The Relationship Between Nurses' Workload and Their Level of Work Fatigue in the Emergency Department of the Trauma Center at the Provincial General Hospital of West Nusa Tenggara in 2023**

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### **ABSTRACT**

Excessive workloads cause fatigue among nurses in hospitals. Improving workload management is expected to reduce nurse fatigue and improve hospital performance. The purpose of this study was to identify the workload experienced by nurses, measure the level of work fatigue, and analyze the relationship between workload and work fatigue among nurses in the Trauma Center Emergency Room at the NTB Provincial Hospital in 2023. This study used a correlational design with a cross-sectional approach. The sample used was 20 respondents from the Emergency Room at the NTB Provincial Hospital, using total sampling. Data were collected using two instruments: a workload observation sheet and a fatigue questionnaire. Data analysis was performed using the Chi-Square test with a significance level of  $\alpha = 0.05$ . The results showed that the workload of nurses in the Trauma Center Emergency Room at the NTB Provincial Hospital in 2023 was categorized as light, with 12 nurses (60%). Furthermore, the level of work fatigue of nurses in the Trauma Center Emergency Room at the NTB Provincial Hospital in 2023 was categorized as tired, with 11 nurses (55%). There was a significant relationship between workload and fatigue among nurses in the Trauma Center Emergency Room at the West Nusa Tenggara Provincial Hospital (NTB), with a p-value of 0.000 ( $p < 0.05$ ). The results of this study concluded that there is a relationship between workload and fatigue among nurses in the emergency room. To reduce fatigue

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levels, hospitals are expected to implement effective workload management. Improved hospital management is expected to maintain service quality and improve nursing performance. Furthermore, this study is also expected to provide input for nurses to increase their confidence in their abilities to complete their work and improve their skills so they feel comfortable and confident in carrying out nursing procedures while on duty.

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## INTRODUCTION

The relationship between nurses' workload and work fatigue levels in the Emergency Department of the Trauma Center at the Regional General Hospital is an important topic for research, especially considering the characteristics of the work and the challenges faced in the emergency room. This study aims to explore how factors such as physical and mental workload can influence the fatigue levels experienced by nurses, as well as their implications for patient safety and the quality of healthcare services.

Nurses' workload can be divided into two main categories: physical and mental workload. Physical workload refers to activities that require physical effort, while mental workload relates to psychological stress and information processing that occurs during care tasks. In a study by Latief and Lestari, it was found that a 24-hour hospital work system with shift schedules can increase nurses' fatigue levels, which in turn can reduce work performance and productivity (Latief & Lestari, 2019). This indicates that high physical and mental workload is a crucial factor in determining fatigue levels.

Work-related fatigue, according to Elviana et al., is often associated with several factors, including mental workload, shift work hours, nutritional status, age, and nursing tenure (Elviana et al., 2023). This suggests that it is not only workload alone that influences fatigue levels, but also

demographic and individual health factors. Nurses with good nutritional status and who maintain a healthy lifestyle are better able to cope with the stress caused by workload, enabling them to maintain higher levels of energy and work efficiency. This study highlights the need to prioritize nurses' well-being as part of managerial strategies to improve the quality of care.

Furthermore, a study by Gumelar et al. emphasizes that workload is the result of the interaction between the demands of the tasks that nurses must fulfill, the work environment in which they operate, the skills they possess, and their perceptions of their work (Gumelar et al., 2021). Excessive workload can lead to fatigue, which, over the long term, has the potential to reduce nurses' effectiveness and skills in performing their duties. Therefore, effective workload management is essential to maintain nurses' health and well-being, which ultimately has a positive impact on patients.

In this context, it is also important to consider the physical workload experienced by nurses, especially in emergency situations such as during a pandemic. Research by Pujiastuti et al. shows that physical workload when dealing with crisis situations can potentially cause moderate fatigue (Pujiastuti et al., 2021). Interventions such as stretching during breaks, as well as providing adequate food and fluids, are proposed to help nurses cope with physical fatigue. This highlights the

importance for hospitals to create working conditions that support the physical and mental health of nurses within the management of the emergency department.

Sources such as Maulana et al. also emphasize the importance of analyzing workload and fatigue levels using appropriate methods (Maulana et al., 2023). By using valid methods to evaluate the relationship between workload and fatigue, hospital management can identify areas where improvements are needed and implement better policies regarding shift scheduling and task loads. This is important so that nurses can perform their duties without experiencing excessive fatigue, which could negatively impact patient safety.

To improve the quality of service in the Trauma Center Emergency Room of the Regional General Hospital, it is important for management to conduct regular evaluations of nurses' workloads and their impact on their health. A data-driven approach to assessing nurses' workload and fatigue will not only help improve their well-being but also maintain the quality of healthcare services. Additionally, training on stress management and relaxation techniques can be part of a nurse development program addressing the challenges faced in a high-pressure work environment.

In efforts to reduce work-related fatigue, the hospital must also consider workplace environmental factors, including communication among healthcare teams and management support in addressing daily challenges. Implementing policies that support nurses' mental and physical well-being, such as mental health programs, can significantly contribute to reducing

fatigue levels and improving nurses' job satisfaction.

Based on this analysis, it can be concluded that there is a significant relationship between nurses' workload and the fatigue levels they experience in the Trauma Center Emergency Room of the Regional General Hospital. Further research and genuine attention to these factors should be a priority for hospital management to maintain nurses' well-being and optimal patient care quality.

The main problem faced in the Trauma Center Emergency Room of the West Nusa Tenggara Provincial Hospital is the high workload borne by nurses. This heavy workload has the potential to increase nurses' work-related fatigue, which can negatively impact the quality of care, patient safety, and the well-being of healthcare workers themselves. The urgency of this research is crucial to empirically understand the relationship between workload and nurses' work-related fatigue. Thus, hospitals can take strategic steps in managing staff and workload to improve efficiency, mental health, and service quality. The purpose of this study is to determine whether there is a significant relationship between workload and the level of work fatigue among nurses in the Trauma Center Emergency Room of the West Nusa Tenggara Provincial Hospital in 2023.

## **METHOD**

Research is a scientific process carried out through systematic steps to obtain valid and reliable data in order to answer questions or achieve specific objectives. In the context of research related to the relationship between certain variables, research design is an important guideline that will guide the planning and

implementation process so that the results obtained are accurate and relevant. According to Nursalam (2013), research design is a guide for researchers in designing strategies to achieve research objectives.

In this study, a correlational analytical design was used to examine the relationship or correlation between two main variables, namely workload and fatigue among nurses in the emergency room of the Trauma Center at the NTB Provincial Hospital in 2023. Correlation research itself aims to reveal statistical relationships between variables, so the design involves two variables simultaneously, as explained by Nursalam (2013).

The method used is descriptive analytical observation with a cross-sectional approach. This approach emphasizes simultaneous data measurement, so that the results reflect the conditions at the time of observation (Hidayat, 2014). This study aims to determine in depth whether there is a significant relationship between workload and the level of fatigue among nurses in the Trauma Center Emergency Room of the NTB Provincial Hospital in 2023.

The population in this study includes all subjects targeted by the study, namely all nurses working in the Trauma Center Emergency Room of the NTB Provincial Hospital, totaling 20 people. According to Arikunto (2010), the population is the entire group of subjects that meet specific criteria to be used as research subjects. According to Nursalam (2013) and Machfoedz (2010), the population in question is all nurses in the emergency room who meet specific criteria.

Since the population size is relatively small, i.e., 20 individuals, the researcher included all members of the population as the sample, thus employing total sampling, also known as saturated sampling, as all members of the population were included in the study (Sugiyono, 2018). This sampling

method is effective because the characteristics of the entire population are highly homogeneous and the sample size is small.

The research variables consist of independent and dependent variables. The independent variable is the workload experienced by nurses, which influences the dependent variable, namely the level of work fatigue. According to Notoatmodjo (2012), an independent variable is a variable that influences other variables, while a dependent variable is a variable influenced by independent variables.

The main data collection instrument was a standardized questionnaire derived from relevant literature. The workload questionnaire was adapted from Nursalam (2015) and consisted of 13 statements with an ordinal scale of 1 to 4, which categorized workload as heavy, moderate, and light based on the total score. Meanwhile, the work fatigue questionnaire uses the Subjective Self Rating Test (SSRT) method developed in Japan and consists of 22 statements that measure the level of emotional fatigue, depersonalization, and self-esteem, which are also assessed using an ordinal scale.

Validity and reliability tests were conducted to ensure the instruments could be used with accurate and consistent results. Although the instruments from previous literature had been practically validated and found to be reliable, retesting was still conducted using statistical analysis with SPSS 21 to make the data more reliable.

Data collection was conducted by distributing questionnaires directly to respondents consisting of nurses in the emergency room. Researchers were assisted by other staff in the questionnaire completion process, which was carried out systematically and in an organized manner to ensure that the data obtained was valid and representative. After data collection, the data processing process was carried out, which included editing to ensure the completeness and clarity of the data, coding

the answers according to categories, tabulating the data presented in the form of frequency distributions, and rechecking the data to avoid entry errors (Notoatmodjo, 2018). Univariate analysis was conducted to describe the characteristics of respondents and other variables, and bivariate analysis using the Chi-Square test was conducted to test the relationship between workload and nurse fatigue, assuming the data met the statistical test requirements.

Thus, by following these steps from design planning, data collection, processing, to analysis, this study is expected to provide a valid and reliable picture of the relationship between workload and nurse fatigue in the Emergency Department of the Trauma Center at the Provincial General Hospital of NTB in 2023. The results of this study are expected to serve as a basis for consideration in efforts to improve workload management and enhance the health and performance of nurses in the hospital environment, particularly in the emergency department, to improve the quality of healthcare services.

## RESULTS AND DISCUSSION

The data obtained from the study results show that there are categories of workload for nurses in the Trauma Center Emergency Room of the NTB Provincial Hospital in 2023, namely heavy, moderate, and light. In addition, the analysis of the relationship between workload and work fatigue also shows a significant correlation. These results indicate that the level of workload influences the level of fatigue experienced by nurses, so addressing workload issues is essential to improving the health and performance of healthcare workers in that hospital environment.

Most nurses in the Emergency Department of the Trauma Center at the Provincial General Hospital of West Nusa Tenggara in 2023 experienced relatively high levels of work fatigue, with 75%

falling into the “tired” category and 5% in the “very tired” category. Only around 20% of nurses were classified as less fatigued. This indicates that fatigue levels among nurses are quite significant, necessitating attention and strategic measures to manage workload and improve the well-being of healthcare workers in the ED to support the quality of care and the health of these nurses.

There is a significant relationship between workload and work fatigue among nurses in the Emergency Department of the Trauma Center at the Provincial General Hospital of NTB in 2023. Based on the data distribution table, the majority of respondents with heavy workloads experienced fatigue, with 55% of them categorized as very tired and tired. Conversely, respondents with light workloads experienced almost no high levels of fatigue. Statistical testing using the Chi-Square test yielded a p-value of 0.000 ( $p < 0.05$ ), indicating that the alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_o$ ) is rejected. This indicates that there is a significant relationship between the level of workload and the level of work fatigue among nurses in the Trauma Center Emergency Room of the NTB Provincial General Hospital in 2023, such that an increase in workload contributes to an increase in the level of nurse fatigue.

Work fatigue among nurses, particularly in the Trauma Center Emergency Room of the NTB Provincial General Hospital in 2023, is an urgent concern in the field of public health. Various factors contribute to work fatigue, ranging from high workload, environmental conditions, to stress experienced by nurses. Research indicates that nurses face significant challenges in providing optimal care to patients, which often results in a decline in their own health quality due to work-related fatigue (Elviana et al., 2023; Suliastiani et al., 2023). In this context, a deep understanding of the factors that



influence nurse fatigue is essential, especially in improving the quality of service in hospitals.

Workload can be defined as a combination of task demands, work environment, and individual perceptions of responsibility. Research by Sumantri et al. shows that excessive workload is one of the main triggers of work fatigue among nurses in various hospitals (Sumantri et al., 2024). In the often dynamic and high-pressure environment of the emergency department, nurses must adapt quickly and effectively, which can lead to stress and prolonged fatigue (Amalia et al., 2023). Additionally, Amalia et al. explain that work-related fatigue has the potential to affect nurses' performance, which not only disrupts their physical and mental health but also poses risks to patient safety and collaboration among nursing colleagues (Amalia et al., 2023).

Besides workload, another factor contributing to work-related fatigue is the organization of work hours. Shift work and pressure from management to meet service standards can exacerbate the situation (Laili & Susilawati, 2024). Research indicates that irregular work schedules in the form of shifts can affect nurses' mental health, including increasing the levels of work-related stress they experience (Laili & Susilawati, 2024). Research findings reveal nuances; in some cases, work-related fatigue is not always directly linked to increased work-related stress among nurses in specific units such as the ICU (Laili & Susilawati, 2024). This indicates the need for further research to understand the relationship between shift work and fatigue in a more specific context.

Work fatigue is not only an individual problem, but also encompasses organizational dimensions. Suliastiani et al. note that work fatigue experienced by nurses can significantly contribute to workplace accidents. With high levels of fatigue, there is an increased risk of errors that can endanger patients and nurses

themselves (Suliastiani et al., 2023). The demands from clients and hospital management to provide quality care often conflict with the capabilities and resources available on the ground. This creates additional pressure that further increases the mental burden on nurses. Therefore, attention from hospital management to create a supportive work environment is crucial in addressing work-related fatigue (Suliastiani et al., 2023).

Centralized training on stress management can also help nurses cope with their work-related fatigue. Education and training can serve to improve nurses' skills in managing high-pressure situations that often occur in the emergency room (Elviana et al., 2023). With the implementation of better stress management practices, it is hoped that the quality of service in hospitals will improve. Thus, the health of nurses can be protected, which in turn has a positive impact on the overall patient care system.

The mental health aspects of work fatigue need to be a primary focus. Research shows that work fatigue not only worsens nurses' physical condition, but can also cause long-term effects on mental health that may not be apparent in the short term. Prolonged fatigue can lead to burnout syndrome, which is common in the nursing profession, especially among those working in high-pressure situations such as emergency rooms (Amalia et al., 2023). This underscores the importance of implementing workplace support mechanisms that can prevent prolonged work-related fatigue and promote good mental health among nurses.

The relationship between various factors that can influence nurse fatigue must be viewed holistically. In this context, hospital management's commitment to reducing excessive workloads and facilitating a positive work environment is key to sustainable improvement. In addition to individual approaches to addressing work-related fatigue, systemic changes at the organizational level need to be

proposed, following the findings of Suliastiani et al. that fatigue has a significant association with workplace accidents (Suliastiani et al., 2023). Through better intervention in workload management and improved psychological support, the risk of burnout among nurses at NTB Provincial Hospital can be reduced, facilitating better healthcare services.

It is important to recognize that work-related fatigue among nurses not only harms individuals but also has broader implications for the healthcare system. When nurses experience persistent work-related fatigue, this not only impacts the quality of care received by patients but can also affect overall patient satisfaction (Elviana et al., 2023; Amalia et al., 2023). Therefore, a comprehensive approach that includes managing burnout, work-related stress, and social support in the workplace must be integrated into hospital policies and standard operating procedures. In the long term, this can result in a more sustainable work environment and positive effects on the overall efficiency of the healthcare system.

The relationship between workload and work-related fatigue among nurses, particularly in the Trauma Center Emergency Room of the NTB Provincial General Hospital, is an increasingly relevant topic, especially amid rising demands in healthcare services. Research has shown that work-related fatigue is a significant issue, as it can lead to reduced productivity, deteriorating health, and even increased workplace accidents (Alfahmi & Faris, 2023). Work-related fatigue can be influenced by various factors, with workload being one of the key elements with a significant impact.

High workloads, particularly in the context of healthcare services, are often associated with long working hours and demanding task intensity. In a study by Suliastiani et al., it was found that nurses experiencing excessive workloads tend to face more serious work-related fatigue

issues (Suliastiani et al., 2023). This research indicates that long work shifts significantly impact nurses' physical and mental condition, ultimately contributing to fatigue. Therefore, it is crucial for nurses to maximize their rest time, including prioritizing the quality of their sleep. Implementing more humane shift scheduling could be a key strategy to enhance nurses' health and well-being.

In a broader context, the relationship between workloads and fatigue is also discussed in a study by Dian and Kurniawidjaja. They found that while there was no significant association between work shifts and working hours with fatigue ( $p=0.595$  and  $p=1.000$ ), work-related stress had a significant impact on work-related fatigue among nurses ( $p=0.001$ ) (Dian & Kurniawidjaja, 2023). This highlights the importance of considering psychological factors alongside physical workload when assessing fatigue among nurses.

Mental workload is also an aspect that deserves attention, as explained in a study by Salsabilla and Wahyudiono. This study found that mental workload has a significant relationship with work-related fatigue complaints among midwives (Salsabilla & Wahyudiono, 2023). This indicates that workload is not limited to physical activities but can also include the mental stress faced by healthcare workers, highlighting the need for a holistic approach in addressing work-related fatigue.

Research by Ulya and Novendy revealed that there is a significant relationship between workload and stress among employees (Ulya & Novendy, 2023). Given that work stress can contribute to fatigue, interventions aimed at reducing stress can also lower fatigue levels in the workplace. In the context of nurses in the ED, workload management and psychosocial support can be key components of a fatigue mitigation strategy.

To address these challenges, hospitals need to develop policies that support healthy workload management. Concrete steps such as better shift scheduling, fair task distribution, and providing psychological support are essential for nurses to function optimally without experiencing the negative effects of fatigue. Hospital management support and effective support systems are crucial in creating a healthy work environment for healthcare workers. Through a comprehensive approach, it is hoped that work-related fatigue among nurses in the emergency department can be reduced, which in turn will improve the quality of healthcare services.

Thus, evidence shows that high workloads and psychological factors such as stress significantly contribute to work-related fatigue among healthcare workers. Interventions focused on reducing workload and managing stress are crucial for improving the well-being of nurses and the overall quality of healthcare services. Building awareness of the importance of this issue among stakeholders in the healthcare sector will have a positive impact on achieving better outcomes for both the institution and the nurses themselves.

## **CONCLUSIONS AND RECOMMENDATIONS**

The researchers presented several conclusions based on the results of the study. In general, the researchers concluded that there was a significant relationship between workload and work fatigue among nurses in the Trauma Center Emergency Room of the NTB Provincial Hospital in 2023. More specifically, the following conclusions can be drawn: 1). The workload of nurses in the Trauma Center Emergency Room of the NTB Provincial General Hospital in 2023 was mostly categorized as light workload, with 12

people (60%). Work-related fatigue among nurses in the Trauma Center Emergency Room of the NTB Provincial General Hospital in 2023 was mostly categorized as tired, with 11 individuals (55%). The statistical test using the Chi-Square test yielded a p-value of 0.000 ( $p < 0.05$ ), indicating a significant association between workload and work-related fatigue among nurses in the Emergency Department of the Trauma Center at the Provincial General Hospital of NTB in 2023.

For the NTB Provincial General Hospital, it is hoped that hospital management will be able to maintain and improve the quality of nursing services. In addition, it is also hoped that the hospital will pay more attention to managing nurses' workloads so that they are not excessive, which can directly impact work fatigue. This study is also expected to provide input to help nurses feel confident in their ability to complete their work and improve their skills, thereby making them feel more comfortable and self-assured when performing nursing tasks during their duties.

For educational institutions, particularly Qamarul Huda Badaruddin Bagu University, the results of this study can be used as supporting material in the learning process related to workload and work-related fatigue in the healthcare environment. For future researchers, it is hoped that this study can serve as a foundational reference for conducting more in-depth research on the factors causing work-related fatigue among nurses, as well as other factors that may contribute to high workloads and fatigue in hospital settings. Further research is expected to uncover the variables influencing work-related fatigue in a more comprehensive manner.



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