The Relationship Between Nurses' Workload and Quality of Service to Patients in the ICU Room

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Article Information	ABSTRACT
	Health services in the ICU room have a high level of complexity, with nurses as the main medical personnel who play a role in providing intensive care to patients in critical condition. High workload in nurses can affect the quality of service provided. This study aims to analyze the relationship between nurse workload and quality of service to patients in the ICU room. This research method uses a correlational design with a cross-sectional approach. The study sample amounted to 50 nurses in the ICU room of RSUD Abdul Wahab Sjahranie Samarinda who were selected using purposive sampling technique. Data were collected through questionnaires and analyzed using the Chi-Square test. The results showed that the majority of nurses had a moderate workload (68%), while the quality of service provided was mostly classified as good (92%). Statistical analysis showed a significant relationship between workload and service quality (p-value = 0.000), where nurses with heavy workloads were more at risk of experiencing a decrease in service quality. These results indicate that effective workload management is necessary to maintain quality of care in the ICU. Hospital management is advised to evaluate work distribution to optimize nurse performance and improve the quality of health services. *Keywords: Workload, Nurses, Service Quality, ICU Room*

INTRODUCTION

Hospitals are health care institutions organized by the government and the private sector, which have a strategic role in providing basic health services, referrals, and supporting health services. In carrying out their duties, hospitals are expected to prioritize social functions to ensure the accessibility of health services for all levels of society. The level of success of the hospital in carrying out this role is reflected in the quality of health services provided. The quality of hospital services is influenced by various factors, where human resources are the most determining aspect in realizing optimal service quality (Melyanti et al., 2020).

The Intensive Care Unit (ICU) is an independent part of the hospital structure, under the coordination of the service director, with specialized health personnel and equipped with advanced medical facilities and equipment. The ICU aims to provide therapy to patients with disease conditions, injuries, or complications that are life-threatening or have the potential to cause distress with an uncertain prognosis (Pardede et al., 2020). Nurses who work in the ICU have different roles and responsibilities compared to nurses in other service units, because they are required to have in-depth knowledge and special skills. These abilities include handling critical patients, making quick decisions, high accuracy, and accuracy in monitoring and assessing patient conditions that tend to be unstable. The role of nurses in critical nursing is a special competency in the field of nursing that focuses on handling patients with life-threatening conditions, so critical nursing services in the ICU must be carried out by a team that is trained and has experience in handling patients with medical emergencies (Pratama et al., 2020).

Excessive workload can trigger psychological tension in individuals, which in turn has the potential to cause stress. This condition can be influenced by various factors, such as high skill demands, work speed that exceeds individual capacity, and work volume that is too large (Arfani and Luturlean, 2018). An uncontrolled increase in workload can have a negative impact on the emotional state of nurses, so that the behavior displayed is sometimes not in accordance with patient expectations. Heavy workload also has a direct impact on the productivity of health workers, including nurses, who feel that the number of available manpower is not balanced with the number of tasks that must be completed. This imbalance can trigger the emergence of work stress, especially because all inpatients need effective and efficient services so that their health problems can be treated immediately and optimally (Maharani and Budianto, 2019).

The quality of hospital services is strongly influenced by nurses' workload, which includes all activities and responsibilities carried out while on duty in the nursing service unit. This workload consists of physical and mental loads, which if it exceeds individual capacity or is not balanced with physical abilities, can risk causing fatigue, health problems, and occupational diseases. Nurses' workload can be measured through various aspects, such as the types of tasks carried out according to the main and additional functions, the number of patients treated daily, monthly, and annually, the patient's health condition, the average number of patients handled, the types of direct and indirect actions required by patients, the frequency of implementation of actions, and the average time used in each nursing action. Analysis of nurses' workload also includes the suitability of the tasks carried out with their educational background, the amount of time allocated according to

working hours, and the availability of supporting facilities to support optimal task implementation (Barahama, Katuuk, and Oroh, 2019). In addition, the classification of patients in the inpatient room has an important contribution to the quality of nursing services, because through the classification system, patients will receive services according to their needs, as well as a reference in measuring the workload of nurses in each ward. Understanding the conditions and workload of nurses in the inpatient room is an important aspect in determining the need for nurses in quantity and quality, to ensure that the services provided run effectively and in accordance with established standards (Runtu and Hamel, 2018).

Based on data obtained from the World Health Organization (WHO) in 2016, nurses working in hospitals in the Southeast Asian region, including Indonesia, are known to face excessive workload, which is largely due to the assignment of non-nursing tasks. This condition has the potential to increase workload if it is not balanced with an adequate number of workers. Research conducted by the Indonesian National Nurses Association (PPNI) in 2018 also showed that 50.9% of nurses in four provinces in Indonesia experienced work stress, where one of the main causes was high workload. Workloads that exceed the capacity or ability of workers can result in physical and mental fatigue. Conversely, if work demands are too low compared to workers' abilities, it can lead to boredom. Thus, workload can be interpreted as an individual's process of completing tasks related to a position or job carried out within a certain period of time according to applicable work time standards (Gradian Putra Anantal, 2021).

Research conducted by Banin (2021) regarding the relationship between workload and the quality of nursing services shows that there is a significant relationship between the two variables, with a p-value of 0.023. These results indicate that the higher the workload experienced by nurses, the more at risk of reducing the quality of service provided at the hospital. This is because nurses are health workers who have a high risk of experiencing fatigue due to heavy workload. This condition is influenced by the characteristics of nurses' jobs that naturally demand physical and mental readiness in providing services continuously, coupled with the imbalance between the number of patients served and the number of nurses available. This imbalance has the potential to reduce the focus, accuracy, and speed of nurse response, resulting in a decrease in the quality of nursing services provided to patients.

Although many studies have examined the relationship between workload and quality of nursing care, there are some limitations that need to be considered. Some studies have focused more on nurses in inpatient settings in general rather than specifically in ICUs. In addition, existing studies rarely measure additional factors such as nurses' stress levels and job satisfaction that may moderate the relationship between workload and quality of care. More in-depth studies in the ICU environment are still needed to understand specifically how nurses' workload in this unit affects the quality of patient care.

Based on the literature review that has been presented, there is a research gap in understanding specifically the impact of workload on the quality of nursing services in the ICU. Factors such as nurse stress levels, workload management, and strategies to improve service quality have not been studied in depth. Therefore, this study seeks to fill this gap by analyzing the

relationship between nurses' workload and the quality of patient care in the ICU, as well as the factors that contribute to the quality of nursing services.

This study aims to determine the relationship between nurses' workload and the quality of care for patients in the ICU, by examining the factors that may influence this relationship. This study has novelty value in highlighting specific aspects of nurse workload in the ICU and its impact on the quality of care for patients. It is hoped that the results of this study can contribute to hospital management in managing nursing resources in order to improve the quality of health services, especially in critical care units such as the ICU.

METHODS

This research is a correlational study using a cross-sectional design, where data collection on independent and dependent variables is carried out simultaneously at one time (Notoadmodjo, 2018). The research sample amounted to 50 respondents obtained through purposive sampling technique, namely sample selection based on certain criteria in accordance with the research objectives. This study focused on describing and analyzing the relationship between nurses' workload and the quality of nursing services to patients treated in the ICU Room of RSUD Abdul Wahab Sjahranie Samarinda. Data analysis was conducted using the Chi-Square test to determine the existence of a significant relationship between the two variables.

RESULTS

Table. 1 Frequency Distribution Based on Respondent Characteristics (n=50)

Respondent Characteristics	Category	F(n)	Percentage (%)
Age	< 25 years	4	8
	25 - 35 years	29	58
	> 35 years	17	34
Gender	Male	15	30
	Female	35	70
Education	Diploma	25	50
	Bachelor	2	4
	Nursing Profession	23	46
Period of Employment	< 5 years	15	30
	5 - 10 years	25	50
	> 5 years	10	20
Total		**50**	**100**

The results of the study regarding the characteristics of nurse respondents based on age showed that out of a total of 50 respondents, 29 people (58%) were in the age range of 25-35 years, 17 people (34%) were more than 35 years old, and 4 people (8%) were less than 25 years old. Based on this data, it can be concluded that the majority of executive nurses serving in the ICU Room of RSUD Abdul Wahab Sjahranie Samarinda are in the age group of 25-35 years.

The characteristics of nurse respondents based on gender showed that out of 50 respondents, 35 people (70%) were female, and 15 people (30%) were male. Based on these results, it can be concluded that the majority of executive nurses on duty in the ICU Room of RSUD Abdul Wahab Sjahranie Samarinda are female.

The characteristics of nurse respondents based on education level showed that out of 50 respondents, 25 people (50%) were Diploma Three (D3) graduates, 23 people (46%) were Ners Professional graduates, and 2 people (4%) were Bachelor of Nursing graduates. Based on this data, it can be concluded that the majority of executive nurses in the ICU Room of RSUD Abdul Wahab Sjahranie Samarinda have a D3 Nursing educational background.

The characteristics of nurse respondents based on tenure showed that out of 50 respondents, 15 people (30%) had a tenure of less than 5 years, 25 people (50%) had a tenure between 5-10 years, and 10 people (20%) had a tenure of more than 10 years. Based on these results, it can be concluded that most of the executive nurses in the ICU Room of RSUD Abdul Wahab Sjahranie Samarinda have a working period in the range of 5-10 years.

Table 2. Identifying the Workload of Managing Nurses in the ICU Room

Workload	Frequency	Percentage (%)
Lightweight	8	16
Medium	34	68
Weight	8	16
Total	**50**	**100**

The results of research on workload perceptions of 50 respondents showed that 34 respondents (68%) stated that they had moderate workload, 8 respondents (16%) stated that they had light workload, and 8 respondents (16%) stated that they had heavy workload. Based on this data, it can be concluded that the majority of executive nurses in the ICU Room of RSUD Abdul Wahab Sjahranie Samarinda experience workload in the moderate category.

Table 3. Quality of Nurse Service in the ICU Room

Service Quality	Frequency	Percentage (%)
Less Good	4	8
Good	46	92
Total	**50**	**100**

The results of research on service quality showed that out of 50 respondents, 46 respondents (92%) stated that the quality of service was good, while 4 respondents (8%) stated that the quality of service was poor. Based on this data, it can be concluded that the majority of executive nurses in the ICU Room of RSUD Abdul Wahab Sjahranie Samarinda have good service quality.

Table 4. *Cross tabulation* Relationship Between Workload and Quality of Service for Nurses in the ICU

Workload	Service Quality					
	Good		Less Good		Total	
Lightweight	8	16,00%	0	0,00%	8	16,00%
Medium	34	68,00%	0	0,00%	34	68,00%
Weight	4	8,00%	4	8,00%	8	16,00%
Total	**46**	**92,00%**	**4**	**8,00%**	**50**	**100,00%**

The results of the study on the relationship between workload and service quality showed that out of 50 respondents, 34 respondents (68%) with moderate workload had good service quality. A total of 8 respondents (16%) with light workload also showed good service quality. A total of 4 respondents (8%) with heavy workload still showed good service quality, while 4 respondents (8%) with heavy workload showed poor service quality. This data indicates that the majority of nurses with moderate and light workloads tend to provide good service quality, while heavy workloads are more at risk of reducing service quality.

Table 5. Chi-Square Test Results

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22,826[a]	2	0,000
Likelihood Ratio	16,787	2	0,000
Linear-by-Linear Association	13,315	1	0,000
N of Valid Cases	50		

The Chi-Square test results show that the p-value = 0.000, where this value is smaller than the specified significance level ($p < 0.05$). Thus, it can be concluded that H1 is accepted, which means that there is a significant relationship between workload and the quality of nursing services to patients in the ICU Room of RSUD Abdul Wahab Sjahranie Samarinda. The relationship between the two variables has a significant level of closeness, so that the higher the workload of nurses, there is a tendency for the quality of service provided to decrease.

DISCUSSION

The results of the study of 50 executive nurses in the ICU Room of Abdul Wahab Sjahranie Samarinda Hospital showed that the majority of respondents were 25-35 years old (58%), female (70%), and had an educational background of Diploma Three Nursing (50%). Most nurses had 5-10 years of service (50%). A total of 68% of respondents felt moderate workload, and 92% stated that the quality of service provided was good. There is a significant relationship between workload and

service quality, where nurses with light and moderate workloads tend to provide good service. On the contrary, heavy workload has a risk of reducing service quality. Chi-Square test results showed a p value = 0.000 (p < 0.05), which confirmed a significant relationship between workload and the quality of nursing services.

According to Rohman and Ichsan (2021), workload is defined as a set or number of tasks and responsibilities that must be completed by an organizational unit or individual position holder within a certain period of time. In its implementation, workload to employees must be adjusted to their competence and work capacity. The mismatch between workload and employee capabilities can trigger various problems, which in turn have the potential to hinder employee performance in the future.

Suwanto and Priansa (2016) state that there are two main factors that influence workload, namely physical environmental factors and psychological environmental factors in the workplace, both of which can have positive and negative impacts. However, high workload is not always the cause of stress. Other factors such as ineffective supervision systems, instability of organizational conditions, lack of feedback on performance, and imbalance between authority and responsibility can also trigger perceived workload. When an employee is given great responsibility without commensurate authority, this can trigger job dissatisfaction. In addition, the mismatch between the target completion time and the volume of work given will increase the perception of workload. Therefore, it is necessary to set appropriate work time standards to complete a certain volume of work, which must be adjusted to the characteristics and needs of each organization.

According to Diana (2019), excessive workload can have a negative impact on various aspects, including a decrease in work quality, the emergence of customer complaints, and an increase in labor absenteeism. Workload that exceeds the capacity of the workforce will cause workers to experience physical and mental fatigue, resulting in decreased concentration, self-control, and accuracy at work. As a result, the work produced tends not to match the standards set by the organization. In addition, customer dissatisfaction can also arise due to non-optimal service, because the work results provided are not in accordance with customer expectations. Excessive workload can also lead to an increase in labor absenteeism, because physical fatigue risks causing health problems, which in turn has an impact on absence from work. Such absenteeism will affect the overall performance of the organization. Sari (2020) adds that quality is often defined as the ability to meet needs and provide satisfaction to customers. Good service quality creates long-term relationships between organizations and customers, because organizations are able to understand customer needs and expectations on an ongoing basis. An agency is considered good if in organizing its services it is able to pay attention to customer needs and satisfaction, one of which can be observed through the first impression when nursing services are provided.

Based on the results of research on 50 executive nurse respondents in the ICU Room of RSUD X, it was found that as many as 8 respondents (16%) experienced light workload, 34 respondents (68%) experienced moderate workload, and 8 respondents (16%) experienced heavy workload. The quality of service showed that 46 respondents (92%) provided good service quality, while 4 respondents (8%) showed poor service quality. The results of the analysis using the Pearson Chi-

Square test show the value of Asymp. Sig. (2-sided) of 0.00. Because the significance value is smaller than the significant level of 0.05 (p < 0.05), then according to the basis for decision making, it is concluded that H0 is rejected and H1 is accepted. Thus, there is a significant relationship between workload and nurses' service quality in the ICU Room of RSUD X.

This study is in line with the findings presented by Suryani and Rambe (2022) in a study entitled "Analysis of the Effect of Nurses' Workload on the Quality of Nursing Services at Padangsidimpuan City Hospital", which showed that nurses in the inpatient room spent 70.0% of working time for productive nursing activities, while 30.0% for non-productive activities. The results of the study also revealed that the quality of nursing services was dominated by the unfavorable category of 60.0%. Statistical tests showed a significant influence between nurse workload and the quality of nursing services, with a p value of 0.001. This finding is also reinforced by research conducted by Bik Billi Banin (2021) with the title "Relationship between Workload and Quality of Service Delivery to Patients" which concluded that there is a significant relationship between workload and the quality of nursing services to patients at Labuang Baji Hospital. The results of these two studies indicate that high workload can have a negative impact on the quality of nursing services.

Thus, it can be concluded that there is a significant relationship between nurses' workload and the quality of nursing services. The results of this study prove that an increase in workload has a significant effect on reducing the quality of service to patients. Therefore, it is important for hospital management to analyze and calculate workload appropriately to ensure a balanced distribution of work. This is so that excessive workload does not become a contributing factor to the decline in the quality of health services provided to patients, so as to realize optimal service quality.

CONCLUSIONS.

This study shows that there is a significant relationship between nurse workload and service quality in the ICU room. Statistical test results using Chi-Square showed a p-value = 0.000, which means that the higher the workload of nurses, the greater the risk of decreased service quality. The majority of nurses with moderate and light workloads still provide good quality services, while nurses with heavy workloads are more prone to experiencing a decrease in service quality.

This finding is in line with previous studies which show that excessive workload can cause physical and mental fatigue, thus reducing nurses' focus, accuracy, and response to patients. Therefore, it is important for hospital management to manage nurses' workload properly so that service quality remains optimal. A balanced distribution of tasks and the availability of adequate nursing staff can be a solution in improving the quality of health services in the ICU.

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