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Analysis of Factors Affecting Workload of AnesthesiologistsIn Indonesia

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ABSTRACT

Anesthesiologist is one of the professions that work in the operating room in providing anesthesia nursing services and is considered as one of the medical specialties with a high workload. The purpose of this study was to determine the factors that influence the workload of anesthesiologists in Indonesia. The study design was cross- sectional. The population taken is anesthesiologist throughout Indonesia. The data analysis used is a binary logistic regression multivariate test. The results of the analysis revealed that most of the anesthesiologists had a low workload, namely 240 respondents (59.3%). Work patterns (adj. OR: 1.65) and number of working hours (adj. OR: 2.60) are factors that have a significant relationship with the workload of anesthesiologists.

1. INTRODUCTION

Workload is defined by Webster as the amount of work or time expected from/given to work, the total amount of work that must be completed by a department or group of workers in a certain period of time (Lysaght, Fabrigar, Larmour-Trode, Stewart, & Friesen, 2012). Excessive workload will have an adverse impact on employees in general, which will cause fatigue both physically and mentally and will cause emotional reactions such as headaches, indigestion, and irritability. While the workload is too little there will also be a reduction in motion which will cause boredom.

The workload in the nursing profession is a very high-risk thing to experience. The workload of nurses working in hospitals is related to the nursing care that must be given to patients. The things that are considered in the workload of nurses are the number of patients treated, the condition or level of dependence of the patient, and the average number of days of patient care, direct and indirect nursing activities and health education as well as the average time, and the frequency of actions needed by the patient. (Minarsih, 2015).

One work unit that has a fairly complex workload is the nurse in the operating room. This unit is said to be quite complex because it involves the mental and physical activities of nurses in treating patients who are undergoing surgery. Operating room nurses are required to have high knowledge and concentration skills in all aspects of perioperative care (Eriawan, Wantiyah, & Ardiana, 2013).

Anesthesiologist is one of the professions that work in the operating room in providing anesthesia nursing services and is considered one of the medical specialties with a high workload.(Van Der Wal et al., 2018). Previous research was conducted by Luciana Bjorklund de lima in Nursing Workload in the postanesthesia care unit Hospital de Clinicas de Porto Alegre, RS, Brazil in 2011, the results obtained were that 50% of the workload of nurses was influenced by the length of stay in the postanesthesia care unit/recovery room and the duration operation. Based on this background, through this research we want to know what factors affect the workload of anesthesiologists in Indonesia

2. METHOD

This study uses a cross-sectional correlation design. The population of this study were all anesthetic administrators in Indonesia. The sample in this study were 405 anesthetists using cluster sampling technique. The inclusion criteria in this study were anesthesiologist who had an IPAI

Organization membership card, had an active Anesthesiologist Registration Certificate (STR), was working in anesthesia services in the operating room of a hospital institution, and was willing to be a respondent by signing an informed consent. . Exclusion criteria in this studywere members of the IPAI Organization who were no longer active in providing anesthesia services and members of the IPAI Organization who were on leave from work.

Data collection will be carried out by contacting the DPD IPAI chairman of each selected province. The anesthesiologists who were selected as potential respondents were then gatheredin the WhatsApp group to be given an explanation about the research. After the prospective respondent is willing to become a respondent by filling out informed consent, then the questionnaire in the form of a Google form is distributed to the respondent. Respondents were given ± 45 minutes to fill out the questionnaire which had previously been given an explanationof how to fill out the questionnaire.

3. RESULTS AND DISCUSSION

Based on table 4.1, it can be seen that most of the anesthesiologists were aged ≤ 45 years, namely 277 respondents (68.4%), while anesthetists aged > 45 years were 128 respondents (31.6%). It is known that the majority of anesthesiologists with male sex amountedto 326 respondents (80.5%) and with female gender there were 79 respondents (19.5%). Most of the educational levels of anesthesiologists were D3 Nursing Anesthesia, namely a total of
143 respondents (35.3%), while anesthesiologists with D4 Nursing educational level + anesthesia training were only 6 respondents (1.5%).

Table 1. General characteristics of anesthesiologists in Indonesia (n=405)

General Characteristics	n(%)
Age (years)	
≤ 45	277 (68.4)
> 45	128 (31.6)
Gender	
Man	326 (80.5)
Woman	79 (19.5)
Level of education	
D3 Anesthesia Nursing	143 (35.3)
D4 Anesthesia Nursing	63 (15,6)
D3 Nursing + Anesthesia Training	136 (33.6)
D4 Nursing + Anesthesia Training	6 (1.5)
S1 Nursing + Anesthesia Training	57 (14.0)

Table 2. Workload of anesthesiologists in Indonesia in 2021 (n=405)

Characteristics	n(%)
Workload	
Low	240 (59.3)
Tall	165 (40.7)

Based on table 4.2, it is explained that most of the anesthesiologists have a workload in thelow category, namely 240 respondents (59.3%) and in the high category, 165 respondents (40.7%).

Table 3. Factors related to the workload of anesthesiologists in Indonesia in 2021 (n=405)

Factor	Workload		p-value*
	Low n(%)	Tall n(%)	
Work Pattern			
One shift	145 (63.9)	82 (36.1)	0.033*
Shift Rotation	95 (53.4)	83 (46.6)	
Number of Working Hours			
≤ 48 hours/week	147 (52.5)	133 (47.5)	<0.001*
> 48 hours/week	93 (74.4)	32 (25.6)	
Years of service			
< 10 Years	107 (57.5)	79 (42.5)	0.513
≥ 10 Years	133 (60.7)	86 (39.3)	
Interpersonal Relations			
Low	61 (66.3)	31 (33.7)	1.118
Tall	179 (57.2)	134 (42.8)	
Social Support			
Low	71 (58.7)	50 (41.3)	0.876
Tall	169 (59.5)	115 (40.5)	

*chi-square test
** significant

Based on table 4.3, it is explained that the factors that have a relationship with the workload of the anesthetist are work patterns (p 0.033) and the number of hours worked (p <0.001). Most of the anesthesiologists with one shift work pattern had a low workload, namely 145 respondents (63.9%) and most anesthesiologists with working hours ≤ 48 hours/week had a low workload of 147 respondents (52.5%)).

Table 4. Multivariate analysis of factors related to anesthesiologist workload (n=405)

Variable	B	SE	Adj. OR	95% CI	p-values
Work Pattern					
one shift*					
Shift rotation	0.50	0.21	1.65	1.09 – 2.50	0.029
Number of Working Hours					
≤ 48 hours/week *					
> 48 hours/week	0.95	0.24	2.60	1.62 – 4.17	< 0.001

Based on table 4.4, it is known that anesthetists with a rotational shift work pattern areat risk of having a high workload 1.65 times greater than those with a one-shift work pattern (adj. OR = 1.65; 95% CI 1.09–2.50 ; p 0.029). Anesthesiologists with working hours > 48 hours/week are at risk of

having a high workload 2.60 times greater than thosewith working hours ≤ 48 hours/week (adj. OR = 2.60; 95% CI 1.62 – 4.17;p <0.001).

DISCUSSION

Based on the results of data analysis, it was found that the workload of the anesthesiologist was mostly in the low category, namely 240 respondents (59.3%). Alarcon (2011) states that excessive workload, including long working hours, the number of responsibilities that must be accepted, the number of tasks that must be completed, involvementin work, the level of flexibility in working time will affect the occurrence of burnout. A high workload can cause nurses to experience fatigue or burnout which will cause work stress for nurses which will then have an impact on decreasing job satisfaction. Swasti et al., 2018).

Researchers assume the low workload in this study is due to the influence of other factors, one of which is the length of service. Most of the work experience of anesthetists in this study was ≥ 10 years (54.1%) so they had experience and were used to complex work conditions. This statement is supported byKusumawati & Istiqomahi (2021) which states that someone who has worked in one job for a long time, then the worker has a realistic view of thesituation at hand. The longer the working period, the more experience he gets and the more accustomed he is to the work situations he encounters on a daily basis, this of course influences the worker's response to the workload faced, whether it is classified as low or high.

Based on multivariate analysis, workload has a positive relationship with work patterns and number of hours worked. Anesthetists with a rotational shift work pattern are at risk of having a high workload 1.65 times greater than those with a one-shift work pattern. This is also supported by the results of cross-tabulations which state that most anesthesiologists with one shift work pattern have a low workload, namely 145 respondents (63.9%).Vilia et al., (2014)inhis research also showed that the most experienced work fatigue were nurses with shift rotation(77.98%), especially night shifts which could result in sleep disturbances, digestive tract disorders and fatigue due to the lack of psychological satisfaction of workers on the night shift.While the morning work shift will be fresher because there is sufficient rest the night before and the number of nurses on duty in the morning shift is more so that the workload is distributedevenly.

Anesthesiologists with working hours > 48 hours/week are at risk of having a high workload 2.60 times greater than those with working hours ≤ 48 hours/week. This is also supported by the results of the cross-tabulation which stated that the majority of anesthesiologists with working hours ≤ 48 hours/week had a low workload, namely 147 respondents (52.5%). Working hours are the time used by workers to carry out work activities.The longer working hours, the higher the risk of workers experiencing burnout, because with increasing working hours, more and more activities are carried out. Activities are carried out using energy, both physical and non-physical activities. Energy expended in large quantities without adequate rest causes workers to experience fatigue.

4. CONCLUSION

Some things that can be concluded from this study are that the workload of anesthesiologists is mostly in the low category, namely 240 respondents (59.3%). Factors related to the workload of anesthesiologists are work patterns and number of hours worked. Anesthetists with a rotational shift work pattern are at risk of having a high workload 1.65 times greater than those with a one-shift work pattern. Most of the anesthesiologists with one shift work pattern have a low workload, namely 145 respondents (63.9%). Anesthesiologists with working hours > 48 hours/week are at risk of having a high workload 2.60 times greater than those with working hours ≤ 48 hours/week. most of the anesthesiologists with working hours ≤ 48 hours/week had a low workload, namely 147 respondents (52.5%).

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