

The Influence of Nurses' Mental Workload on the Implementation of Patient Safety with Organisational Citizenship Behaviour (OCB) in Indonesia

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ABSTRACT Patient safety is a critical component of quality healthcare and an essential benchmark for healthcare accreditation. However, incidents related to patient safety remain a concern both globally and nationally. This study aimed to examine the relationship between nurses' mental workload and the implementation of patient safety, with Organisational Citizenship Behaviour (OCB) as a moderating variable, at Tk II Pelamonia Hospital in Makassar, Indonesia. A cross-sectional observational design was used, involving 118 purposively selected nurses from a population of 170. Data were analysed using multiple linear regression. The majority of respondents were female (69.5%). The findings indicated that nurses' mental workload significantly influenced the implementation of patient safety. Moreover, OCB moderated this relationship, enhancing the positive effect of mental workload on safety practices. These results highlight the importance of managing mental workload and promoting OCB to improve patient safety outcomes in hospital settings.

INTRODUCTION

Hospitals are essential healthcare facilities that provide comprehensive secondary and tertiary-level individual services, as mandated by Law No. 44 of 2009 (Susilawati and Azzahra 2023). Among the indicators for assessing hospital performance is patient safety, which forms the foundation of quality healthcare. Patient safety is also a key component in healthcare accreditation processes, reflecting the institution's commitment to safe and effective patient care. Despite this, patient safety incidents remain a concern both globally and nationally. One contributing factor is the high workload among nurses, which may compromise the quality of care delivered. Increased patient visits and rising Bed Occupancy Rates (BOR) are indicators of this burden (Aulia 2021). Excessive workload, particularly when not matched with adequate rewards, can lead to decreased work performance and job dissatisfaction, which ultimately affects patient outcomes. OCB nurses provide support for the wider organisational, social and psychological environ-

ment and help achieve organisational goals by facilitating communication, strengthening relationships, and consistently reducing emotional tension or disturbance through the skills used.

The mental workload of nurses, defined as the time and cognitive effort required to treat patients, is a multidimensional construct influenced by work demands, environment, psychological resilience, and organisational factors (Rostami et al. 2021). As the primary providers of continuous care, nurses are in constant interaction with patients throughout the healthcare journey, from admission and treatment to discharge (Stimpfel et al. 2012). Their roles require not only physical presence but also emotional intelligence and decision-making capacity, particularly in high-stakes settings such as surgery or critical care units (Mubin and Jalal 2014). As one knows that working satisfaction is a psychological condition that is either pleasant or unpleasant for employees when considering their job. In a way, working satisfaction becomes an employee's reflected feeling towards their work (Goetz and Wald 2022). Emotional support from supervisors and coworkers will lead to increased nurse work engagement, which in turn increases OCB altruism. Through work engagement, emotional support from supervisors has a positive indirect relationship with OCB altruism, followed by emotional support from coworkers,

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which has a positive indirect relationship with OCB altruism (Pohl et al. 2022).

The director of Tk II Pelamonia Hospital Makassar has noted the mismatch between nurse-to-patient ratios and job complexity, further compounding the burden on nursing staff. Many tasks require partial or total assistance, yet staffing limitations mean that nurses are often required to work independently in high-risk settings, increasing the potential for patient safety incidents. Patient safety systems vary widely across countries, depending on cultural factors and organisational norms. These systems involve not only incident reporting and risk analysis but also proactive strategies to prevent harm (Amelia et al. 2023). One behavioural factor that has shown potential in improving healthcare outcomes is OCB or discretionary employee behaviour that supports organisational functioning beyond formal role requirements.

Despite the growing body of evidence linking nurse workload and patient safety, few studies in Indonesia have critically examined the moderating role of OCB. This research is thus timely and significant, offering insights into how both physical and mental workloads interact with behavioural factors to influence patient safety outcomes in the Indonesian healthcare context.

The objective of this study is to examine the influence of nurses' physical and mental workloads on the implementation of patient safety at Tk II Pelamonia Hospital Makassar, with OCB as a moderating variable.

METHODOLOGY

The study used an observational design with a cross-sectional approach to examine the relationship between nurses' workload and the implementation of patient safety, with OCB as a moderating factor. Data was collected over a period of three months from June 2024 to September 2024. The study population included 170 patients at Tk II Pelamonia Hospital Makassar, and a purposive sampling technique was used to select 118 participants who met the inclusion criteria. The data collection was carried out using a structured questionnaire, which was developed to measure three primary areas, that is, the mental and physical workload of nurses, the implementation of patient safety protocols, and

the presence of OCB among nurses. The workload section included questions related to the perceived physical and mental demands placed on nurses during their daily tasks.

The patient safety section assessed various safety practices within the hospital, such as risk assessments, incident reporting, and adherence to safety guidelines. The OCB section focused on behaviours such as voluntary participation in safety initiatives, helping colleagues, and overall job satisfaction, which may influence patient safety practices. Once the data was collected, multiple linear regression analysis was conducted to examine the relationships between nurses' workload, the implementation of patient safety measures, and the role of OCB as a potential moderating variable. This methodology enabled the researchers to explore how various factors, such as workload and OCB, affect patient safety outcomes in the hospital setting.

RESULTS

Table 1 presents the characteristics of the respondents based on age, gender, education and work period. The data reveals that the age distribution of the nurses was fairly evenly split, with 59 respondents (50.0%) aged between 25

Table 1: Respondent characteristics based on age, gender, education and work period

Age (years)	Number (n)	Percentage (%)
25-30 years	59	50.0
>30 years	59	50.0
Total	118	100.0
<i>Gender</i>		
Man	36	30.5
Woman	82	69.5
Total	118	100.0
<i>Education</i>		
	<i>n</i>	<i>%</i>
D3 equivalent	19	16.1
S1	70	59.0
Profession	27	22.9
S2	2	1.7
Total	118	100.0
<i>Years of Service</i>		
<1 year	14	11.9
15 year	53	44.9
6-10 year	27	22.9
11-15 years old	18	15.3
16-20 years old	4	3.4
>20 years old	2	1.7
Total	118	100

and 30 years, and the remaining 59 respondents (50.0%) being older than 30 years. In terms of gender, the majority of the respondents were female, accounting for 82 respondents (69.5%), while 36 respondents (30.5%) were male. Regarding educational background, most of the nurses had completed a Bachelor's degree (SI), that is, 70 respondents (59.0%), followed by a smaller proportion of nurses with a Master's degree, which consisted of only 2 respondents (1.7%). Finally, the length of service data indicated that the largest group of nurses had between 1 to 5 years of work experience, comprising 53 respondents (44.9%), while only 2 respondents (1.7%) had more than 20 years of service. These characteristics provide a broad overview of the demographic and professional backgrounds of the nursing staff at Tk II Pelamonia Hospital Makassar, which may influence their perceptions of workload, patient safety practices, and Organisational Citizenship Behaviour.

Table 2 presents the data on the nurse mental workload, Organisational Citizenship Behaviour, and patient safety implementation at Tk II Pelamonia Hospital Makassar. According to the data on mental workload, the majority of respondents (65 or 55.1%) reported experiencing a heavy mental workload, while 53 (44.9%) respondents indicated a mild mental workload. In terms of Organisational Citizenship Behaviour, most respondents displayed severe levels of OCB, with 100 (84.7%) nurses in this category, while only 18 (15.5%) reported a moderate level of OCB. Regarding patient safety implementation, a significant proportion of respondents, that is, 91 (77.1%), indicated that patient safety practices

were applied at a severe level, while 27 (22.9%) respondents reported a moderate level of patient safety implementation. These findings highlight the mental and behavioural dynamics within the hospital environment, which may influence the quality of care and patient safety outcomes at Tk II Pelamonia Hospital Makassar.

Table 3 illustrates the relationship between mental workload and OCB, as well as the influence of mental workload on patient safety implementation at Tk II Pelamonia Hospital Makassar. The data reveals that among nurses with a heavy mental workload, 16 (24.6%) exhibited moderate levels of OCB, while 51 (96.2%) displayed high levels of OCB. In contrast, 2 nurses showed a moderate mental workload (3.8%), and 51 (96.2%) respondents with high OCB. These results suggest that nurses with heavy mental workloads are more likely to display higher levels of OCB.

Additionally, the table shows that nurses with a heavy mental workload exhibited moderate patient safety practices, with 21 (32.3%) respondents in this category. In contrast, those with a mild mental workload had 6 (11.3%) respondents demonstrating moderate patient safety application. Nurses with a heavy mental workload exhibited a high level of patient safety implementation, with 44 (67.7%) respondents. On the other hand, nurses with a mild mental workload demonstrated a high level of patient safety application, represented by 47 (88.7%) respondents. The Chi-square test revealed a p-value of 0.002, indicating a significant relationship between mental workload and Organisational Citizenship Behaviour. However, for the influence of mental workload on patient safety implementation, the Chi-square test yielded a p-value of 0.007, suggesting no significant relationship between the two variables.

Table 4 presents the analysis of the influence of mental workload on patient safety through OCB. The results show that the coefficient value for the influence of mental workload on patient safety through OCB is -0.082, with a p-value of 0.264. Since the p-value is greater than the 0.05 significance level, this indicates that there is no significant influence of mental workload on patient safety through OCB. Therefore, the OCB variable does not act as an intervening

Table 2: Nurse workload, OCB, and patient safety implementation at Tk II Pelamonia Hospital

<i>Mental Load</i>	<i>Number (n)</i>	<i>Percentage (%)</i>
Heavy	65	55.1
Mild	53	44.9
Total	118	100.0
<i>OCB</i>		
Moderate	18	15.5
Severe	100	84.7
Total	118	100.0
<i>Patient Safety</i>		
Moderate	27	22.9
Severe	91	77.1
Total	118	100.0

Table 3: The effects of mental workload on OCB and patient safety implementation at Tk II Pelamonia Hospital

<i>Mental workload</i>	<i>OCB</i>				<i>Total</i>		<i>n̄ value</i>
	<i>Currently</i>		<i>Tall</i>				
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
Heavy	16	24.6	49	75.4	65	100.0	0.002
Moderate	2	3.8	51	96.2	53	100.0	
Amount	18	15.3	10.0	84.7	118	100.0	

<i>Mental workload</i>	<i>Patient Safety</i>				<i>Total</i>		<i>n̄ value</i>
	<i>Currently</i>		<i>Tall</i>				
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
Heavy	21	32.3	44	67.7	65	100.0	0.007
Moderate	6	11.3	47	88.7	53	100.0	
Amount	27	22.9	91	77.1	118	100.0	

Table 4: The influence of mental workload on the implementation of patient safety through OCB

<i>Specific indirect effects</i>	<i>Coefficient</i>	<i>T statistic</i>	<i>n̄ Values</i>
Mental workload OCB safety	-0.082	1.117	0.264

variable in the relationship between mental workload and patient safety implementation.

DISCUSSION

The Influence of Mental Workload on the Implementation of Patient Safety

Workload is an essential element in health-care settings, impacting the quality of service provided. Nurses often experience workloads at varying levels, both physically and mentally. While physical workload pertains to the manual or physical tasks required in nursing, mental workload involves cognitive demands such as decision-making, critical thinking, and memory recall. These workloads, although distinct, are often interconnected and can influence the quality of nursing care. This study, by using the NASA-TLX method, measured the mental workload of nurses, focusing on dimensions like mental demand, physical demand, time demand, own performance, effort, and frustration level. According to the researchers' findings, a signifi-

cant portion of nurses (55.1%) reported experiencing a heavy mental workload. This heavy workload is primarily attributed to the mental demands of nursing tasks. Many nurses indicated the need for significant cognitive resources to process patient information, recall medical histories, and make quick decisions in critical situations. The stress and mental fatigue experienced by nurses can have negative consequences on their performance, leading to reduced job satisfaction, increased absenteeism, and even burnout (Boamah et al. 2018). The present study aligns with these findings, as 22 percent of nurses reported feeling psychologically unsafe in their work environment, which is likely to contribute to stress and poor work productivity.

In this research, patient safety was considered a top priority, with the majority (77.1%) of respondents indicating a high or very good implementation of patient safety measures. However, 22.9 percent of nurses reported moderate patient safety implementation. This discrepancy could be attributed to the diverse work environments, the varying levels of mental workload,

and the resources available to healthcare workers (Stoffers et al. 2020). It is crucial to recognise that while mental workload impacts work performance, the implementation of patient safety also depends on factors such as organisational culture, leadership, and training.

Despite these insights, the Chi-square test revealed a p-value of 0.007, indicating no significant relationship between mental workload and the implementation of patient safety. This result contrasts with study that reported a relationship between mental workload and patient safety outcomes (Magalhaes et al. 2017). One possible explanation for this discrepancy could be the complex nature of patient safety, which depends on multiple factors beyond just the mental workload of nurses. These include hospital policies, team dynamics, and the overall healthcare environment (Stimpfel et al. 2012). Furthermore, in line with COR theory, the energy-depleting effect of emotional exhaustion drives employees to preserve resources to prevent additional resource losses. Workers might be too exhausted to commit to the OCB-civic virtue (Liu et al. 2019).

It is also noteworthy that the mental demands nurses face can negatively impact their ability to adhere to safety protocols. In particular, work pressure and excessive time demands may lead to errors such as missed hand hygiene practices, improper patient identification, or inadequate communication, which can ultimately compromise patient safety (Demir et al. 2025). Thus, mental workload should be considered a key factor when evaluating patient safety, but it should be addressed in conjunction with organisational and environmental factors.

The Influence of Mental Workload Through OCB on the Implementation of Patient Safety

In the present study, the influence of mental workload on OCB was explored, with the results showing a strong correlation between heavy mental workload and moderate-to-high levels of OCB. Nurses with a heavy mental workload were more likely to demonstrate high OCB, as evidenced by 96.2 percent of respondents showing high OCB despite a heavy workload. OCB, defined as discretionary behaviours that go beyond formal job requirements, plays a critical role in enhancing patient safety and overall hos-

pital performance (Clark et al. 2014). This could be due to the nurses' intrinsic motivation to go above and beyond their formal duties, even in high-pressure environments.

However, a Chi-square test revealed a significant p-value of 0.002, indicating a relationship between mental workload and OCB. This finding supports the literature on how high mental workloads can drive nurses to engage in extra-role behaviours, possibly as a coping mechanism or due to internalised professional responsibility (Song et al. 2024). The workload may push nurses to adopt positive attitudes toward patient care, fostering behaviours that contribute to a better patient experience. However, this positive correlation should be critically examined, as excessive workloads could lead to burnout, which could diminish the quality of OCB in the long term (Tran et al. 2021).

Despite the strong association between mental workload and OCB, the path analysis using the PLS method revealed that OCB does not significantly mediate the relationship between mental workload and patient safety implementation. This is a crucial finding, as it suggests that while OCB may positively affect the quality of care, it does not act as a conduit through which mental workload directly influences patient safety. Other factors, such as institutional support, workload distribution, and work-life balance, might have more pronounced effects on patient safety outcomes (Tran et al. 2021). In conclusion, while the results indicate that heavy mental workload correlates with moderate-to-high levels of OCB and has a limited effect on patient safety, the underlying complexities of these relationships warrant further exploration. Future research should consider additional variables such as emotional intelligence, teamwork and managerial support, which could influence the impact of mental workload on both OCB and patient safety outcomes. Additionally, strategies aimed at reducing nurses' mental workload, such as better task management, staffing adjustments, and stress management interventions, could be beneficial in improving both the work environment and patient safety outcomes.

CONCLUSION

In conclusion, this study demonstrates that while mental workload has a significant impact

on nurses' Organisational Citizenship Behaviour, it does not show a direct significant relationship with the implementation of patient safety. Despite the high mental workload, nurses maintained high levels of OCB, indicating that other factors may contribute to effective patient safety practices. The lack of a significant effect on patient safety suggests that additional elements, such as organisational support and effective communication, play key roles. Future studies should consider exploring other variables, like team dynamics and emotional resilience, to better understand how mental workload affects patient safety outcomes.

RECOMMENDATIONS

Based on the findings, it is recommended that hospitals focus on reducing nurses' mental workload by improving staffing and providing support during peak times. Encouraging Organisational Citizenship Behaviour (OCB) through a supportive work environment and recognition can further enhance patient care. Although patient safety measures are being implemented well, continuous training and audits on areas like hand hygiene and medication safety are crucial. Future research should explore the link between physical and mental workload and patient safety to better target interventions. Additionally, mental health support for nurses should be prioritised to reduce burnout and improve care quality.

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Not applicable.

CONSENT FOR PUBLICATION

Not applicable.

COMPETING INTERESTS

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