

FACTORS INFLUENCING THE IMPLEMENTATION OF PATIENT SAFETY AT RSUD ZUBIR MAHMUD, SENEUBOK BARO, EAST ACEH

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Abstract

Patient safety is a key indicator of hospital service quality, influenced by various individual and organizational factors. The optimal implementation of patient safety requires adequate knowledge, strong motivation, balanced workload, appropriate job design, sufficient work experience, and a fair reward system. This study aimed to analyze the influence of knowledge, motivation, workload, job design, length of service, and rewards on the implementation of patient safety at RSUD Zubir Mahmud. This study employed a quantitative design with a cross-sectional approach. The study population consisted of healthcare workers at RSUD Zubir Mahmud, with a total sample of 85 respondents selected using total sampling technique. Data were collected using a structured questionnaire. Data analysis was conducted using the chi-square test followed by multiple logistic regression. The results showed that knowledge, motivation, workload, job design, length of service, and rewards had a significant effect on patient safety implementation ($p < 0.05$). Multiple logistic regression analysis indicated that all variables were significant, with rewards identified as the most dominant factor ($B = 3.015$; $p = 0.006$; $OR = 20.379$). This implies that healthcare workers who receive appropriate rewards are approximately 20 times more likely to implement patient safety compared to those who receive less appropriate rewards. In conclusion, patient safety implementation is influenced by both individual and organizational factors, with rewards as the most dominant factor. Hospitals are recommended to develop performance- and safety-based reward systems, enhance healthcare worker training, and manage workload proportionally to strengthen the patient safety culture.

Keywords: Patient Safety, Knowledge, Motivation, Workload, Job Design, Length Of Service, Rewards

Introduction

According to the World Health Organization (WHO), a hospital is an integral part of a social and medical organization that provides comprehensive healthcare services, including curative and rehabilitative care, and also functions as a center for training health personnel and conducting biosocial research (World Health Organization, 2023). As public awareness of healthy living increases, the demand for safe, effective, and high-quality healthcare services continues to grow. Consequently, hospitals are required to ensure service quality, with patient safety recognized as a key indicator of healthcare quality (WHO., 2023).

Patient safety refers to a system designed to prevent harm to patients caused by errors in healthcare delivery that are actually preventable (World Health Organization, 2021). Globally, patient safety remains a major public health issue. WHO reports that approximately 134 million adverse events occur annually in low- and middle-income countries, resulting in around 2.6 million deaths, with nearly

50% considered preventable (WHO, 2021). This highlights the urgency of strengthening patient safety as a global health priority.

Nurses play a strategic role in implementing patient safety, as they provide continuous care and interact directly with patients, families, and other healthcare professionals. Their role includes ensuring safe nursing care and preventing adverse events throughout the care process. The successful implementation of patient safety is influenced by multiple factors, including individual, organizational, and psychological aspects (AHRQ., 2022).

Individual factors include knowledge, attitudes, skills, and work experience, while organizational factors involve workload, job design, supervision, and management support. Psychological factors, particularly motivation and perception of safety culture, also significantly influence patient safety practices (Armstrong, 2020). Adequate knowledge enables nurses to correctly apply safety procedures, while positive attitudes improve compliance and reduce the risk of errors. Conversely, excessive workload, communication failures, and lack of concentration may increase the likelihood of patient safety incidents (Carayon et al., 2014).

In addition, organizational elements such as job design, length of service, and reward systems play an important role in shaping nurses' performance. A well-structured job design improves efficiency and reduces workload imbalance. Work experience enhances skills and adherence to standard procedures, while fair and appropriate rewards both financial and non-financial serve as strong motivators for maintaining high-quality care and patient safety (Robbins & Judge, 2021).

Despite ongoing efforts, the implementation of patient safety in Indonesia remains suboptimal. Incident reporting is still low, with only a small proportion of hospitals actively reporting patient safety incidents. This reflects persistent challenges such as a blaming culture, fear of sanctions, and limited awareness regarding the importance of reporting incidents as part of quality improvement (Ministry of Health Republic of Indonesia, 2022). Furthermore, a significant proportion of incidents involve nurses, indicating gaps in compliance with standard procedures, communication, and patient safety practices.

At the regional level, including Aceh Province, patient safety implementation is also not optimal, as reflected in low reporting rates and moderate safety culture levels. Preliminary data from RSUD Zubir Mahmud Seneubok Baro, East Aceh, showed that 20 patient safety incidents were recorded between 2021 and 2025, including near misses, no-harm incidents, and adverse events. These incidents were mainly associated with medication errors, patient misidentification, delayed treatment, and patient falls, often linked to high workload and non-compliance with standard operating procedures.

Initial observations also revealed variations in knowledge, motivation, job design, length of service, and reward systems among nurses. Some nurses demonstrated adequate knowledge, while others lacked understanding of certain safety practices. Motivation levels were generally moderate, influenced by workload and limited rewards. Job design issues, such as uneven task distribution, were also identified, along with relatively short work experience among many nurses. In addition, reward systems, particularly for non-civil servant staff, were perceived as inadequate, potentially affecting motivation and consistency in implementing patient safety.

Based on these considerations, this study aims to analyze the factors influencing the implementation of patient safety among nurses at RSUD Zubir Mahmud Seneubok Baro, East Aceh, focusing on knowledge, motivation, workload, job design, length of service, and rewards.

Methods

This study used a quantitative analytic design with a cross-sectional approach, in which all variables were measured at a single point in time to examine the relationships between independent and dependent variables. The cross-sectional design is appropriate for identifying associations and prevalence in a population efficiently (Creswell & Creswell, 2018; Polit & Beck, 2021). The study was conducted at RSUD Zubir Mahmud, Seneubok Baro, East Aceh, Indonesia, from November 2025 to February 2026. The population consisted of all nurses working in inpatient units, totaling 92 individuals. A total of 85 respondents who met the inclusion criteria were selected using a total sampling technique, where all eligible members of the population are included as study participants (Sugiyono, 2020; Notoatmodjo, 2018) .

The dependent variable in this study was patient safety implementation, while the independent variables included knowledge, motivation, workload, job design, length of service, and rewards. These variables were measured using a structured questionnaire developed based on theoretical concepts. Measurement scales were ordinal and categorized based on scoring criteria (Ghozali, 2021).

The research instrument was tested for validity and reliability through a pilot study involving 20 respondents with similar characteristics. Validity testing used Pearson product-moment correlation, where items were considered valid if the correlation coefficient exceeded the critical value. Reliability testing was conducted using Cronbach's alpha, with a threshold of $\alpha > 0.70$ indicating acceptable internal consistency.

Data collection involved primary and secondary data. Primary data were obtained through self-administered questionnaires distributed directly to respondents after obtaining informed consent. Secondary data were collected from hospital records, including nurse workforce data and patient safety incident reports.

Data processing included editing, coding, entry, and cleaning to ensure data accuracy and completeness (Notoatmodjo, 2018). Data analysis was performed using SPSS software and consisted of univariate, bivariate, and multivariate analyses. Univariate analysis described the distribution of variables using frequencies and percentages. Bivariate analysis was conducted using the Chi-square test to assess the relationship between independent and dependent variables, with a significance level of $p < 0.05$. Multivariate analysis was performed using multiple logistic regression to identify the most dominant factors influencing patient safety implementation, with results expressed as Odds Ratios (OR)

Result

1. Characteristics of Respondents

A total of 85 nurses participated in this study. The majority of respondents were aged 36–45 years (47.0%), female (62.4%), and held a professional nursing degree (Ners) (61.2%)

Table 1. Characteristics of Respondents (n = 85)

Variable	Category	n	%
Age	<35 years	15	17.6
	36–45 years	40	47.0
	>45 years	20	23.5
Gender	Male	32	37.6
	Female	53	62.4
Education	Diploma (D3)	30	35.3
	Ners	52	61.2
	Master (S2)	3	3.5

2. Univariate Analysis

Most respondents had low knowledge (56.5%), low motivation (55.3%), and high workload (52.9%). More than half reported inappropriate job design (52.9%) and inappropriate rewards (47.1%). Patient safety implementation was almost evenly distributed, with 50.6% non-compliant and 49.4% compliant.

Table 2. Distribution of Key Variables

Variable	Category	n	%
Knowledge	Low	48	56.5
	Good	37	43.5
Motivation	Low	47	55.3
	Good	38	44.7
Workload	High	45	52.9
	Low	40	47.1
Job design	Inappropriate	45	52.9
	Appropriate	40	47.1
Length of service	≤1 year	45	52.9
	>1 year	40	47.1
Reward	Inappropriate	40	47.1
	Appropriate	45	52.9
Patient safety	Non-compliant	43	50.6
	Compliant	42	49.4

3. Bivariate Analysis

All independent variables showed a significant relationship with patient safety implementation ($p < 0.001$).

Table 3. Bivariate Analysis of Factors Associated with Patient Safety

Variable	p-value	Result
Knowledge	0.000	Significant
Motivation	0.000	Significant
Workload	0.000	Significant
Job design	0.000	Significant
Length of service	0.000	Significant
Reward	0.000	Significant

4. Multivariate Analysis

Reward was the most dominant factor influencing patient safety implementation ($p = 0.004$; OR = 21.512), indicating that nurses receiving appropriate rewards were approximately 21 times more likely to implement patient safety compared to those receiving inadequate rewards.

Table 4. Final Logistic Regression Model

Variable	B	p-value	OR (Exp B)	95% CI
Knowledge	1.402	0.124	4.062	0.680–24.263
Job design	0.669	0.494	1.952	0.287–13.280
Length of service	1.003	0.297	2.809	0.403–19.553
Reward	3.069	0.004	21.512	2.590–178.682

Discussion

This study examined factors associated with the implementation of patient safety among nurses at RSUD Zubir Mahmud, Aceh Timur. The main variables analyzed included knowledge, motivation, workload, job design, length of service, and reward. The findings indicate that patient safety implementation is influenced by multiple organizational and individual factors, with reward emerging as the most dominant predictor.

1. Implementation of Patient Safety

The results showed that nearly half of the respondents (49.4%) did not implement patient safety properly. This finding suggests that patient safety practices among nurses are still suboptimal. Similar findings have been reported in other developing healthcare systems, where adherence to patient safety standards remains inconsistent due to workload pressure, limited training, and organizational constraints (WHO, 2021; de Vries et al., 2022).

Patient safety is strongly influenced by compliance with standard operating procedures (SOPs), communication effectiveness, and clinical discipline. Weak implementation observed in this study such as low compliance in patient identification and infection prevention reflects gaps in safety culture within hospital settings. According to recent evidence, strong patient safety culture is essential to reduce adverse events and improve healthcare (Rodziewicz et al., 2023).

2. Knowledge and Patient Safety

The study found a significant relationship between knowledge and patient safety implementation ($p = 0.000$). Nurses with higher knowledge were more likely to implement patient safety practices correctly.

This is consistent with recent findings indicating that knowledge is a fundamental determinant of safe clinical practice. A study by Abdi et al. (2022) emphasized that nurses with adequate patient safety knowledge demonstrate better adherence to clinical guidelines and fewer procedural errors (Abdi et al., 2022). Similarly, O'Donovan and McAuliffe (2023) reported that continuous education and training significantly improve safety compliance among healthcare workers (O'Donovan & McAuliffe., 2023). However, the present study also revealed gaps in specific areas such as effective communication and patient safety targets, indicating the need for continuous professional development programs.

3. Motivation and Patient Safety

Motivation was significantly associated with patient safety implementation ($p = 0.000$). Nurses with higher motivation showed better compliance with safety procedures.

This finding aligns with Self-Determination Theory, which explains that intrinsic and extrinsic motivation strongly influence healthcare performance (Deci & Ryan, 2020). In healthcare settings, motivated nurses are more likely to follow safety protocols and demonstrate accountability in patient care. Recent studies also support this result. For instance, Wei et al. (2021) found that organizational support and leadership encouragement significantly increase nurses' motivation, which in turn improves patient safety behavior. Lack of managerial support, as observed in this study, may reduce motivation and compromise safety performance. (Wei et al., 2021).

4. Workload and Patient Safety

Workload was significantly related to patient safety implementation ($p = 0.000$). Nurses with higher workloads were less likely to comply with patient safety standards.

High workload is widely recognized as a major risk factor for patient safety incidents. According to Carayon and Gurses (2021), excessive workload increases cognitive fatigue, reduces attention, and leads to procedural non-compliance (Carayon & Gurses., 2021). Similarly, Jones et al. (2022) reported that nurse-to-patient ratio imbalance significantly increases the risk of medical errors (Jones et al., 2022). In this study, most respondents reported insufficient time to apply safety procedures, indicating structural workload problems within the hospital. This condition may increase burnout and negatively affect care quality.

5. Job Design and Patient Safety

Job design was also significantly associated with patient safety implementation ($p = 0.000$). Poor job clarity and unclear SOPs reduced compliance with safety standards.

Effective job design is essential for role clarity and workflow efficiency. According to Parker (2020), well-designed jobs improve performance by reducing ambiguity and enhancing accountability (Parker, 2020). Recent healthcare studies also show that unclear task distribution increases errors and reduces teamwork effectiveness (Li et al., 2021). In this study, respondents reported unclear SOPs and role confusion, which likely contributed to inconsistent patient safety implementation.

6. Length of Service and Patient Safety

Length of service showed a significant relationship with patient safety ($p = 0.000$). Nurses with longer work experience demonstrated better safety implementation.

This finding is consistent with previous research showing that experience enhances clinical judgment and procedural accuracy. According to Alenius et al. (2021), experienced nurses are more familiar with hospital protocols and better able to anticipate risks in patient care (Alenius et al., 2021).

However, experience alone is not sufficient without continuous training and updates in patient safety standards.

7. Reward as the Most Dominant Factor

The multivariate analysis revealed that reward was the most dominant factor influencing patient safety implementation ($p = 0.004$; OR = 21.512). Nurses who perceived appropriate rewards were 21 times more likely to implement patient safety properly.

This finding highlights the strong influence of extrinsic motivation in healthcare performance. Recent studies confirm that fair compensation, recognition, and incentive systems significantly improve healthcare workers' adherence to safety standards (Shin et al., 2022; World Health Organization, 2022).

When nurses feel valued and fairly rewarded, their job satisfaction and commitment increase, leading to better compliance with safety procedures. Conversely, inadequate reward systems can reduce motivation and increase turnover intention, which negatively impacts patient safety outcomes.

Conclusion

This study concludes that the implementation of patient safety among nurses at RSUD Zubir Mahmud is influenced by several factors, including knowledge, motivation, workload, job design, length of service, and reward. All variables showed a significant relationship with patient safety implementation at the bivariate level ($p = 0.000$).

However, based on multivariate analysis, reward is the most dominant factor affecting patient safety implementation ($p = 0.004$; OR = 21.512). Nurses who perceived appropriate rewards were significantly more likely to implement patient safety practices compared to those who perceived inadequate rewards.

Overall, improving reward systems, strengthening motivation, optimizing workload, clarifying job design, and enhancing continuous training are essential strategies to improve patient safety implementation in the hospital.

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