WHAT ARE THE EFFECTIVE PATHWAYS TO IMPROVE PATIENT SAFETY CULTURE IN NURSES?

Surianti [1], Andi Zulkifli [2], Andi Indahwaty AS [3], Fridawaty Rivai [4], Herlina A Hamzah [5] and Sangkala [6]

[1] Student of Master Program in Hospital Administration, Faculty of Public Health, Hasanuddin University, Indonesia. Email: suriantisaing84@gmail.com.
[2] Department of Epidemiology, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia. Email: zulkifliabdullah@yahoo.com, ORCID ID: 0000-0003-4437
[3] Hospital Administration Study Program, Faculty of Public Health, Hasanuddin University, Indonesia, Hasanuddin University Hospital, Indonesia.
Email: idhasidin@unhas.ac.id, ORCID ID: 0000-0002-9362-0780
[4] Hospital Administration Study Program, Faculty of Public Health, Hasanuddin University, Indonesia, Hasanuddin University Hospital, Indonesia.
Email: fridarivai@yahoo.com, ORCID ID: 0000-0002-7336-7001
[5] PhD in Hospital Administration Study Program, Faculty of Public Health, Hasanuddin University, Indonesia. Email: herlinahamzah@yahoo.com
[6] Department of Administrative Sciences, Faculty of Social and Political Sciences, Hasanuddin University, Indonesia. Email: sangkalarewa@gmail.com, ORCID ID: 0000- 0003-0582-7026

Abstract

Background: Approximately 1 in every 10 patients is injured in healthcare and more than 3 million deaths occur each year due to unsafe care. Recent data shows that patient injury is the 14th leading cause of morbidity and mortality worldwide. The importance of patient safety and the development of a safety culture to protect patients from harm are gradually gaining attention in quality improvement efforts. To improve patient safety, hospitals are increasingly realizing the importance of establishing a patient safety culture. **Objective:** This study aims to determine the effect of structural empowerment, transformational leadership and job satisfaction on patient safety culture in nurses at Lamaddukkelleng Hospital, Wajo Regency. **Methods:** This study was conducted at Lamaddukkelleng Hospital, Wajo Regency using Cross Sectional design in quantitative research. The number of respondents was 217 nurses. Exhaustive sampling was used to obtain the sample. Data were analyzed using SPSS software for descriptive statistics and Amos software to test the hypothesized model. **Results:** Univariate analysis obtained patient safety culture 70.86% (moderate). The results of bivariate analysis using Chi-Square showed that (p value <0.05) means that there is a relationship between structural empowerment, transformational leadership style, and nurse job satisfaction on patient safety culture. The multivariate path analysis showed that the coefficient value of the direct effect of structural empowerment was ($\beta=-0.092$), transformational leadership style was ($\beta=-0.014$), and nurses' job satisfaction was ($\beta=0.234$) on patient safety culture. Furthermore, the direct effect of structural empowerment ($\beta=0.384$) and transformational leadership style ($\beta=0.296$) on nurses' job satisfaction. The indirect effect of structural empowerment ($\beta=0.069$) and transformational leadership style ($\beta=0.090$) on patient safety culture through nurse job satisfaction. **Conclusion:** The direct effect pathway of job satisfaction is an effective model for improving patient safety culture in nurses. This study emphasizes that hospitals should examine factors that can increase nurses' job satisfaction including through the implementation of structural empowerment and transformational leadership style of the head of the room. High job satisfaction can contribute greatly to improving patient safety culture.

Keywords: Structural; Empowerment; Leadership; Transformational; Job Satisfaction.

INTRODUCTION

The World Health Organization (WHO) 2023 revealed that approximately 1 in every 10 patients is injured in healthcare and more than 3 million deaths occur annually due to unsafe care. Using conservative estimates, recent data shows that patient injuries are the 14th leading cause of morbidity and mortality worldwide [1]. Patient safety is

the absence of preventable harm to patients during the healthcare process and the reduction of the risk of unnecessary harm associated with healthcare to an acceptable minimum. Therefore, providing safe and high-quality healthcare is a global challenge for healthcare systems and organizations [2]. Hospitals as a modern health service that is a very complex organization because it is capital- intensive, technology-intensive, labor-intensive, profession-intensive, system-intensive, and quality-intensive and risk-intensive, so it is not surprising when incidents occur in patient safety [3]. As hospitals continue to strive to improve patient safety and quality, hospital leaders increasingly recognize the importance of building a patient safety culture. Patient safety culture refers to the beliefs, values, and norms shared by healthcare practitioners and staff throughout the hospital that influence their actions and behaviors [4]. A patient safety culture will significantly reduce incidents, thereby increasing hospital accountability in the eyes of patients and the public and ultimately improving hospital performance [5].

The WHO developed four categories of factors that are strongly associated with patient safety culture. The individual factor category comprises situation awareness, decision-making, job satisfaction, stress and burnout. The teamwork factor category comprises teamwork, leadership style and supervision. The organizational and management factor category consisted of safety culture, manager leadership, and communication. The environmental factor category consists of work environment and hazards [2]. An adequate atmosphere can increase job satisfaction, can improve performance and patient safety [6]. One way to increase nurses' job satisfaction that is being developed in various parts of the world is to empower nurses both from a structural and psychological perspective [7], [8]. According to [9] structural empowerment will make workers feel that their work environment provides opportunities for growth and access needed by the workforce to carry out job demands. Furthermore, structural empowerment is associated with patient safety culture, where the level of structural empowerment of nurses is considered to improve patient safety culture [10]. Building a safety culture that involves professionals is important and requires support from the role of the organization in efforts to improve patient safety [11]. In line with research findings [12] that a strong safety culture needs to be supported by a strong leadership style capable of managing patient safety performance and human resource management systems. Transformational leadership style contributes positively to the safety climate transformational leadership is a significant predictor of patient safety culture [13].

Based on some research results between structural empowerment variables, transformational leadership variables, job satisfaction variables, and patient safety culture variables are mutually influential and positively related. So that researchers are interested in conducting.

Strategic studies at the managerial level and functional level of nurses to analyze the influence of structural empowerment, transformational leadership, and patient satisfaction on patient safety culture in nurses. This is a separate point in improving nurse services in hospitals, especially in improving service quality and human resource management.

RESEARCH METHODS

The type of research used is quantitative research with a cross sectional design. This research was conducted at Lamaddukkelleng Hospital, Wajo Regency from May to June 2024. The population in this study were all nurses working at Lamaddukkelleng Hospital, Wajo Regency, totaling 217 people with executive sampling technique.

Data collection was carried out using a research instrument in the form of a questionnaire that had been tested for validity and reliability, which showed that the questionnaire was valid and reliable so that it could be used. Structural empowerment uses the Condition for Work Effectiveness-II (CWEQ-II) questionnaire, which consists of 19 question items that measure structural empowerment in the workplace, described by Kanter (formal power, informal power, information, support, access to resources and opportunities). Transformational leadership can be measured using an adaptation of the Multifactor Leadership Questionnaire (MLQ) instrument developed by [14] consisting of 16 question items measuring four dimensions (idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration). Job satisfaction was measured by a questionnaire based on [15] with 6 dimensions (work itself, salary and wages, promotion opportunities, supervision by leaders, coworkers, and work environment). Patient safety culture was measured using the HSOPSC (Hospital Survey on Patient Safety Culture) 2. 0 instrument developed by AHRQ (Agency for Healthcare Research and Quality) in 2019 [4], with 10 dimensions (communication about errors, openness of communication, handover and information exchange, hospital management support for patient safety, organizational learning-continuous improvement, reporting safety events, response to errors, management of staff and workload, supervisors, managers (clinic leaders) support patient safety, teamwork).

Data Analysis

All data were analyzed using SPSS software for descriptive statistics and Amos software to test the hypothesized model. Univariate analysis analyzed variables descriptively by calculating the frequency distribution and proportion to determine the characteristics of the research subjects. Bivariate analysis was conducted using the Chi Square test to see the influence between each independent variable on the dependent variable. Multivariate analysis with the path analysis method was chosen to map the most effective and short path from the independent variable to the related dependent variable. Path analysis was used to see how much direct influence and indirect influence structural empowerment variables, transformational leadership style, and job satisfaction have on patient safety culture.

RESULTS

217 nurses participated in this study. The nurses who became the research sample observed had different characteristics. Table 1 shows the characteristics of respondents who work as nurses at Lamaddukkeleng Hospital, Wajo Regency.

Table 1: Distribution of respondents based on general characteristics of nurses at Lamaddukkelleng Hospital, Wajo Regency in 2024

Characteristics		n	%
Last education	D3 Nursing	57	26,3
S1 Nursing		152	70
Master of Nursing		8	3,7
Length of Service	1 - 2 years	15	6,9
3 - 5 years		18	8,3
6 - 10 years		28	12,9
> 10 years		156	71,9
Work Unit	Emergency Room	29	13,4
Inpatient		122	56,2
Outpatient		28	12,9
Operation Room		19	8,8
Intensi Care Unit		19	8,8
Source: Primary Data			

Based on table 1 above, the majority of the characteristics of the last education of respondents are Strata 1 (S1) Nursing as many as 152 people (70%). Based on the length of work, it is known that the majority of respondents have a tenure of > 10 years at 71.9%. The installation with the highest number of respondents is the inpatient installation with a total of 122 people, 56.2%.

Table 2: Frequency distribution of research variable dimensions at Lamaddukkelleng Hospital, Wajo Regency in 2024

Variables	Dimensions	High		Low		Mean (%)
		n	%	n	%	
Patient Safety	Communication About Error	172	79,3	45	20,7	70,86
Culture	Communication Openness	138	63,6	79	36,4	
	Handoffs and Information Exchange	69	31,8	148	68,2	
	Hospital Management Support for Patient Safety	100	46,1	117	53,9	
	Organizational Learning-Continuous Improvement	115	53	102	47,0	
	Reporting Patient Safety Events	129	59,4	88	40,6	
	Response to error	45	20,7	172	79,3	
	Staffing and Work Pace	34	15,7	183	84,3	
	Supervisor, Manager, or Clinical Leader Support for Patient Safety	114	52,5	103	47,5	
	Teamwork	142	65,4	75	34,6	

Source: Primary Data

Based on table 2 above, shows the results of the overall perception analysis of structural empowerment at Lamaddukkelleng Hospital, Wajo Regency, are in the high category, namely 77.86%, with the highest dimension being access to information by 99.5%. The results of the overall perception analysis of the transformational leadership style of the head of the room are in the high category, which is 81.51%, with the highest dimension being individual consideration of 96.3%. The results of the analysis of the overall perception of nurses' job satisfaction were 76.24%, with the highest dimension being the job itself at 98.%. The results of the analysis of the perception of patient safety culture in nurses are in the medium category, namely 70.86%, with the highest dimension of communication about errors at 79.3%.

Table 3: Analysis of the Effect of independent variables on the dependent at Lamaddukkelleng Hospital, Wajo Regency in 2024

Variable/Category			Patient Safety Culture		Total	ρ value
			Strong	Weak		
Structural Empowerment	High	n	40	111	151	0,037
		%	26,5	73,5	100	
	Low	n	9	57	66	
		%	13,6	86,4	100	
Transformational Leadership	High	n	46	136	182	0,030
		%	25,3	74,7	100	
	Low	n	3	32	35	
		%	8,6	91,4	100	
Job Satisfaction	High	n	41	76	117	0,000
		%	35	65	100	
	Low	n	8	92	100	
		%	8	92	100	
Total		n	49	168	217	
		%	22,6	77,4	100	

Source: Primary Data

Based on table 3, the results of bivariate analysis show that (ρ value <0.05) means that there is a relationship between structural empowerment, transformational leadership style, and nurse job satisfaction on patient safety culture.
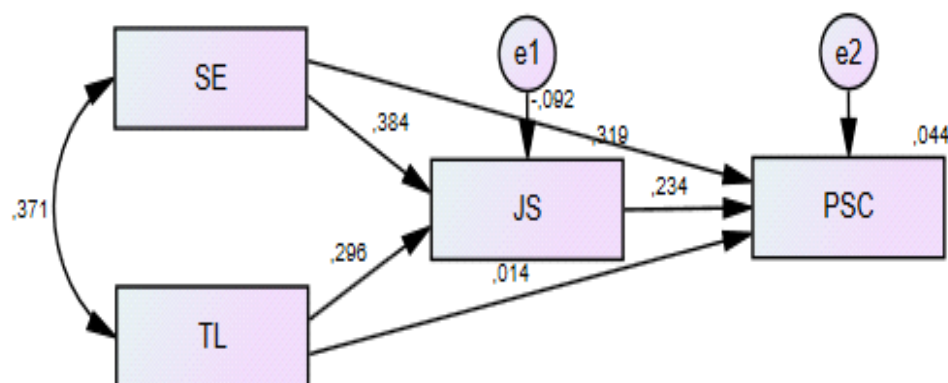
Path analysis

Figure 1: Path Analysis of Research Variables

Based on figure 1 above, multivariate analysis with path analysis shows that the direct effect coefficient value of structural empowerment is (β =-0.092), transformational leadership style is (β = 0.014), and nurse job satisfaction is (β =0.234) on patient safety culture. Furthermore, the direct effect of structural empowerment (β=0.384) and transformational leadership style (β=0.296) on nurses' job satisfaction. Correlation between structural empowerment and and transformational leadership style is (β =0.371). Job satisfaction explain 31,9% of its variance and patient safety culture explain 4,4% of its variance. The indirect effect of structural empowerment (β=0.069) and transformational leadership style (β=0.090) on patient safety culture through nurse job satisfaction (based on table 4 below).

Table 4: The effect between independent variables and intervening variables on the dependent variable both directly and indirectly

Variabel	Standardized	Estimate	S.E.	C.R.	ρ	Label
PSC <--- SE	-0,092	-0,226	0,252	-0,895	0,330	Direct
PSC <--- TL	0,014	0,034	0,245	0,140	0,879	Direct
PSC <--- JS	0,234	0,433	0,196	2,209	0,012	Direct
JS <--- SE	0,384	0,511	0,106	4,827	0,002	Direct
JS <--- TL	0,296	0,396	0,106	3,730	0,002	Direct
PSC <--- JS <--- SE	0,069				0,007	Indirect
PSC <--- JS <--- TL	0,090				0,007	Indirect

Source: Primary Data

PSC: Patient Safety Culture

SE : Structural Empowerment

TL : Transformational Leadership

JS : Job Satisfaction

DISCUSSION

The effect of structural empowerment on patient safety culture in nurses

Our study found a large direct effect of structural empowerment on patient safety culture with a coefficient value (β = 0.092). Research [16] suggests that there is a relationship between structural empowerment and patient safety culture.However, the impact is not too great on patient safety culture. In contrast to research [10] which found a positive relationship between structural empowerment and patient safety culture in surgical nurses, with a coefficient value (β = 0.498), the level of structural empowerment of surgical nurses increases the level of patient safety culture. Kanter's theory of structural empowerment refers to organizational arrangements and policies that provide resources, information, support, and opportunities for individuals within the organization to do their jobs more effectively [17]. Meanwhile, patient safety culture is a set of values, attitudes, perceptions, and patterns of behavior that determine commitment to quality and safety in health service organizations [5]. The effect of structural empowerment on patient safety culture is not always direct because organizational culture is the result of a complex interaction of various elements, including leadership, communication, and individual behavior. While structural empowerment provides an enabling foundation, its implementation does not always lead directly to changes in patient safety culture.

The influence of transformational leadership style on patient safety culture in nurses

Our study also found a large direct effect of transformational leadership style on patient safety culture with a coefficient value (β=0.014). In line with studies by [18], [19] who found that transformational leadership style contributes positively to patient safety, as well as by [20] who explained that all four dimensions of transformational leadership are related to patient safety culture. The relationship between nurse managers' transformational leadership behaviors and patient care quality was found to be in varying degrees (i.e., insignificant, weak, indirect, and strong direct relationships) with the conclusion that the relationship between nurse managers' transformational leadership behaviors and patient care quality is influenced by

several factors, including gender, organizational culture, structural empowerment and job satisfaction [21]. Although transformational leadership is quite high, inconsistent implementation or not supported by all levels of management can reduce its effectiveness in influencing safety culture. Achieving a strong patient safety culture requires a holistic approach that includes more than just leadership style. This involves the integration of training, safety policies, incident reporting systems, and employee engagement at all levels.

The influence of job satisfaction on patient safety culture in nurses

Job satisfaction is another important element in the workplace that can positively impact the work environment. Nurses' job satisfaction also plays an important role in creating an environment that supports patient safety culture [22]. Satisfaction with the work environment influences patient safety culture [23]. This is in line with our research findings that there is a positive direct effect of nurses' job satisfaction on patient safety culture by (β=0.234). The highest dimension is the work itself. Nurses' job satisfaction can improve the quality of patient care including culture safety patient safety culture by creating environment work environment that allows nurses to feel empowered to provide optimal care [24]. Job dissatisfaction leads to employees leaving the healthcare system, performing incorrect tasks, and providing inadequate medical services, thus reducing patient safety [25]. With increased job satisfaction, nurses are more motivated, focused, and committed to creating a safe work environment. They are also more involved in incident reporting, communicate more effectively, and participate in continuous learning.

The effect of structural empowerment on nurse job satisfaction

Several studies [22], [26], [27] identified that structural empowerment has a statistically significant effect on nurses' job satisfaction. Likewise, the findings of this study show that there is a direct effect of structural empowerment on nurses' job satisfaction with a coefficient value (β = 0.384). The highest dimension is access to information and access to resources, when nurses have access to information and influence over resources that support practice and the ability to participate in organizational decisions, this encourages the use of clinical leadership practices in patient care, thus contributing to job satisfaction [19]. In synthesis, structural empowerment can influence nurses' job satisfaction by increasing nurses' involvement and ability to provide better and more effective care, and increasing nurses' feelings of control and authority in their work. Structural empowerment can also increase access to information, support, resources, and opportunities needed to improve nurses' abilities and skills, and increase the level of job satisfaction in nurses, so structural empowerment has been considered as an important predictor of job satisfaction in health care delivery systems, especially in nursing staff [28].

The effect of transformational leadership style on nurses' job satisfaction

Research [19], [29], [30], [31] confirmed that the transformational leadership style of nurse managers has a strong positive influence to increase nurses' job satisfaction. In line with the findings of our study found that there is a significant direct effect of transformational leadership style on nurses' job satisfaction (β=0.296). Likewise [32] confirmed that transformational leadership has a strong direct effect on job satisfaction. In this study, nurses perceived their room chiefs to bequite transformational,particularly on the individual consideration dimension. Individual consideration focuses o n developing individuals and paying attention to their needs

and aspirations, when nurses feel individually supported by their leaders, both in terms of professional development and personal well-being, they tend to be more satisfied with their jobs. Nurses with managers who adopt a transformational leadership style are less likely to experience job dissatisfaction than nurses with supervisors who use other leadership styles [33].

The influence of structural empowerment on patient safety culture through nurse job satisfaction

Structural empowerment has a significant indirect effect on patient safety culture through increasing nurses' job satisfaction. By providing resources, management support, and career development opportunities, structural empowerment increases nurses' job satisfaction. Nurses who are satisfied with their jobs are more motivated, perform better, and actively participate in creating a safe environment for patients. Therefore, investing in structural empowerment is an important strategy to improve nurses' job satisfaction and ultimately, build a strong patient safety culture. To positively influence the safety culture in the ward, the head of the ward should focus on several dimensions of structural empowerment [34].

The influence of transformational leadership style on patient safety culture through nurse job satisfaction

This study shows that there is a significant indirect effect of transformational leadership style on patient safety culture through job satisfaction which is greater than the direct effect. The findings of this study are consistent with transformational leadership theory, which highlights the role of leaders in providing a supportive work environment for employees resulting in higher levels of job satisfaction and effectiveness [14]. Transformational leadership style influences employees to offer innovative ideas to solve problems, which can increase nurse satisfaction and make nurses responsible for providing better care to patients with fewer medical errors [29]. Likewise, the findings of [19] show that transformational leadership is essential to increase nurse satisfaction in the workplace and improve patient safety.

Limitations

The main limitation of our study is the cross-sectional nature of the study, which limits causal explanations to evidence of research variables and underlying theoretical relationships. A longitudinal design for the direct influence of structural empowerment and transformational leadership style on patient safety culture in nurses should be considered for future studies. Furthermore, our study was conducted in one district hospital, so if applied in other hospitals, it may provide different findings.

CONCLUSIONS

Our study found that the direct effect pathway of job satisfaction is an effective model for improving patient safety culture in nurses, so high job satisfaction can contribute greatly to improving patient safety culture. The implication of the study is that hospitals should examine factors that can improve nurses' job satisfaction.

References

1) World Health Organization, "Patient safety," 2023. [Online]. Available: https://www.who.int/news-room/fact-sheets/detail/patient-safety

2) WHO, "Human factors in patient safety: Review of topics and tools. Report for methods and meassures working group of WHO patient safety," Accessed February, vol. 28, no. 15/04/29, p. 2012, 2009.

3) Ministry of Health, "Law of the Republic of Indonesia Number 17 of 2023 Concerning Health," Ministry of Health. Kesehat. Ri, no. 187315, pp. 1-300, 2023.

4) J. Westat, N. Sorra, T. Yount, M. P. S. Famolaro, and M. B. A. L. Gray, "AHRQ Hospital Survey on Patient Safety Culture Version 2.0: User's Guide," 2021. [Online]. Available: http://www.ahrq.gov

5) J. Sorra, L. Gray, S. Streagle, T. Famolaro, N. Yount, and J. Behm, Hospital survey on patient safety culture: user's guide. 2018. [Online]. Available: www.ahrq.gov

6) M. J. Merino-Plaza, F. J. Carrera-Hueso, M. R. Roca-Castelló, M. D. Morro-Martín, A. Martínez-Asensi, and N. Fikri-Benbrahim, "Relationship between job satisfaction and patient safety culture," Gac. Sanit., vol. 32, no. 4, pp. 352-361, 2018, doi: 10.1016/j.gaceta.2017.02.009.

7) H. Lu, Y. Zhao, and A. While, "Job satisfaction among hospital nurses: A literature review," Int. J. Nurs. Stud., vol. 94, pp. 21-31, 2019, doi: 10.1016/j.ijnurstu.2019.01.011.

8) R. García-Sierra and J. Fernández-Castro, "Relationships between leadership, structural empowerment, and engagement in nurses," J. Adv. Nurs., vol. 74, no. 12, pp. 2809- 2819, 2018, doi: 10.1111/jan.13805.

9) R. M. Kanter, Men and women of the corporation. New York, NY: Basic Books,1977.

10) F. Çinar and T. Kutlu, "The Effect Of Structural And Psychologıcal Empowerment Of Surgıcal Nurses On Patıent And Employee Safety Culture," Gevher Nesibe J. IESDR, vol. 6, no. 11, pp. 20-28, Mar. 2021, doi: 10.46648/gnj.175.

11) N. Hahtela et al., "Workplace culture and patient outcomes: What's the connection?" Nurs. Manage., vol. 48, no. 12, 2017, [Online]. Available: https://journals.lww.com/nursingmanagement/fulltext/2017/12000/workplace_culture_ and_patient_outcomes what_s_the.9.aspx

12) I. F. Setyowati, "Factors that influence the implementation of patient's safety culture by ward nurses in district general hospital," Enferm. Clin., vol. 29, pp. 300-303, 2019, doi: 10.1016/j.enfcli.2019.04.038.

13) E. Ree and S. Wiig, "Linking transformational leadership, patient safety culture and work engagement in home care services," Nurs. Open, vol. 7, no. 1, pp. 256-264, 2020, doi: 10.1002/nop2.386.

14) B. M. Bass, B. J. Avolio, D. I. Jung, and Y. Berson, "Predicting unit performance by assessing transformational and transactional leadership," J. Appl. Psychol. Psychol., vol. 88, no. 2, pp. 207-218, 2003, doi: 10.1037/0021-9010.88.2.207.

15) F. Luthan, Organizational Behavior, 10th ed. Yogyakarta: ANDI, 2006.

16) T. M. A. Almotairi, "the effect of structural empowerment and prosocial voice on the patient safety culture moderated by self-monitoring and mediated by psychological empowerment in saudi public hospitals," no. October, 2014.

17) R. M. Kanter, Men and women of corporation, 2nd ed. New York, NY: Basic Books, 1993.

18) S. Mulyatiningsih and U. Sasyari, "Effective Leadership Style in Improving Patient Safety," Healthc. Nurs. J., vol. 3, no. 1, pp. 59-64, 2021, doi: 10.35568/healthcare.v3i1.1093.

19) S. A. Boamah, H. K. Spence Laschinger, C. Wong, and S. Clarke, "Effect of transformational leadership on job satisfaction and patient safety outcomes," Nurs. Outlook, vol. 66, no. 2, pp. 180-189, Mar. 2018, doi: 10.1016/j.outlook.2017.10.004.

20) X. L. T. Hasan, A. I. Sidin, and A. A. A., "Correlation between Transformational Leadership and the Application of Patient Safety Culture in Labuang Baji Regional Public Hospital," JST Kesehat., vol. 7, no. 2, pp. 191-196, 2018.

21) N. H. Alanazi, Y. Alshamlani, and O. G. Baker, "The association between nurse managers' transformational leadership and quality of patient care: A systematic review," Int. Nurs. Rev., vol. 70, no. 2, pp. 175-184, 2022, doi: https://doi.org/10.1111/inr.12819.

22) L. Busieka and C. M. Mukanzi, "Influence of structural empowerment on job satisfaction," Int. J. Manag. Commer. Innov., vol. 6, no. 1, pp. 347-354, 2018, [Online]. Available: www.researchpublish.com

23) S. A. Pasinringi, R. Fridawati, Irwandy, Sari, and Nurmala, "The Influence of Job Satisfaction on Patient Safety Culture in Makassar Hospitals," Syst. Rev. Pharm., vol. 11, no. 11, p. 1851, 2020.

24) A. Alharbi and B. Alilyyani, "The Effect of Emergency Nurses' Job Satisfaction and Intent to Leave on Patient Safety Culture: A Cross-Sectional Study," Nurs. Forum, vol. 2023, 2023, doi: 10.1155/2023/7738229.

25) A. Asgarian, R. Sadeghi, F. Abolhasani, A. Mohammadbeigi, A. O. Oskouei, and A. Soltanzadeh, "Association between job satisfaction, burnout, and patient safety culture among medical staff of the qom university of medical sciences in 2020, iran," J. Occup. Heal. Epidemiol., vol. 10, no. 2, pp. 127-133, 2021, doi: 10.52547/johe.10.2.127.

26) D. Astirini, D. Fridawaty, and D. Hasnawati, "The Effect of Structural Empowerment on Nursing Job Satisfaction with Psychological Empowerment as a Mediating Factor at Rsud Sheikh Yusuf, Gowa Regency," 2021, [Online]. Available: http://repository.unhas.ac.id/id/eprint/12682/

27) I. M. R. Mahardika, S. Dewi, and R. A. Pamungkas, "The Effect of Service Quality, Structural Empowerment, and Safety Culture on Nurse Job Satisfaction in Indonesia," Orig. Res. Int. J. Nurs. Heal. Serv., vol. 5, no. 5, pp. 458-463, 2022, doi: 10.35654/ijnhs.v5i5.662.

28) H. K. S. Laschinger, J. E. Finegan, J. Shamian, and P. Wilk, "A longitudinal analysis of the impact of workplace empowerment on work satisfaction," J. Organ. Behav., vol. 25, no. 4, pp. 527-545, 2004, doi: 10.1002/job.256.

29) M. Asif, A. Jameel, A. Hussain, J. Hwang, and N. Sahito, "Linking Transformational Leadership with Nurse-Assessed Adverse Patient Outcomes and the Quality of Care: Assessing the Role of Job Satisfaction and Structural Empowerment," 2019.

30) A. Eliyana, S. Ma'arif, and Muzakki, "Job satisfaction and organizational commitment effect in the transformational leadership towards employee performance," Eur. Res. Manag. Bus. Econ., vol. 25, no. 3, pp. 144-150, 2019, doi: 10.1016/j.iedeen.2019.05.001.

31) L. J. Labrague, "Relationship between transformational leadership, adverse patient events, and nurse-assessed quality of care in emergency units: The mediating role of work satisfaction," Australas. Emerg. Care, vol. 27, no. 1, pp. 49-56, 2024, doi: https://doi.org/10.1016/j.auec.2023.08.001.

32) S. A. Boamah, "The impact of transformational leadership on nurse faculty satisfaction and burnout during the COVID-19 pandemic: A moderated mediated analysis," J. Adv. Nurs., vol. 78, no. 9, pp. 2815-2826, 2022, doi: 10.1111/jan.15198.

33) K. Wijayanti and Q. Aini, "The Influence of Transformational Leadership Style to Nurse Job Satisfaction and Performance in Hospital," J. World Sci., vol. 1, no. 7, pp. 485-499, 2022, doi: 10.36418/jws.v1i7.69.

34) N. S. Goedhart, C. J. van Oostveen, and H. Vermeulen, "The effect of structural empowerment of nurses on quality outcomes in hospitals: a scoping review," J. Nurs. Manag., vol. 25, no. 3, pp. 194-206, 2017, doi: 10.1111/jonm.12455