



Analysis of Patient Safety Culture Post of the COVID-19 Outbreak Peak

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Abstract

BACKGROUND: Patient safety culture is an important indicator of the quality of health services. The COVID-19 pandemic resulted in a health emergency that contributed to the dynamics of handling and providing services in the health sector and put significant pressure on the health sector. Health services during the COVID-19 pandemic faced serious challenges. During a pandemic, safe and high-quality care is an important goal in the patient safety care system, which is an effort to prevent mistakes in providing services.

METHOD: This study used analytical descriptive method with a cross-sectional approach and continued with correlation and comparative studies. The sample in this study amounted to 323 respondents by non-probability sampling.

RESULTS: At the beginning of the pandemic, especially during the first spike in cases, there was a decline in patient safety culture, especially in the reporting of patient safety incidents. This decline was immediately corrected from 27.6% after the peak of the first pandemic to 52.4% after the peak of the second pandemic to 70% after the peak of the third pandemic. The dimension of teamwork between units had the largest correlation ($r = 0.506$) with a value of $p = 0.000$ in the first post-peak pandemic; in the post-peak of the second pandemic, the overall perception dimension of patient safety was the dimension with the largest correlation value ($r = 0.547$) with a value of $p = 0.000$. In the third post-peak pandemic, the supervisor/manager expectation dimension and actions that support patient safety were the dimensions that had the largest correlation value ($r = 0.255$) with a value of $p = 0.000$.

CONCLUSION: There are dominant factors related to the quality of implementing patient safety culture in each post-peak pandemic and there are differences in the quality of implementing patient safety culture for each post-peak pandemic.

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Introduction

Patient safety culture in hospitals is one of the most important things in hospital services, both before the pandemic, during the pandemic and after the COVID-19 pandemic. Prioritizing the handling of COVID-19 patients, especially during peak cases in hospitals, does not mean reducing the importance of implementing a patient safety culture [1]. The sharp increase in cases of COVID-19 entering hospitals has made many hospitals experience difficulties in serving patients, especially with the infection of several hospital staff. Increasing the allocation of resources for handling COVID-19 has also changed hospital management priorities, especially in Indonesia as the country with the highest infection rate in Southeast Asia [1], [2].

Challenges to patient safety due to the COVID-19 pandemic, in hospitals also occur due to an imbalance in the supply and demand for protective equipment, rapid policy changes, lack of evidence-based treatment guidelines for COVID-19, and inadequate supervision of procedures due to a shortage of personnel, making increased risk of errors [3]. Side effects during hospitalization related to surgical procedures, medication errors, and nosocomial infections are mostly prevented by hospitals by ensuring patient safety and

optimizing the provision of hospital services by health professionals [4].

Health workers, including doctors, nurses, and those working in non-emergency wards of hospitals, are under immense pressure because they are more vulnerable to exposure to COVID-19. Throughout the COVID-19 pandemic, health workers in hospitals experienced problems in terms of limited hospital resources, the threat of exposure to SARS-CoV-2 as an additional occupational hazard, increased workload, fear of transmitting COVID-19 to family members, and poor sleep patterns. Distracted, causing some to become agitated or even suicidal [5], [6]. Health workers who have to interact closely with infected patients can result in psychological and emotional trauma, acute stress disorder, and post-traumatic stress disorder. Significant correlations have been identified between work environment, depersonalization, personal achievement, and organizational patient safety culture [7], [8].

It is hoped that the postponement of the mandatory state evaluation process related to patient safety culture will not reduce the safety culture in hospitals given the importance of this in hospital services. Evaluation of the safety culture at Prof. dr. R.D Kandou General Hospital as a referral hospital owned by the Indonesian Ministry of Health is expected to be able

to provide data related to compliance with patient safety standards in hospitals after the president changed the status of the COVID-19 pandemic to endemic in 2023. This research it is expected to be able to describe the implementation of patient safety culture at each peak of the increase in COVID-19 cases and thereafter as a benchmark for preparing risk management in the future.

Methods

This research used analytic descriptive method through a cross-sectional approach and continued with a comparative study. The sample in this study amounted to 323 respondents using a non-probability sampling technique using consecutive sampling. The instrument in this study used a questionnaire covering demographic data and questions totaling 42 items adopted from the hospital survey on patient safety culture (HSOPSC). The research instrument used has been validated by Tambajong *et al.*, so that the Indonesian version of the HSOPSC questionnaire can be used in providing an overview of patient safety culture in hospitals in Indonesia) [9].

The independent variables in this study were teamwork, supervisor/manager expectations, and actions that support patient safety, organizational learning-continuous improvement, management support for patient safety, overall perception of patient safety, feedback and communication regarding errors, openness of communication, frequency of incident reporting, teamwork between units, staffing arrangements (before drop), handover and transfer of patients, and non-punitive response against errors. The dependent variable in this study is the Perception of Health Workers on the Implementation of Patient Safety Culture during the COVID-19 Pandemic.

The data collection tool uses a questionnaire which is divided using the Google Form application and sent to respondents. The research protocol was submitted to the Research Ethics Committee and had been given ethical approval number 059/EC/KEPK-KANDOU/V/2023 dated May 5, 2023:

Table 4: Distribution of patient safety culture after the peak of the first outbreak

Dimensions of patient safety culture	Patient safety culture after the peak of first pandemic							
	Good		Moderate		Deficient		Total	
	n	%	n	%	n	%	n	%
Team work	213	65.9	109	33.7	1	0.3	323	100
Supervisor/manager expectations and actions that support patient safety	213	65.9	109	33.7	1	0.3	323	100
Organizational learning and continuous improvement	143	44.3	180	55.7	0	0	323	100
Management support for patient safety	127	39.3	192	59.4	4	1.2	323	100
Overall perception of patient safety	2	0.6	309	95.7	12	3.7	323	100
Feedback and communication regarding errors	124	38.4	195	60.4	4	1.2	323	100
Communication openness	105	32.5	212	65.6	6	1.9	323	100
Incident reporting frequency	89	27.6	204	63.2	30	9.3	323	100
Inter-unit teamwork	255	78.9	65	20.1	3	0.9	323	100
Staffing arrangements (before drop)	134	41.5	92	28.5	97	30	323	100
Patient handover and transfer	213	65.9	103	31.9	7	2.2	323	100
Non-punitive response to mistakes	278	86.1	45	13.9	0	0	323	100

Table 1: Distribution of respondents by age

Age	N	%
<30 years	78	25.1
30–40 years	137	42.4
41–50 years	77	23.8
51–60 years	31	9.6
Total	323	100

Results

Respondent characteristics

Age

Table 1 shows that the most age-based respondents were 30–40 years, namely, 137 people (42.4%) and the lowest age was 51–60 years, namely, 31 people (9.6%).

Years of service

In Table 2, it can be seen based on the highest years of service with 11–15 years of service, namely, 88 people (27.2%) and the lowest 16–20 years of service, namely, 27 people (8.4%).

Table 2: Distribution of respondents based on years of service

Years of service	N	%
3–5 years	85	26.3
6–10 years	58	18.0
11–15 years	88	27.2
16–20 years	27	8.4
>20 years	65	20.1
Total	323	100.0

Profession

In Table 3, it can be seen that based on the profession, the most were nurses, namely, 240 people (74.3%) and at least 11 pharmacists (3.4%).

Table 3: Distribution of respondents by profession

Profession	N	%
Nurse	240	74.3
Medical doctor	27	8.4
Other health profession	27	8.4
Midwife	18	5.6
Pharmacist	11	3.4
Total	323	100.0

Table 5: Distribution of patient safety culture after the peak of the second outbreak

Dimensions of patient safety culture	Patient safety culture after the of second outbreak							
	Good		Moderate		Deficient		Total	
	n	%	n	%	n	%	n	%
Team work	235	72.8	88	27.2	0	0	323	100
Supervisor/manager expectations and actions that support patient safety	159	49.2	163	50.5	1	0.3	323	100
Organizational learning and continuous improvement	183	56.7	139	43	1	0.3	323	100
Management support for patient safety	141	43.7	179	55.4	3	0.9	323	100
Overall perception of patient safety	58	18	262	81.1	3	0.9	323	100
Feedback and communication regarding errors	153	47.4	169	52.3	1	0.3	323	100
Communication openness	131	40.6	186	57.6	6	1.9	323	100
Incident reporting frequency	175	54.2	134	41.5	25	7.7	323	100
Inter-unit teamwork	260	80.5	63	19.5	0	0	323	100
Staffing arrangements (before drop)	203	62.8	119	36.8	1	0.3	323	100
Patient handover and transfer	214	66.3	101	31.3	8	2.5	323	100
Non-punitive response to mistakes	62	19.2	261	80.8	0	0	323	100

Patient safety culture score at first COVID-19 outbreak peak

Table 4 shows that in the good category, the dimension of non-punitive response to errors is most dominant with a percentage of 86.1%, while in the sufficient category, the dimension of overall perception of patient safety is the most dominant dimension with a percentage (95.7%), and less on the dimension staffing arrangements (before drop) with a percentage of 30%.

Patient safety culture score at second COVID-19 outbreak peak

In Table 5, it can be seen that in the good category, the dimension of teamwork between units is the best dimension with a percentage of 80.5%. While in the sufficient category, the dimension of overall perception of patient safety is the most dominant dimension with a percentage (81.1%), and less in the dimension of incident reporting frequency with a percentage (4.3%).

Patient safety culture score at third COVID-19 outbreak peak

In Table 6, it is found that teamwork is the best dimension with a percentage of 86.1%, in the sufficient category, the dimension of management support for patient safety is the most dominant dimension with a percentage (48.3%), and lacking in the dimension of overall perception of safety patients and communication openness with the percentage (0.9%).

Quality of patient safety culture

In table 7, it can be seen that at the peak of pandemic 1, the perception of patient safety culture

was mostly in the good category (61.3%), at the peak of the second pandemic (57.6%), and at the peak of the third pandemic, it was very good (50.2%).

Correlation analysis

Patient safety culture after first pandemic peak

In Table 8, the results of the analysis using the Spearman's rho correlation test for 12 dimensions of patient safety culture with the quality of implementing patient safety culture in post-peak pandemic 1 found that the dimension of teamwork between work units was the most significant dimension related to the direction of positive relationships while in the quality of patient safety culture implementation, where the significance value was 0.000 with a correlation value of 0.506).

Patient safety culture after second pandemic peak

In Table 9, the results of the statistical correlation test of Spearman's rho for 12 dimensions of patient safety culture with the quality of implementing patient safety culture in post-pandemic peak 2 found that the overall perception dimension of patient safety was the most significant dimension related to the direction of a positive relationship in the quality of patient safety culture implementation, where the significance value was 0.000 with a correlation value of 0.547.

Patient safety culture after third pandemic peak

At Table 10, the results of the statistical correlation test of Spearman's rho for 12 dimensions of patient safety

Table 6: Distribution of patient safety culture after the peak of the third outbreak

Dimensions of patient safety culture	Patient safety culture after the of third outbreak							
	Good		Moderate		Deficient		Total	
	n	%	n	%	n	%	n	%
Team work	278	86.1	45	13.9	0	0	323	100
Supervisor/manager expectations and actions that support patient safety	192	59.4	131	40.6	0	0	323	100
Organizational learning and continuous improvement	205	63.5	118	36.5	0	0	323	100
Management support for patient safety	165	51.1	156	48.3	2	0.6	323	100
Overall perception of patient safety	168	52	152	47.1	3	0.9	323	100
Feedback and communication regarding errors	219	67.8	104	32.2	0	0	323	100
Communication openness	180	55.7	140	43.3	3	0.9	323	100
Incident reporting frequency	226	70	96	29.7	1	0.3	323	100
Inter-unit teamwork	244	75.5	79	24.5	0	0	323	100
Staffing arrangements (before drop)	254	78.6	68	21.1	1	0.3	323	100
Patient handover and transfer	192	59.4	129	39.9	2	0.6	323	100
Non-punitive response to mistakes	214	66.3	109	33.7	0	0	323	100

Table 7: Quality of patient safety culture

Outbreak peak	Patient safety culture perceptions									
	Deficient		Moderate		Good		Excellent		Total	
	n	%	n	%	n	%	n	%	n	%
First outbreak	12	3.7	71	22	198	61.3	42	13	323	100
Second outbreak	10	3.1	65	20.1	186	57.6	62	19.2	323	100
Third outbreak	7	2.2	52	16.1	102	31.6	162	50.2	323	100

culture with the quality of implementing patient safety culture in post-peak pandemic 3 found that the dimension of management support for patient safety was the most significant dimension related to the direction of a low positive relationship in the quality of patient safety culture implementation, where the significance value was 0.000 with a correlation value of 0.255.

Table 8: Patient safety culture score after first outbreak peak

Variable	r	Sig.
Spearman's rho		
Team work	0.170**	0.002
Supervisor/manager expectations and actions that support patient safety	0.165**	0.003
Organizational learning and continuous improvement	0.130*	0.020
Management support for patient safety	0.192**	0.001
Overall perception of patient safety	0.173**	0.002
Feedback and communication regarding errors	0.088	0.114
Communication openness	0.089	0.109
Incident reporting frequency	0.114*	0.041
Inter-unit teamwork	0.506**	0.000
Staffing arrangements (before drop)	0.291**	0.000
Patient handover and transfer	0.414**	0.000
Non-punitive response to mistakes	0.199**	0.000

Analysis of differences in ratings

In Table 11, there can be differences in the assessment of the application of patient safety culture at each post-peak pandemic where at post-pandemic peak 1, the mean value was 386.24, at the second post-pandemic peak, it rose to 468.33, and at the third post-pandemic peak, it rose to 600.43. In the Kruskal–Wallis statistical test, $p = 0.000 < \alpha (0.05)$ was obtained, meaning that there was a significant difference after the peak of the COVID-19 pandemic.

Discussion

Subject of this research mostly consisted of people that 30–40 years old, namely, 137 people (42.4%) and the lowest was 51–60 years, namely, 31 people (9.6%). Age correlates with the level of

Table 9: Patient safety culture score after second outbreak peak

Variable	r	Sig.
Spearman's rho		
Team work	0.318**	0.000
Supervisor/manager expectations and actions that support patient safety	0.372**	0.000
Organizational learning and continuous improvement	0.401**	0.000
Management support for patient safety	0.502**	0.000
Overall perception of patient safety	0.547**	0.000
Feedback and communication regarding errors	0.377**	0.000
Communication openness	0.357**	0.000
Incident reporting frequency	0.186**	0.001
Inter-unit teamwork	0.509**	0.000
Staffing arrangements (before drop)	-0.068	0.224
Patient handover and transfer	0.428**	0.000
Non-punitive response to mistakes	-0.143*	0.010

Table 10: Patient safety culture score after third outbreak peak

Variable	r	Sig.
Spearman's rho		
Team work	0.070	0.210
Supervisor/manager expectations and actions that support patient safety	0.255**	0.000
Organizational learning and continuous improvement	0.164**	0.003
Management support for patient safety	0.246**	0.000
Overall perception of patient safety	0.038	0.492
Feedback and communication regarding errors	0.075	0.182
Communication openness	0.068	0.221
Incident reporting frequency	0.141*	0.011
Inter-unit teamwork	0.192**	0.001
Staffing arrangements (before drop)	-0.079	0.159
Patient handover and transfer	-0.013	0.814
Non-punitive response to mistakes	-0.011	0.844

maturity or maturity, whereby increasing a person's age increases the level of maturity or maturity and psychological aspects of a person, including in carrying out tasks [9], [10]. Most of them had years of service 11–15 years, namely, 88 people (27.2%) and the lowest years of service are 16–20 years, namely, 27 people (8.4%).

Table 11: Differences in the patient safety culture implementation at the post outbreak peak

Ranks	n	Mean rank	Statistics test ^{a, b}		
			Kruskal-Wallis H	df	Asymp. sig.
Quality of patient safety culture					
First outbreak	323	386.24	114.057	2	0.000
Second outbreak	323	468.33			
Third outbreak	323	600.43			
Total	969				

Correlation analysis

The results of statistical tests in the study found that in the first post-peak of the pandemic, the dimension of teamwork between work units was the dimension most related to the direction of positive relationships, while in the quality of patient safety culture, the dimension of overall perception of patient safety was the dimension most associated with the second post-peak pandemic, and in the third post-peak pandemic, the dimension of management support for patient safety is the dimension most related to the quality of the implementation of patient safety culture at RSUP Prof. Dr. R.D. Kandou with a low-positive relationship direction.

This study is in line with research conducted by Ekawardani *et al.* in 2022 where the results of the bivariate analysis test with the Spearman Rank correlation test obtained dimensions of management support and teamwork between work units have a significance value ($p = 0.000$) with a very strong and strong positive correlation value ($r = 0.897$; $r = 0.706$), with the dimension of management support as the most dominant factor ($OR = 125.244$) [10]. This study is also in line with Syamin 2017, where the supervisor/manager expectation dimension and patient safety promotion actions were the dimensions with the highest positive response, this shows the extent to which the supervisor/manager role promotes and supports patient safety (82.3%) [11]. This condition was also found in a study conducted by Chen and Li in 2010 in Taiwan where a

positive response was found in 83% of respondents to this dimension of management support roles, that was in contrast to research conducted by Minuzzi et al. in 2016 where the results on this dimension are still at 51.72% [12], [13]. Respondents rated that although leaders take advice from the team and in high-intensity work situations do not exert pressure, management is still lacking in rewarding their efforts [13]. According to Gozlu and Dan Kaya in 2016, the dimension of management support as a dimension that needs to be prioritized in an effort to improve the implementation of patient safety culture and management is expected to be able to better appreciate and reward in accordance with the role of nurses who have actively participated in the patient care process according to procedures and patient safety signs and can better consider their suggestions to create a better and positive patient safety culture climate [14].

The implementation of the system that applies in the institution is the full authority of the leadership, therefore in creating a positive work climate and prioritizing patient safety, leadership models, managerial skills, and communication techniques are very crucial to consider as an effort to build a culture of safety within the institution. Every individual in the hospital must have a uniform commitment in building perceptions of patient safety in the hospital so that leaders can become role models for all staff where each behavior is able to promote efforts to build patient safety.

One indicator that has created a good patient safety culture climate is the activity of reporting unexpected incidents or incidents in a timely manner, accompanied by feedback from the report. This activity seems not to have been internalized as a culture in various health-care facilities due to fear, anxiety, and the notion that an incident or error in the health-care process is a disgrace for them that must be covered up. Hospital management needs to build a system to learn from reporting incidents and errors and not take actions that blame, embarrass, and punish health workers who report an incident or make a mistake [15].

Supervision activities from the leadership are a form of leadership support to staff in an effort to cultivate patient safety. Law Number 44/2009 concerning Hospitals mandates that "Every health worker working in a hospital must work in accordance with professional standards, hospital service standards, applicable standard operating procedures, professional ethics, respecting patient rights, and prioritizing patient safety." Clinical supervision is important to be carried out systematically, with a clear schedule, and continuously, and is not aimed at finding or assessing errors or irregularities. Clinical supervision is carried out with the aim of guiding the process and increasing the understanding of health workers in carrying out the duties and responsibilities of each staff in the health service process. In addition, supervision is also intended as an evaluation process that is carried out

continuously and continuously to achieve full quality services that are in line with the vision and mission of the hospital [16].

According to AHRQ (2016), patient safety perception is the view or assessment of each individual on the implementation of patient safety culture systems and procedures in preventing errors or patient safety problems. Perceptions about overall patient safety are obtained from individual observation processes originating from cognitive aspects based on internalized experiences, learning processes, knowledge, and training related to patient safety. Aspects of patient safety include the ability to identify incidents, risk analysis, incident reporting and incident analysis, the ability to learn from incidents, and feedback from incidents [17].

Quality of patient safety culture at each post outbreak peak

The results of the study found that there were differences in the application of patient safety culture during the epidemic where at the first post-peak pandemic, the mean value was 386.24, at the second post-pandemic peak, it rose to 468.33, and, at the third post-pandemic peak, it rose to 600.43. The results of the Kruskal–Wallis statistical test found $p = 0.000 < \alpha (0.05)$ meaning that there was a significant difference after the peak of the 1st, 2nd, and 3rd COVID-19 pandemic.

In March 2020, the first positive case of COVID-19 in Indonesia was found, until March 2022 it has been 2 years since Indonesia has experienced the COVID-19 pandemic with all its dynamics and impacts on various sectors of life. Indonesia has gone through three peak waves of the pandemic with a very significant increase in cases during the COVID-19 pandemic. The first wave of increased cases started in December 2020 with a peak of 14,518 cases on January 30, 2021. In the second wave, on June 15th 2021 there was a very catastrophic increase in cases, not only in Indonesia but also in several countries in the world caused by the Delta variant, with a daily peak of more than 56,000 cases, and cases of death reaching more than 2000 people a day on July 27, 2021. The third wave due to the Omicron variant with the highest cases per day on February 17, 2022 totaled 63,956 cases [18].

Research by Asmirajanti *et al.*, in 2021, management of service standards that prioritize patient safety in an effort to achieve complete service quality and safety needs to be the full attention of the home. It is important for hospitals to consistently and continuously manage patient safety standards, including during the COVID-19 pandemic which has resulted in very fast and dynamic changes, especially in all aspects of health services and the needs and competencies of human resources in them. The results of this study showed that good implementation of service standards would influence the creation of good quality of service and

patient safety in hospitals, but it was found that the role of facilities and infrastructure did not have a significant influence but became part of the main support system for health workers in health service activities. Hospitals in carrying out their duties and functions really need complete facilities and infrastructure to run and facilitate health workers in carrying out their duties and obligations in service, and reduce and prevent an Unexpected Event [6]. Klimmeck *et al.*, in a study, conducted to assess the dimensions of safety culture in eight work units at a Swiss state university hospital; it was found that there was still a lack of providing safe hospital care processes for patient safety [19].

The influence of leadership styles and the role of leaders on improving the quality of health services are discussed in several journals. Mulyatiningsih and Dan Sasyari in 2021 in their research obtained a transformational leadership style as an ideal leadership model compared to a transactional leadership style, as well as a democratic and authoritarian leadership style in building a positive patient safety culture [20]. The leadership style of the transformational model correlates with a good perception of nurses toward patient safety and creates a positive climate in the work environment so that staff feel satisfied in carrying out their duties and responsibilities and reduce the risk of an incident or unexpected event occurring at the hospital. Good leadership style can affect patient safety and have an impact on improving the quality of health services in hospitals. Chakraborty *et al.* research, in 2021, in an effort to improve service quality that prioritizes patient safety, the leadership at the hospital always emphasizes and reminds all staff for effectiveness in working to improve service quality and ensure patient safety and safety from the risk of unexpected incidents [21].

The communication factor is an important dimension in building patient safety in hospitals. Well-developed communication between health workers and patients and their families in the service process will be able to reduce the risk of unexpected incidents or errors related to patient care. Research conducted by Rasheed *et al.* in 2021 during the COVID-19 pandemic, good communication to patients, and their families regarding the treatment process provided must continue. In this study, the use of technology with video calls or other meeting features is very helpful in facilitating the provision of education or the delivery of information to patients and their families during the COVID-19 pandemic [22].

Research by Zulfendri and Nasution in 2020 outreach activities related to patient safety carried out to build the perception of health workers in increasing knowledge of patient safety was found not to be running effectively, so continuous patient safety education and training needs to be carried out which aims to improve and develop knowledge and competence staff [23].

Along with the efforts of health service institutions to improve the quality of care by building

a patient safety culture, managerial attitudes and values and all staff related to patient safety need to be developed in creating a positive patient safety culture climate. Incident reporting is an important factor in safety culture, where the implementation of an incident reporting system is not only aimed at assessing weaknesses at the hospital level but also being able to identify opportunities for vulnerabilities in patient safety system barriers, a tool to promote learning from past incidents or mistakes, and demonstrate the willingness and openness of staff to express concerns about the risk of an unexpected incident [1]. The culture of reporting safety incidents is still low due to the lack of ability of hospital staff to identify an incident so that hospital staff are sometimes unaware that a patient safety incident has occurred. Motivation and openness in reporting safety incidents is still low, and the role of leadership is still weak in building a culture of patient safety in hospitals. The low level of staff trust in the leadership's commitment to building a culture that does not punish, embarrass, blame, and is open in reporting patient safety incidents needs to be changed.

Working in very dynamic and challenging conditions during the peak of the COVID-19 pandemic had an impact on the ability of health workers to provide quality care and prioritize patient safety. The previous research has identified organizational limitations, limited human resources, increased workload, and fatigue from service providers as important contributors to poor patient safety implementation [1].

Conclusion

The pandemic has resulted in many problems in the service process due to the impact of the increasing number of patients in a short time. This situation greatly impacted the implementation of a patient safety culture, which can be seen from the difference in the application of patient safety culture at each peak of the pandemic, where the application of safety culture at the third peak is better than at the second and first peaks with the lowest at the peak of the first pandemic. The dominant factors affecting the quality of patient safety culture implementation from the 12 dimensions of patient safety in the first and third peaks are the dimensions of expectations and actions of supervisors/managers that support patient safety, while the second peak is the overall perception of patient safety.

At the peak of the first and third pandemics, the dimensions of supervisor/manager expectations and actions that support patient safety were the most dominant dimensions, while at the peak of the second pandemic, the overall perception of patient safety was the dominant dimension. The results of the study found that there were differences in the quality of implementing

patient safety culture during the peak of the pandemic where after the first, second, and third peaks.

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