

# The Role of Information Technology and Organizational Culture on Nurse Performance in Implementing Patient Safety in Type B Hospital Makassar City

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## Abstract

**Background:** Accidents to patients in hospital are like an iceberg phenomenon, the visible incidence is only a small part of the actual incident in the hospital. The issue of patient safety states that avoidable medical errors or unsafe patient care are still a global health problem today. **Purpose:** This study aims to determine the role of information technology and organizational culture on the performance of nurses in implementing patient safety at Type B Hospital in Makassar City. **Method:** This study uses a descriptive analytic correlative research design using a cross sectional study approach. The sampling technique uses Non Probability Sampling with Purposive Sampling technique. The samples obtained were 75 people at Bhayangkara Hospital, 75 people at Labuang Baji Hospital, and 114 people at Haji Hospital using a questionnaire. **Results:** From the analysis of the relationship between variables using SPSS with the Pearson Correlation test from 3 houses in Makassar City, it was found at Bhayangkara Hospital, Makassar City, that there was a relationship between information technology and the application of patient safety, p value  $0.001 < 0.05$ , and there was a relationship between organizational culture and implementation of patient safety, p value  $0.017 < 0.05$ . At Labuang Baji Hospital, there is a relationship between information technology and the implementation of patient safety, p value  $0.001 < 0.05$  and there is a relationship between organizational culture and implementation of patient safety, p value  $0.004 < 0.05$ . At Haj Hospital, there is a relationship between information technology and patient safety implementation, p value  $0.000 < 0.05$  and there is no relationship between organizational culture and patient safety implementation P value  $0.093 > 0.05$ . **Conclusion:** In general, the description of information technology and organizational culture at Bhayangkara Hospital, Labuang Baji Hospital, and Makassar City Hajj Hospital was stated to be good, while the implementation of patient safety was stated to be very good. There is a significant relationship between information technology and the implementation of patient safety, and there is a significant relationship between organizational culture and the implementation of patient safety. Continuous patient safety training and optimization of information technology and organizational culture are highly recommended to improve the quality of services that focus on patient safety.

**Keywords:** Information Technology, Organizational Culture, Patient Safety.

## Introduction

Accidents in patients in hospitals are like iceberg phenomena, the number of visible events is only a small part of the actual occurrences in hospitals. According to Mandias et al. (2021), avoidable medical errors or unsafe patient care are still global health problems today. Patient safety culture is the product of individual and group values, attitudes, competencies, and behaviors that determine an organization's culture's commitment and capacity to patient safety programs. The lack of patient safety culture in hospitals causes a decrease in public trust in health services (Araujo et al., 2021).

The World Health Organization (WHO) estimates that people in Asia receive more than 5 injections per year and 50% of those injections are unsafe, about 4% of patients experience side effects during hospitalization, 70% end up with temporary disability, and 14% end in death. The Institute Of Medicine reports that between 44,000-98,000 people die annually in the United States due to medical errors (Araujo et al., 2021). The patient safety incidents that have been reported to the National Reporting and Learning System (NRLS) from the UK stated that from April 2020 to March 2021 the total number of patient accidents was 12.7% or a total of 267,460 incidents (NaPSIR, 2021).

Based on the data obtained, Indonesia is in the top three related to the incidence of falls in hospitals and is ranked second in medical error (Mappanganro et al., 2020). Data from the Hospital Patient Safety Committee (KKP-RS) regarding the incidence of patient safety states that Indonesia has a high level of risk of falling. The largest incidence of patient safety in Indonesia is in the Jakarta area at 37.9%, followed by Central Java at 14.9%, Yogyakarta Special Region at 13.8%, East Java at 11.7%, South Sumatra at 6.9%, West Java at 2.8%, Bali at 1.4%, South Sulawesi at 0.69%, and Aceh at 0.68%. Data from the Ministry of Health (2021) shows that there were 4,397 cases consisting of KNC (Near Injury Events) of 1,508 cases, KTC (Non-Injury Events) of 1,373 cases and KTD (Unexpected Events) of

1,516 cases. Various adverse events due to the incident were also reported, including death 91 cases, serious injury 36 cases, moderate injury 296 cases, minor injury 677 cases (Handayani et al., 2021).

On the other hand, data shows that South Sulawesi is in eighth place regarding patient safety incidents, which is 0.69 (Islamic, 2021). Data from Makassar City Hospital in 2019 obtained the results of patient safety incidents over the past 10 months, including 1 case of KTD, 22 cases of KTC, 1 case of KPC, and 11 cases of KNC (Djariah et al., 2020).

Patient safety is a top priority in healthcare and is an aspect of the most important quality management. Currently, not only people demand the need for healthy living, but the mentality of the community is growing in providing answers and demands for health services in order to get quality health services (Haryoso & Ayuningtyas, 2019). According to Ulumiyah (2018), Patient safety efforts aim to improve the quality of health service facilities through the implementation of risk management related to all aspects of service, so that safe services can improve quality and have a good impact on the image of health facilities.

According to the Indonesian Ministry of Health which issued the Regulation of the Minister of Health Number 11 of 2017 concerning Patient Safety in Hospitals, this is the most important milestone in the implementation of patient safety in Indonesian hospitals. Currently the hospital has made efforts to establish and develop patient safety, but these efforts are made in accordance with the understanding of patient safety management. This ministerial regulation is a guideline for hospitals to be able to carry out the spirit of patient safety as a whole (Wianti et al., 2021).

An important key that means salvation in the Qur'an is An-Najah, which is salvation in the field of faith. Verses about An-Najah include QS. Hud/11:58.

وَلَمَّا جَاءَ أَمْرُنَا نَجَّيْنَا هُودًا وَالَّذِينَ آمَنُوا مَعَهُ بِرَحْمَةٍ مِنَّا  
وَنَجَّيْنَاهُمْ مِنْ عَذَابٍ غَلِيظٍ

Translation:

"And when Our doom came, We saved Hud and the believers with him with Our mercy. We save them (in the Hereafter) from severe doom".

The above verse makes it clear that only believers will have salvation. Islam as a teaching brought by the Prophets and Apostles carries the mission of salvation and well-being both in the world and the Hereafter. Maintaining the safety of one of them can be done on the patient. Patient safety is an important element to improve the quality of service in hospitals.

Patient safety is the patient's right to feel safe and comfortable during their hospital stay. The Ministry of Health (2009) states that according to Article 53(3) of Law No. 36 of 2009, the patient's life must be the top priority in providing health services. This shows that patient safety has become a priority for medical services around the world (Mappanganro, 2020).

Based on preliminary data obtained from Bhayangkara Hospital, Makassar City stated that in November 2021 the number of inpatients was 102 patients, in December 2021 the number of inpatients was 121 patients, while in January 2022 the number of inpatients was 156 patients. So the total number of patients hospitalized during the last 3 months was 379 patients. In addition, the overall number of nurses is 288 people.

The results of a preliminary survey and an interview with one of the members of the Hospital Patient Safety Committee stated that the implementation of patient safety at Bhayangkara Hospital Makassar City had run as it should, but there were still complaints related to communication between health workers.

Based on report data in 2017 and 2018 obtained from RSUD Haji Makassar shows that there are still patient safety incidents. In 2017, data showed 117 cases of patient safety incidents and 3 of them occurred in children, namely 2

cases of KPC (Potential Injury Events) and 1 case of KNC (Near Injury Events). In 2018 cases of patient safety incidents increased to 140 cases and 2 of them occurred in children, namely 1 case of KPC and 1 case of KTD.

Based on the results of initial observations at Labuang Baji Hospital Makassar City, it was found that KTD cases amounted to 6.5% of infusion needle infections (phlebitis) In inpatient installations in 2019, as many as 1.5% misadministered drugs and there were other incidents of patients falling. Research results (Rahmi et al., 2021) The results of observations and observations in the field found that nurses with sufficient knowledge did not apply patient safety in the inpatient room of Labuang Baji Hospital because nurses did not pay attention to patient safety standards, while nurses with less knowledge, did not determine patient safety because nurses did not understand the importance of patient safety, did not know the concept of patient safety and did not know the goals of patient safety.

One of the efforts to improve patient safety is the management of nursing information which is currently crowded in the era of Industry 4.0. The information technology-based hospital system is expected to have many positive impacts on health services provided to the community. This is reinforced by research by Rand (2005) which states that the implementation of health information technology can improve patient safety such as preventing adverse event, Save on health costs, and provide other health benefits such as Scranning risk factors from patient health records and priority of preventive efforts. Other studies have shown that information technology can reduce 55-83% of errors in medicine (Andayani et al., 2020). Utilization of information technology using a system that is the most appropriate solution to improve service quality, coordination, efficiency, accountability, monitoring and delivery of information accurately, precisely and quickly (Sudra et al., 2021).

Currently, patient safety has not fully become a culture in health care. WHO in Araujo et al., (2021) We have developed four categories of

factors that are closely related to the causes of patient safety incidents, namely organizational culture factors, teamwork factors, individual factors and work environment factors. Among these factors, organizational culture is one of the important factors that become a problem in an institution including hospitals (Widyanti & Agtriani, 2016). It should be noted that patient safety efforts require a complete transformation of organizational culture. Organizational culture is a very powerful force and something that persists despite various changes in it. An assessment of organizational culture is needed to make changes that further drive efforts to improve patient safety (Irviranty, 2018). In addition, information technology plays an important role in improving patient safety and quality of care services. Information technology is used to improve patient safety (Jannah, 2019). This is the basis for the importance of knowing the contribution of information technology and organizational culture to patient safety.

The percentage of events that endanger patient safety should be 0%. Based on the explanation above, the high prevalence of events in patients is the reason that underlies the importance of implementing patient safety in various health care settings. Information technology plays a role in improving quality, service effectiveness, and patient safety, while organizational culture also plays a role in creating quality services, one of which is through patient safety culture. For this reason, researchers are interested in conducting further research related to the role of information technology and organizational culture on nurse performance in implementing patient safety in Type B hospitals in Makassar City.

## METHOD

The design of this study is a correlative analytical descriptive research using a cross sectional study approach. The sampling technique used in this study is Non Probabiliti Sampling with Purposive Sampling technique. The samples obtained were 75 people at Makassar Bhayangkara Hospital, 75 people at

Labuang Baji Hospital, and 114 people at Hajj Hospital who met the inclusion criteria. Data collection using questionnaires to measure information technology and organizational culture towards implementing patient safety.

## RESULT

### 1. Characteristics of Respondents

Table 1 Frequency Distribution of Respondents' Characteristics in Bhayangkara Hospital (n = 75)

Characteristic	Frequency	Percentage (%)
<b>Age</b>		
Late Teens (17-25 Years)	6	8,0
Early Adult (26-35 Years)	55	73,3
Late Adult (36-45 Years)	14	18,7
<b>Gender</b>		
Man	11	14,7
Woman	64	85,3
<b>Work Unit</b>		
Manyar	7	9,3
Swiftlet	8	10,7
Garuda	11	14,7
Paradise	11	14,7
Parrot	7	9,3
ICU	20	26,7
Seagull	11	14,7
<b>Recent Education</b>		
SPK	2	2,7
D III	29	38,7
S1	16	21,3
Ners	25	33,3
Master	3	4,0
<b>Period of Service</b>		
<1 Year	2	2,7
1-5 Years	21	28,0
6-10 Years	20	26,7
>10 Years	32	42,7
<b>Training History</b>		
Yes	74	98,7
Not	1	1,3
<b>Position</b>		
Managing Nurse	63	84,0
BLU Nurse	8	10,7
Staff Nurse	3	4,0
Head of Room	1	1,3

Table 1 illustrates the results of Bhayangkara Hospital showing that in terms of age, the average respondents who participated in this study were early adults with 55 respondents (73.3%). Most respondents were female with 64 respondents (85.3%). Most of the respondents who participated came from the ICU work unit with a total of 20 (26.7%). The last education of respondents was mostly D III with 29 respondents (38.7%). The tenure of the majority respondents >10 years with 32 respondents (42.7%). On average, respondents had attended training or seminars related to patient safety with 74 respondents (98.7%). And when viewed from position, the majority of respondents who participated in this study were implementing nurses with a total of 63 respondents (84.0%).

Table 2 Frequency Distribution of Respondent Characteristics at Labuang Baji Hospital (n:76)

Characteristic	Frequency	Percentage (%)
<b>Age</b>		
Late Adolescence (17-25 years old)	1	1,3%
Early Adulthood (26 -35 years old)	34	44,7%
Late Adulthood and Early Elderly (36 -55 years old)	41	53,9%
<b>Gender</b>		
Woman	74	97,4%
Man	2	2,6%
<b>Work Unit</b>		
Ati Wedge Room	8	10,5%
Intensive Care Unit Room	8	10,5%
Mamminasa Baji Room	4	5,3%
Ampe Wedge Room	10	13,2%
Life Wedge Room	6	7,9%
Cardiovascular Care Unit Room	11	14,5%
RPK Room	6	7,9%
Ateka Wedge Room	8	10,5%

Dakka Wedge Room	6	7,9%
Minasa Wedge Room	9	11,8%
<b>Recent Education</b>		
Diploma III	14	18,4%
Strata 1	16	21,15%
Profession Ners	42	55,3%
Master	4	5,3%
<b>Period of Service</b>		
1 to 5 Years	12	15,8%
6 to 10 Years	11	14,5%
More than 10 Years	53	69,7%
<b>Attend Training</b>		
Yes	73	96,1%
Not	3	3,9%
<b>Position</b>		
Managing Nurse	75	98,7%
Head of Room	1	1,3%

Table 2 illustrates that when viewed from the age aspect, most respondents who participated in this study were aged 36 to 55 years with a total of 41 respondents or 53.9%. When viewed from the aspect of female gender with the most total respondents of 74 people or 97.4%. When viewed from the aspect of work units, most of the respondents who participated were from the Cardiovascular Care Unit room with a total of 11 respondents or 14.5%. When viewed from the last educational aspect, most of the respondents who participated were educated in the Ners Profession with a total of 42 respondents or 55.3%. When viewed from the aspect of working period, most of the respondents who participated were more than 10 years with a total of 53 respondents or 63.7%. When viewed from the aspect of attending training, most respondents who participated had attended training with a total of 73 respondents or 96.1%. And when viewed from the aspect of position, most of the respondents who participated were executive nurses with a total of 75 respondents or 98.7%.

The number of respondents in this study was 75 implementing nurses.

Table 3 Frequency Distribution of Respondents' Characteristics at RSUD Haji (n:114)

Characteristic	Frequency	Percentage (%)
<b>Age</b>		
Late Adolescence	4	3,5
Early Adulthood	52	45,6
Late Adulthood	51	44,7
Early Elderly	7	6,1
<b>Gender</b>		
Woman	89	78,1
Man	25	21,9
<b>Recent Education</b>		
D3	32	28,1
S1	20	17,5
Ners	61	53,5
Master	1	0,9
<b>Period of Service</b>		
1-5 years	34	29,8
6-10 years	31	27,2
>10 years	49	43,0
<b>Training History</b>		
Yes	77	67,5
Not	37	32,5

Based on table 3 describing the results of the Hajj Hospital, it shows that the majority of respondents who participated in this study were early adults with a range of 26-35 years, amounting to 52 people or 45.6%. Judging from gender, the majority of respondents are women, amounting to 89 people or 78.1%. In terms of education level, the majority of respondents were with the level of education of Ners, which amounted to 61 people or 53.5%. The most respondents' working period was with a length of >10 years totaling 49 people or 43% and having attended patient safety training as many as 77 people or 67.5%.

2. Univariate Analysis

a. Information Technology Overview

Table 4 Frequency Distribution of Information Technology in Bhayangkara Hospital (n = 75)

Category	Frequency	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	48	64,0
Excellent	27	36,0
Total	75	100,0

Table 4 shows that the role of information technology in Bhayangkara Hospital Makassar City is in the good category as much as 48 (64.0%) and very good as much as 27 (36.0%).

Table 5 Frequency Distribution of Information Technology at Labuang Baji Hospital

(n = 75)

Category	Frequency	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	18	24,0
Excellent	57	76,0
Total	75	100,0

Table 5 shows that the role of information technology at Labuang Baji Hospital is in the good category as much as 18 (24%) and very good as much as 57 (76%).

Table 6 Frequency Distribution of Information Technology in RSUD Haji (n = 114)

Category	Frequency	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	95	83,3
Excellent	19	16,7
Total	114	100

Table 6 shows that the role of information technology in Hajj Hospital is in the good category as much as 95 (83.3%) and very good as much as 19 (16.7%).

b. Overview of Organizational Culture

Table 7 Frequency Distribution of Organizational Culture in Bhayangkara Hospital (n = 75)

Category	Frequency	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	56	74,7
Excellent	19	25,3
Total	75	100,0

Table 7 shows that the role of organizational culture in Bhayangkara Hospital Makassar City is in the good category as much as 56 (74.7%) and very good as much as 19 (25.3%).

Table 8 Frequency Distribution of Organizational Culture at Labuang Baji Hospital (n = 75)

Category	Frequency	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	10	13,3
Excellent	65	86,7
Total	75	100,0

Table 8 shows the results that the role of organizational culture at Labuang Baji Hospital is in the good category as much as 10 (13.3%) and very good as much as 65 (86.7%)

Table 9 Frequency Distribution of Organizational Culture in RSUD Haji (n = 114)

Category	Frequency	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	96	84,2
Excellent	18	15,8
Total	114	100,0

Table 9 shows that the role of organizational culture in RSUD Haji is in the good category as much as 96 (84.2%) and very good as much as 18 (15.8%).

### c. Overview of Patient Safety Implementation

Table 10 Frequency Distribution of Patient Safety Implementation in Bhayangkara Hospital (n = 75)

Category	Frequency	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	8	10,7
Excellent	67	89,3
Total	75	100,0

Table 10 shows that the implementation of patient safety at Bhayangkara Hospital Makassar City is in the good category as much as 8 (10.7%) and very good as much as 67 (89.3%).

Table 11 Frequency Distribution of Patient Safety Implementation at Labuang Baji Hospital (n = 75)

Category	Frequency (n)	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	2	2,7
Excellent	73	97,3
Total	75	100,0

Table 11 shows that the implementation of patient safety at Hajj Hospital is in the good category of 2 (2.7%) and very good as much as 73 (97.3%).

Table 12 Frequency Distribution of Patient Safety Implementation at Hajj Hospital (n = 114)

Category	Frequency (n)	Percentage (%)
Very Lacking	0	0
Less	0	0
Good	57	50,0
Excellent	57	50,0
Total	114	100,0

Table 12 shows that the implementation of patient safety at RSUD Haji is in the good category of 57 (50.0%) and very good as much as 57 (50.0%).

### 3. Bivariate Analysis

Bivariate analysis is used to analyze the relationship between two variables, namely the independent variable with the dependent variable. Since the data is not normally distributed, namely  $p < 0.05$ , an alternative test for linear regression is used, namely Pearson Correlation and Kendall's tau b test. If  $p$  value  $< 0.05$  means there is a relationship, while  $p$  value  $> 0.05$  means there is no relationship.

Table 13 Results of Data Analysis of the Relationship between the Role of Information Technology and Organizational Culture on the Implementation of Patient Safety at Bhayangkara Hospital

		Information Technology	Organizational Culture	Patient Safety Implementation
Information Technology	Pearson	1	0,779**	0,385**
	Correlation		0,000	0,000
	Sig. (1-tailed)	75	75	75
Organizational Culture	Pearson	0,779*	1	0,246*
	Correlation	0,000		0,017
	Sig. (1-tailed)	75		75
Patient Safety Implementation	Pearson	0,385*	0,246*	1
	Correlation	0,000	0,017	
	Sig. (1-tailed)	75	75	75

Based on table 13, it shows that there is a relationship between information technology and the application of patient safety (p value  $0.001 < 0.05$ ), and there is a relationship between organizational culture and the application of patient safety (p value  $0.017 < 0.05$ ).

Table 14 Results of Data Analysis of the Relationship between the Role of Information Technology and Organizational Culture on the Application of Patient Safety at Labuang Baji Hospital

		Information Technology	Organizational Culture	Patient Safety Implementation
Information Technology	Pearson	1		0,379**
	Correlation			0,001
	Sig. (1-tailed)	75		75
Organizational Culture	Pearson		1	0,330*
	Correlation			0,004
	Sig. (1-tailed)		27	75

				N
Patient Safety Implementation	Pearson	0,379*	0,330*	1
	Correlation			
	Sig. (1-tailed)	0,001	0,004	75
	N	75	75	75

Based on table 14, it shows that there is a relationship between information technology and the application of patient safety (p value  $0.001 < 0.05$ ), and there is a relationship between organizational culture and the application of patient safety (p value  $0.004 < 0.05$ ).

Table 15 Results of Data Analysis of the Relationship between the Role of Information Technology and Organizational Culture on the Implementation of Patient Safety at RSUD Haji

		Information Technology	Patient Safety Implementation
Information Technology	Pearson Correlation		0,323**
	Sig. (1-tailed)		0,000
	N	114	114
Patient Safety Implementation	Pearson Correlation	0,323**	1
	Sig. (1-tailed)	0,000	
	N	114	114

		Patient Safety Implementation
Organizational Culture	Correlation Coefficient	0,103*
	Sig. (1-tailed)	0,93
	N	114

Based on table 15, the results show that there is a relationship between information technology and the application of patient safety (p value  $0.000 < 0.05$ ), while in the results of Kendall's tau b test on organizational culture at Hajj Hospital, the results are no relationship between organizational culture and the implementation of patient safety (p value  $0.093 > 0.05$ ).



## DISCUSSION

### 1. Overview of Information Technology at Type B Hospital Makassar City

Based on univariate analysis using frequency distribution, it was found that the average role of information technology in Bhayangkara Hospital Makassar City was in the good category with a percentage of 64.0%. The role of information technology at Labuang Baji Hospital is in the very good category with a percentage of 76%. and the role of information technology at RSUD Haji Makassar is in the good category with a percentage of 83.3%. Based on these results, it can be assumed that information technology in the hospital has played a good role in service delivery. Understanding of the use of information technology can be done by understanding the factors that can affect the use of information technology. One of the factors that can affect the use of information technology is the age factor. The average age of respondents in this study at Bhayangkara Hospital was early adulthood as many as 55 (73.3%) respondents, and at Labuang Baji Hospital the age of late adulthood and early elderly was 41 (53.9%) while in RUSD Haji the average age of prescriptions was early adulthood as much as 52 (45.6%). Based on research conducted Zogby International in the United States in (Ngafifi, 2014) 24% of the 1,950 respondents consisting of adults stated that technology has a significant impact on life. This is confirmed by research Wahono et al. (2020), which states that technology has influenced and changed adults in their daily lives. In line with research Palupi et al. (2015), which states that there is a significant influence between age factors on interest and ability in the use of information and communication technology-based media.

In addition, research by Wermadeni & Princess (2021), stating that tenure and mastery of information technology have a significant effect on employee performance. This is confirmed by research Aprilyanti (2017), which states that the longer the working life of a workforce, the skills and ability to do work should increase. Research Marlina (2017), also states that work experience affects the

effectiveness of the use of information systems. According to Wermadeni & Princess (2021), the longer the working period and the more skilled employees are in doing a job so that they can improve their performance to the maximum depending on their abilities, abilities and skills in terms of design, development, implementation, support or management of systems mastered, especially software and hardware in information technology. Therefore, it is said that information technology has a considerable influence on the service process in hospitals.

On the other hand, the level of education also affects the mastery of technology. This is according to research Fahmiswari & Dharmadiaksa (2013), that the level of education has a positive effect on the effectiveness of the use of information systems. In line with this Marlina (2017), in his research found the results that the level of education affects the effectiveness of the use of information systems. The higher the level of education, the higher the effectiveness of using computer information systems. Research Rahmawati (2008), states that information technology can be utilized effectively if members in the organization can use the technology well. Therefore, it is very important for members of the organization to understand and predict the usefulness of the system. Research Launtu (2016), stating that at present hospitals are a type of large, capital-intensive and technology-intensive community service business. In line with technological developments, the complexity of hospital services has increased significantly.

Technological advances have brought very rapid evolution in every sector, including the health sector. Health information technology is able to improve the quality of optimal health services for patients (Feoh et al., 2022). In line with this Yani (2018), in his research mentioned that the use of technology in the health sector can improve health services and can change health behavior.

Some research is related to technological developments such as research conducted by Manganello et al. (2017), in his article

mentioned that health services are strongly influenced by the use of digital technology, the application of health interventions in the development of digital technology is very effective in serving the community. This is similar to research by Moller et al. (2017), in his article that the application of digital technology-based health interventions is considered very beneficial. First, it can facilitate access to services, facilitate the reach of services to the community. Second, it can move health interventions to digital platforms and present research with new opportunities to advance health care theories and concepts.

Advances in information technology have brought convenience and prosperity to human life, as well as a means of human perfection as servants of Allah and His Caliph, because Allah bestows upon humans complementary blessings, namely religious gifts and technological pleasures. Regarding information technology contained in the Word of God QS. Ar-Rahman/55:33, namely:

يَمْعَشِرَ الْجِنَّ وَالْإِنْسَ إِنِ اسْتَطَعْتُمْ أَنْ تَنْفُذُوا مِنْ أَقْطَارِ السَّمَاوَاتِ  
وَالْأَرْضِ فَانْفُذُوا لَا تَنْفُذُونَ إِلَّا بِسُلْطَانٍ

Translation:

"O Jinn and men! If you are able to penetrate (cross) the corners of heaven and earth, then cross it. You cannot penetrate it but by strength (of God)."

Some experts explain that the word Sulthan has a double meaning, some are interpreted as strength and power, some are interpreted as science, skills, and others. So what is meant by him is the spaciousness and depth of knowledge (Tafsir Ar-Razii/306).

Abdul Al-Razzaq Naufal in his book Al-Muslimun Wa Al-Ilm Al-Hadith defines the word Sulthan as science and skill or technology. He then explained that this verse shows people that if their knowledge and skills, or in this case technology, are sufficient, it is not impossible that they can penetrate space.

The connection of the verse with the discussion in this study is that the verse recommends for

anyone who works in the field of science and technology to try to develop the ability as far as possible to penetrate (cross) the corners of heaven and earth. Without mastery in the field of science and technology, nurses will find it difficult to provide efficient and adequate services. Therefore, humans are encouraged to always develop science and technology.

## 2. Overview of Organizational Culture at BKota Makassar Type Hospital

Based on univariate analysis using frequency distribution, it was found that the average role of organizational culture at Bhayangkara Hospital Makassar City was in the good category with a percentage of 74.7%, at Labung Baji Hospital it was in the very good category with a percentage of 86.7% and at Haji Makassar Hospital it was in the good category with a percentage of 84.2%. Based on these results, it can be assumed that the organizational culture at the hospital has played a good role in service delivery. Hadari (1998:479) in Syahrir (2018), argues that organizational culture is the basic beliefs and assumptions that bind the togetherness of each member of the organization / company where the actualized value system becomes the philosophy and basic principles of hospital management which is used as a guide for organizational policy and is used as the basic assumptions and beliefs of the organization.

Based on the researchers' assumption that several factors that can affect organizational culture are age, gender, and education level. This is in line with research Malik (2014), which states that aspects of age, gender aspects, and level of education are one of the determinants of organizational culture variation. In addition, education and training are stated to have a direct effect on organizational culture, this is stated by Tobari (2015), that the better the education and training, the better the organizational culture. This is in line with the opinion of Flippo in Hasibuan (2000), which states that: "Education is related to increasing general knowledge and understanding of the environment as a whole, while training is an effort to increase the knowledge and expertise of an employee to do

a certain job." This shows that education and training is an effort made by the organization in directing its employees to master various skills and knowledge that are useful for the organization.

This study emphasizes the quality of resources in service in organizational culture as stated in the mission of Bhayangkara Hospital Makassar City, which is to improve the quality of human resources who are professional, moral, and have an organizational culture as excellent service. In accordance with research conducted by Maryadi (2014), a good hospital organizational culture is a culture of service, namely by familiarizing the direction of action orientation and attitudes and behavior to those served, not self-interest. Where service quality is defined as the expected level of excellence and control over the level of excellence to meet the wishes of its clients, service quality is not seen from the point of view of the provider or service provider, but based on the perception of the community (client) as a recipient of service (Syahrir, 2018).

According to Triguno (1997) and Sugiarto (1999) in (Syahrir, 2018) that it is the client who enjoys or feels the service provided, so they are the ones who should judge and determine the quality of service. The quality of service in accordance with the expectations of the community requires the government to be able to provide the best service or excellent service, namely the maximum ability of a person to relate to others in terms of service, serve at any time quickly and satisfactorily, be polite, friendly and helpful, and professional.

This study states that organizational culture in hospitals Type B Hospital Makassar City has been well done, in line with this Pramadewi (2010), states that an organizational culture is considered good if its values have been internalized intensively and firmly held by all members in the organization. This is reinforced by research Afiah et al. (2013), that a strong or good organizational culture affects the effectiveness of the organization in the hospital. Research by Hilda (2018), also stated that organizational culture has a significant effect with strong categories on optimizing the

performance of implementing nurses. Based on the assumption of researchers states that this means that the stronger or better the organizational culture owned by the organization or in this case nurses, it will increase the effectiveness and performance produced.

Islam provides an explanation of organizational culture in the main sources i.e. the Qur'an and Hadith. Studies related to organizational culture are contained in the QS explanation. An.Nisa'/4:71, that is:

يَا أَيُّهَا الَّذِينَ آمَنُوا خُذُوا حِذْرَكُمْ فَانفِرُوا تَابًا أَوْ انْفِرُوا جَمِيعًا

Translation:

"O believers! Be prepared, and go forward (to the battlefield) in groups, or advance together (simultaneously)".

The relationship between the verse and the discussion in the study is that the verse explains the importance of carrying out an activity together for the effectiveness and efficiency of achieving the goals that have been set. In addition, organizational culture in Islamic studies is seen as having values, namely sincerity, trust, and jama'ah.

### 3. Overview of the Application of Patient Safety in Makassar BKota Type Hospital

Based on univariate analysis using frequency distribution, it was found that the average application of patient safety at Bhayangkara Hospital Makassar City was in the very good category with a percentage of 89.3%. The implementation of patient safety at Labuang Baji Hospital is in the very good category with a percentage of 97.3%. The implementation of patient safety at RSUD Haji Makassar is in the very good category with a percentage of 50.0%. Based on these results, it can be assumed that the implementation of patient safety in the hospital has been carried out very well.

Bhayangkara Hospital Makassar City is one of the Type B hospitals with very adequate service quality. This hospital aims to increase customer satisfaction by minimizing complaints to

increase public trust in Makassar Bhayangkara Hospital. In addition, Bhayangkara Hospital also focuses on improving service quality in accordance with accreditation standards where these standards include the implementation of patient safety.

Based on the researchers' assumptions, the application of patient safety in the hospital is carried out very well because nurses already have knowledge about the application of good patient safety, the average nurse education is quite high at Bhayangkara Hospital, namely D III (38.7%) and Ners (33.3%), at Labuang Baji Hospital the average nurse education and at Labuang Baji Hospital the average nurse education is Ners with a percentage of 55.3% and at Hajj Hospital the average level of nurse education is professional Ners with a percentage of 53.3%. Generally, nurses have attended patient safety training or seminars at Bhayangkara Hospital by 98.7%, at Labuang Baji Hospital by 96.1% and at Makassar Hajj Hospital by 67.5%. This is one of the factors in the high level of knowledge of nurses, with the knowledge possessed by a nurse it will provide more effective actions.

This is in line with research conducted by Basri (2021), which states that patient safety efforts depend heavily on the nurse's knowledge. Adequate knowledge, then the behavior of prioritizing patient safety by the nurse will take place continuously. In providing nursing care must have the right knowledge, skills, and attitudes in handling the complexities of health care. With adequate knowledge, health workers including nurses can implement and maintain a culture of patient safety.

The results of this study are in accordance with the theory Listianawati (2018), that patient security and safety in hospitals is a system where hospitals make patient care safer. A patient safety system can be carried out by nurses if supported by knowledge and good attitudes. According to Myers (2012), that applicability patient safety It really depends on the knowledge of health workers. If the officer applies patient safety Based on adequate knowledge, then the application patient safety by officers will be continuous.

Other factors that can affect the implementation of patient safety are age and length of service. Age-related based on this study shows that the frequency distribution of respondents is dominated by early adulthood. According to Saragih & Rumapea (2013), that a person's age is broadly an indicator in every decision making that refers to each experience. The older you get, the more responsible you are in receiving an instruction and in carrying out a procedure. The older a person is, the more mature he will be in thinking and acting and readiness that prioritizes patient safety. Regarding working period based on this study, it shows that the frequency distribution of respondents is dominated by >10 years of service as many as 32 (42.7%) respondents. According to Wulandari et al. (2014), the longer the working period, the better the skills will be because they have adjusted to their work, while according to Elrifda (2011), that a person's work experience can affect performance in performing tasks, as well as in maintaining patient safety. Ideally, someone who has experience will be better at implementing patient safety.

When the implementation of patient safety is done correctly, services that prioritize optimal safety and quality will have a broad impact. Especially for the community will receive services that are more quality, safer, and in accordance with their expectations. It is an added value for the hospital to achieve national and international service standards. Safe and quality services are also expected to increase public confidence in hospitals. New values can grow for health workers, especially the importance of implementing patient safety in every service activity carried out (Sriningsih & Marlina, 2020).

Regarding salvation, it is contained in the hadith narrated by At-Tirmidhi and Ahmad, namely:

عن أبي الفضل العباس بن عبد المطلب -رضي الله عنه- قال : قلت : يا رسول الله عَلِّمْنِي شَيْئًا أَسْأَلُهُ اللهَ -تعالى-، قال : «سألو اللهَ العافيةَ» فمكثتُ أياماً، ثم جئتُ فقلتُ : يا رسول الله علمني شيئاً أسأله الله -تعالى-، قال لي : «يا عباس، يا عم رسول الله، سألو الله العافية في الدنيا والآخرة»

Translation:

"From Abu Al-Fadhl Al-Abbas bin Abdul Mutthalib Radiyallahu Anhu, he said: I said, "O Messenger of Allah, teach me something that I ask Allah Almighty". He replied, "Ask Allah for salvation." Then I stayed for a few days, then went to him again and said, "O Messenger of Allah, teach me something that I ask Allah Almighty". He said to me, "O Abbas, O uncle of the Messenger of Allah, ask Allah for salvation in this world and the Hereafter". (HR. At-Tirmidhi no. 3581 and Ahmad no. 1:209)

This hadith is one of the hadiths of Jamawi Al-Kalim (Concise sentences full of meaning) uttered by the Prophet Sallallahu 'Alaihi Wasallam. His uncle, Abbas Radiyallahu Anhu asked to be taught a prayer. So he taught him a prayer in the form of a short phrase but its meaning is very deep, covering the goodness of the world and the hereafter. The Prophet Sallallahu 'Alaihi Wasallam said, "Ask Allah for salvation!" even repeated at the end of the hadith, "O Abbas, O uncle of the Messenger of Allah, ask Allah for salvation in this world and the Hereafter."

The connection between the hadith and the discussion in this study is that this hadith contains instructions that every human being should ask for salvation in the world, which is to be safe from illness and trials. And salvation in the hereafter is by forgiveness from sins and obtaining what is desired. Salvation can be obtained by praying. Praying for salvation is above all prayer.

#### 4. The Relationship of Information Technology to the Application of Patient Safety in Type B Hospital Makassar City

Based on the results of bivariate analysis using an alternative linear regression test, namely Pearson Correlation,  $p$  values of  $0.001 < 0.05$  were obtained. This shows that there is a significant relationship between information technology and the implementation of patient safety at Bhayangkara Hospital Makassar City.

Based on the results of bivariate tests at Labuang Baji Hospital, a  $p$ -value of 0.001

( $p < 0.05$ ) was obtained, meaning that there is a relationship between information technology and the application of patient safety at Labuang Baji Hospital.

Based on the results of the bivariate test at the Hajj Hospital, the results of the scores were obtained value  $p$ -value 0.000 ( $p < 0.05$ ) means that there is a relationship between technologies Information with patient safety practices at RSUD Haji Makassar. This is in line with research Ghofar et al. (2022), which states that the use of information technology in supporting services prioritizes quality patient safety. Patient safety is the core of the quality of health services in hospitals that are responsible for improving the quality of health services in managing patient safety. The rapid development of technology greatly affects the demands on health services by utilizing information technology to improve the effectiveness of health service processes, one of which is in a hospital (Yustin et al., 2021).

The use of information technology management systems in the field of nursing has a positive impact on the development and progress of the field of health services (Mulyani et al., 2019). This is in line with research conducted by Agyemang et al. (2021), where this study highlights how health information technology can be utilized to create health learning systems and improve patient safety. Based on the researchers' assumption that technology has an impact on improving the performance and professionalism of nurses in interacting with patients. The application of technology certainly needs to be done in order to be able to achieve optimization of health services that focus on patient safety, nurse job satisfaction and organizational success.

Nursing is a complex profession that integrates knowledge, skills, and competencies to provide patient care and improve the quality of care. Various efforts are made to be able to provide safe and quality services, one of which is the use of information technology. Research Ayu (2017), mentioned that one of the benefits of using information technology is expected to increase patient safety.

### 5. The Relationship of Organizational Culture to the Implementation of Patient Safety in Type B Hospital Makassar City

Based on the results of bivariate analysis using an alternative linear regression test, namely Pearson Correlation, a p value of  $0.017 < 0.05$  was obtained. This shows that there is a significant relationship between organizational culture and the implementation of patient safety at Bhayangkara Hospital Makassar City. The results of the bivariate test obtained a p value of  $0.004 < 0.5$ . This shows that there is a significant relationship between organizational culture and patient safety implementation at Labuang Baji Hospital.

This can be influenced by the organizational culture at the hospital is in the good category with a percentage of 74.7%, so that it can support the implementation of patient safety which is already in the very good category with a percentage of 89.3%. This is in line with research Pratiwi (2018), which states that there is a significant influence between organizational culture on the implementation of patient safety.

Hospitals have an obligation and responsibility in improving the implementation of patient safety by providing safe patient care. Improving the implementation of patient safety needs to be planned, implemented, monitored, evaluated and improved on an ongoing basis. The implementation of these efforts also requires health practitioners who understand the concept of patient safety and are able to apply it consistently in the delivery of health services (Wardhani, 2017).

In general, the good culture category includes dimensions of collaboration within departments, patient safety management support, and organizational learning and continuous improvement. Without a good reporting system, no real learning can occur. Meanwhile, culture can only thrive if whistleblowers feel benefits and constructive input and are not afraid of challenges. The role of organization and management is an important factor that contributes to the formation of a patient safety culture.

Organizational culture is the most fundamental factor as an organizational engine for a better patient safety culture (Irviranty, 2018).

In contrast to the results of bivariate analysis at the Makassar Haji Hospital which used the Kendall's tau b test, a p value of  $0.093 < 0.05$  was obtained. From the results of this study, it can be concluded that there is no significant relationship between organizational culture and the implementation of patient safety at RSUD Haji Makassar.

The results of this study are in line with research conducted by Hidayat N (2018) which states that there is no specific organizational culture related to all aspects of patient safety. Research conducted by Kurniawati (2021) also revealed the same thing, namely organizational culture does not have a positive influence on patient safety. Based on the results of research at RSUD Haji Makassar, nurses do not get the opportunity to participate in making decisions autonomously in implementing organizational culture. Though participation in nurse autonomous decision making is very important in implementing patient safety, especially patients need security and strict supervision in care services.

Organizational culture is a written guideline regarding rules, standards of behavior whether accepted or not and patient safety culture is an integrated pattern of behavior of individuals and organizations in providing safe services for clients. A patient safety culture is important because building a patient safety program is a way to improve patient safety (Herawati, 2015).

## CONCLUSION

Based on the results of research data analysis on the role of information technology and organizational culture on the implementation of patient safety in Makassar City Type B Hospital which has been carried out through the distribution of questionnaires, several conclusions were obtained, including:

1. In general, the description of information technology at the Makassar City Type B Hospital is stated to be good.
2. In general, the description of organizational culture at the Makassar City Type B Hospital is stated to be good.
3. In general, the picture of the implementation of patient safety in Makassar City Type B Hospital is stated to be very good.
4. There is a relationship between information technology and the application of patient safety at Bhayangkara Hospital Makassar City ( $p = 0.001$ ).
5. There is a relationship between information technology and the implementation of patient safety at Labuang Baji Hospital ( $p = 0.001$ ).
6. There is a relationship between information technology and the implementation of patient safety at RSUD Haji Makassar ( $p = 0.000$ ).
7. There is a relationship between organizational culture and the implementation of patient safety at Bhayangkara Hospital Makassar City ( $p = 0.017$ ).
8. There is a relationship between organizational culture and the implementation of patient safety at Labuang Baji Hospital ( $p = 0.004$ ).
9. There is no relationship between the culture of organization and the implementation of patient safety at RSUD Haji Makassar ( $p = 0.093$ ).

## SUGGESTION

Based on the results of the study, there are several suggestions recommended by researchers that may be taken into consideration.

1. Share Type B Hospital Makassar City  
So that hospitals can develop reporting systems and the use of information technology,

especially in the application of patient safety in Type B Hospital Makassar City.

2. For Academic Institutions

It is expected to further improve learning in order to increase knowledge about information technology and organizational culture related to patient safety preparation.

3. For the Next Researcher

It is hoped that this research can increase insight and experience for researchers and become a reference for initial data for future research development related to patient safety of Makassar City Type B Hospital.

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