Original Research

ANALYSIS OF JOB CHARACTERISTICS, JOB SATISFACTION AND PATIENT SAFETY CULTURE AMONG HEALTHCARE (STUDY IN MUHAMMADIYAH UNIVERSITY GENERAL HOSPITAL OF MALANG)

Wirasasmita Paripih [ID]**, Tri Martiana** [ID]

Department of Health Policy & Administration, Faculty of Public Health, Airlangga University, Surabaya 60115, Indonesia
*E-mail: wirasasmita.paripih-2021@fkm.unair.ac.id

Abstract

Background
Job satisfaction is a combination of feelings towards his job, both happy and unhappy, as a result of interaction with the work environment. Job satisfaction can have a significant influence on patient safety culture. The purpose of this study was to analyse job characteristics, employee job satisfaction, and patient safety culture in health workers at the Muhammadiyah University General Hospital of Malang.

Methods
This research was analytic observational research with a cross-sectional design. The sample was 144 health workers obtained from 202 people through simple random sampling. The HSOPS questionnaire version 2.0 to measure patient safety culture consists of 10 dimensions, and the MMSS questionnaire to measure job satisfaction consists of 8 dimensions. Data was analysed using structural equation modelling with Smart PLS 3.0 software.

Results
The result showed that there was an influence of job characteristics on job satisfaction (T-statistic = 3,472 > 1.96) with a coefficient value of -0,333, which means doctor had higher level of job satisfaction than nurse, midwife, pharmacist, and other health workers. Job satisfaction affected patient safety culture (T-statistic = 5.359 > 1.96) with a coefficient value of 0,451, the higher the level of job satisfaction, the higher the level of patient safety culture.

Conclusion
The conclusion of this study was that there was an influence of job characteristics and job satisfaction. Job satisfaction influenced patient safety culture among health workers. Patient safety culture need to be improved by strengthening the dimensions of employees and work rates, responding to errors, and reporting patient safety events. To improve job satisfaction, it was necessary to strengthen the dimensions of work-family balance and scheduling.

Keywords: Job Characteristic; Job Satisfaction; Patient Safety Culture

INTRODUCTION

Patient safety is an important component of healthcare quality. Continuous improvement is needed to strengthen the safety culture in health organizations. Patient safety culture is a multidimensional concept as a product of values, attitudes, perceptions, competencies and behavioral standards of individuals and groups that determine the commitment, style and proficiency of administration in managing patient safety. If this culture is strong, it can have a beneficial impact on the hospital (Tartaglia Reis et al., 2018).

"To Err is Human" is a twist on patient safety. It discusses medical errors in the eyes of the public and highlights why every healthcare organization in the United States should consider patient safety a priority. Before the report was published, many leaders in large healthcare organizations did not. The report noted several key points such as; "errors" are frequent, costly, system-related issues, preventable errors, and safety can be improved. Important changes resulted, including a significant increase in patient safety research sponsored primarily by the Agency for Healthcare Research and Quality (AHRQ) and hospital programs focused on measurement, accreditation, and regulation (Bates & Singh, 2018).

Denial regarding the extent and seriousness of the problem in the medical profession about medical errors that occur is still encountered (Vincent, 2010). The reason for this denial is that socialization and training patterns in the medical profession are not prepared to deal with situations that admit errors. As Charles Bosk (2004) points out in his detailed ethnography of the work of surgeons in the United States, the ability to step back and take an objective view of errors is not normal practice for members of the medical profession (Bosk, 2003).

In 1994 Harvard-based surgeon Lucian Leape published a paper summarizing evidence showing that the rate of errors in medicine is very high. Medical errors are often the cause of death among patients undergoing treatment in various healthcare settings (e.g. hospitals) where they should not have to occur. The IOM report states that between 44,000 and 98,000 people die in US hospitals each year due to medical errors. In the UK research into the causes of the high number of child deaths following cardiac surgery at Bristol Royal Infirmary during the 1980s raised the issue of widespread systemic failure among hospital staff and greatly added to the debate around how to prevent errors in healthcare (Waterson, 2014).

The increase in the number of studies to address safety gaps increased by more than 250 percent over a few years, and many occurred in areas that had not received attention before (Bates & Singh, 2018). To Err is Human asserts that the problem is not bad people in healthcare

providers, but good people working in bad systems that need to be made more secure (Khon & Corrigan, 2000).

Based on the national guidelines for hospital patient safety of KEMENKES RI edition III in 2015, there are five issues regarding safety in hospitals, including: patient safety, worker or health worker safety, infrastructure safety which can have an impact on patient safety and environmental safety officers (green productivity) which can have an impact related to environmental pollution and hospital business safety which can have an impact on hospital survival. These five aspects need to be an important concern for hospitals to be implemented. Patient safety is the top priority to be implemented so that it will have a good impact on the quality and image of the hospital (Mandriani et al., 2019 ; Keselamatan Pasien, 2015).

Hospital patient safety culture assessments are used as a management tool and encouraged by policy makers and health managers in countries around the world. These cultural assessments have many uses such as building staff awareness about patient safety, evaluating the current state of patient safety culture in hospitals, identifying strong points of safety culture and areas for improvement, analyzing trends in safety culture over time, evaluating the impact of safety culture initiatives and interventions to improve patient safety and making comparisons within and between healthcare organizatation (Tartaglia Reis et al., 2018).

In a systematic review study conducted by Tartaglia Reis et al. (2018) it was found that the organizational culture of hospitals is still largely underdeveloped or weak in terms of patient safety and consists of dimensions that require strengthening. Therefore, hospitals need to think about 1) strategies to prepare personnel to provide safe and quality health services, 2) work processes around shift changes and handover to prevent the loss of important information about patients and their caregivers, 3) cooperation, integration and coordination of teamwork between units in the hospital to prevent fragmented services, 4) and a culture of blame that must be changed to a fair culture so that conditions are created not to blame so that it can have an impact on increasing professionalism and institutional accountability and can identify priorities in failures and their impacts so that mitigation of these failures and impacts can be carried out (Tartaglia Reis et al., 2018).

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In a study conducted by Wang et al (2018) conducted on nurses in Taiwan stated that employee job satisfaction is an important indicator of nurses' attitudes towards patient safety culture. Employee job satisfaction directly affects patient safety culture. When employees have a high level of job satisfaction, they tend to support organizational culture including patient safety culture. Job satisfaction in nurses is a crucial indicator of nurse performance (Wang et al., 2019).

RESEARCH METHODE

In accordance with the time of data collection, this research is categorized as research with a Cross-Sectional design, namely data collection is carried out at one period of time. The research activities were carried out at the General Hospital of Muhammadiyah University of Malang which is located in Landungsari Village, Dau District - Malang Regency in December 2022-January 2023. The population in this study were health workers at the General Hospital of Muhammadiyah University of Malang with permanent employment status totaling 202 people. Calculation of the number of samples using the Lemeshow method with a confidence level of 95% obtained as many as 133 respondents. The respondents were exceeded by about 10% so that the total was 144 respondents. The inclusion criteria of this study are health workers who have employment status as permanent employees and are willing to become respondents. Meanwhile, the exclusion criteria for this study are health workers who are currently undergoing a study period and health workers who only work in managerial positions.

The independent variable is employee job satisfaction and the dependent variable is patient safety culture. The Patient Safety Culture instrument uses the Hospital Survey on Patient Safety Culture (HSOPC) developed by AHRQ version 2.0. Communication failure 3 items, communication openness 4 items, handover and patient transfer information 3 items, hospital management support for patient safety 3 items, organizational learning in continuous improvement efforts 3 items, patient safety event reporting 2 items, response to failure 4 items,

staff and workplace 4 items, support from supervisors, managers, or clinical leaders 3 items, teamwork 3 items.

The research model that will be used in this study is a tiered structure model and to test the proposed hypothesis, the Structural Equation Modelling (SEM) analysis technique is used which is operated through the SMART-Partial Least Square program. Data on job characteristics, Job Satisfaction and Patient Safety Culture will be analyzed analytically with a quantitative approach. The statistical test used is structural equation model (SEM). The reason for using SEM, because SEM is a statistical technique used to build and test statistical models which are generally in the form of causal models.

RESULT

The characteristics of health workers at the General Hospital of Universitas Muhammadiyah Malang are categorized into 6 categories which include profession, work unit, length of work in the hospital, length of work in the unit, working hours, and interaction with patients. The job characteristics can be seen in table below.

Table 1. Frequency Distribution of Health Worker Characteristics of Health Workers at RSUUMM in 2023

Job Characteristic	Frequency	Percentage
Profession		
Docter	6	4.2
Nurse	101	70.1
Midwife	2	1.4
Pharmacist	21	14.6
Other health care worker	14	9.7
Total	144	100
Length of Service at the Hospital		
1 to 5 years	58	40.3
6 to10 years	85	59
11 years or more	1	0.7
Total	144	100
Length of Service in the Unit		
Less than 1 year	7	4.9
1 to 5 years	85	59.4
6 to 10 years	50	34.5
11 years or more	1	0.7
Total	144	100

Continued Table 1 Frequency Distribution of Health Worker Characteristics at RSUUMM in 2023.

Job Characteristic	Frequency	Percentage
Patient Interaction		
Yes, interact with patient	129	89.6
No interact with patient	15	10.4
Total	144	100
Work hour		
Less than 30 hour a week	7	4.9
30-40 hours per week	137	95.1
Total	144	100
Unit		
Cathlab	5	3,5
Haemodialisis	23	16,0
ICU	12	8,3
IGD	11	7,6
Inpatient Installation	41	28,5
others	52	36,1
Total	144	100

As for distribution frequency dimensions culture safety patient on energy health at the Muhammadiyah University of Malang General Hospital is presented in table 2 below:

Table 2. Distribution Frequency Dimensions Culture Safety Health Personnel Patients at RSUUMM in 2023

Culture Safety Patient	Frequency (n)	Percentage (%)
Teamwork		
Low	17	11.8
Currently	18	12.4
Tall	109	75.7
Total	144	100
Employees and Work Rate		
Low	14	9.7
Currently	57	39.6
Tall	73	50.7
Total	144	100
Learning Organization-Improvement Sustainable		
Low	5	3.5
Currently	18	12.5

Culture Safety Patient	Frequency (n)	Percentage (%)
Tall	121	84
Total	144	100
Response To Error		
Low	16	11.1
Currently	60	41.7
Tall	68	47.2
Total	144	100
Supervisor Support		
Low	7	4.9
Currently	48	33.3
Tall	89	61.8
Total	144	100
Communication about Error		
Low	13	9.0
Currently	8	5.6
Tall	123	85.4
Total	144	100
Openness Information		
Low	13	9.0
Currently	35	24.3
Tall	96	66.7
Total	144	100
Reporting Incident Safety Patient		
Low	40	27.8
Currently	28	19.4
Tall	76	52.8
Total	144	100

Continued Table 2 Distribution Frequency Dimensions Culture Safety Health Personnel Patients at RSUUMM in 2023

Culture Safety Patient	Frequency (n)	Percentage (%)
Support Safety Patient from Hospital management		
Low	6	4.2
Currently	41	28.5
Tall	97	67.4
Total	144	100
Handover and Exchange Information		

Low	11	7.6
Currently	22	15.3
Tall	111	77.1
Total	144	100

As for distribution frequency dimensions satisfaction Work employee on power health at the General Hospital of the University of Muhammadiyah Malang presented in table 3 below:

Table 3. Distribution Frequency Dimensions Satisfaction Work Health Workers at RSUUMM in 2023

Satisfaction Work	Frequency (n)	Percentage (%)
Control and Responsibility		
Low	3	2.1
Currently	28	19.4
Tall	113	78.5
Total	144	100
Scheduling		
Low	13	9.0
Currently	90	62.5
Tall	41	28.5
Total	144	100
Chance Interact		
Low	4	2.8
Currently	26	18.1
Tall	114	79.2
Total	144	100
Opportunity Professional		
Low	9	6.3
Currently	42	29.2
Tall	93	64.6
Total	144	100
Rewards Extrinsic		
Low	8	5.6
Currently	45	31.3
Tall	91	63.2
Total	144	100
Work colleague		
Low	3	2.1
Currently	23	16.0
Tall	118	81.9

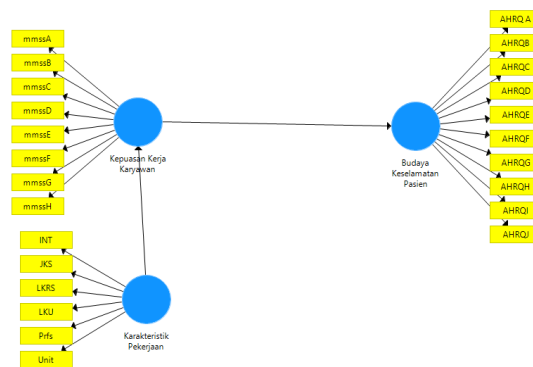| Satisfaction Work	Frequency (n)	Percentage (%)
Total	144	100
Praise and Recognition		
Low	2	1.4
Currently	40	27.8
Tall	102	70.8
Total	144	100
Balance Work and Family		
Low	21	14.6
Currently	87	60.4
Good	36	25.0
Total	144	100

Figure 1. Path Diagram of Structural Equation Modeling

Based on Figure 1, it is known that there are three construct variables, namely: Respondent characteristics, Job Satisfaction, and Patient Safety Culture. The respondent characteristics dimension consists of patient interaction (INT), working week hours (JKS), length of service in the hospital (LKRS), length of service in the unit (LKU), profession (PRFS), and unit (UNT). The job satisfaction dimension consists of extrinsic rewards (MMSA), scheduling (MMSB), family-work balance (MMSC), coworkers (MMSD), interactions (MMSE), praise and recognition (MMSF), professional opportunities (MMSG), and control and responsibility (MMSH). The dimensions of patient safety culture consist of Communication about errors (AHRQA), openness of communication (AHRQB), handover and information exchange (AHRQC), patient safety support from hospital management (AHRQD), organizational learning-continuous improvement (AHRQE), patient safety event

reporting (AHRQF), response to errors (AHRQG), employee and work pace (AHRQH), supervisor, manager, or clinical leader support (AHRQI), and teamwork (AHRQJ).
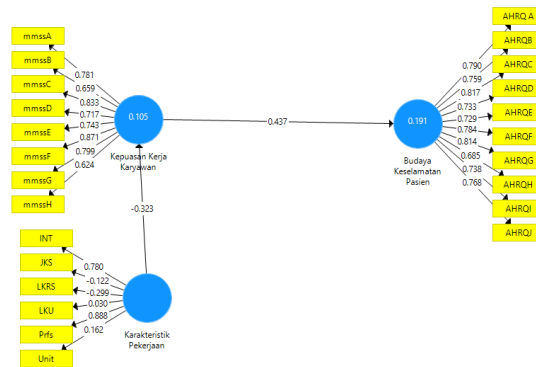

Figure 2. Overview of Outer Model Structural Equation Modeling

Based on the loading factor results in Figure 2, there are indicators that have an outer loading value <0.70, totaling 7 indicators. This shows that of the 7 indicators, 4 indicators come from the job characteristics variable, 2 indicators come from the job satisfaction variable, and 1 indicator comes from the patient safety culture variable. So that 7 invalid indicators were then excluded from the study and carried out a second validity test with valid indicators. Then the valid indicators can be presented in Figure 3 as follows:
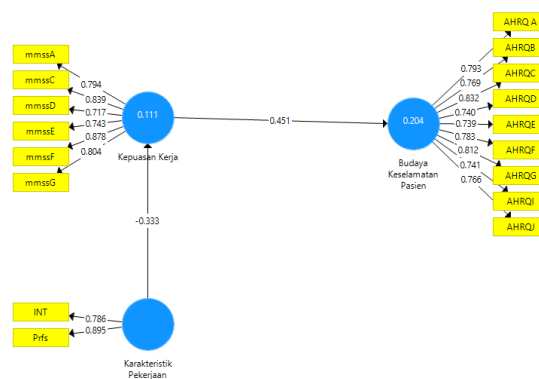

Figure 3. Loading Factor Results

Figure 3 is the result of the convergent validity test after 7 invalid indicators are removed, so that only variables that have outer loading> 0.70 are used in further analysis.

A variable can be said influential significant to the variable latent If mark *T-Statistic* > 1.96 or *p-value* < 0.05. If value *T-Statistic* <1.96 or >0.05 means there is no research variable influence on something latent variable.

Table 4. Inner Model Results

Hypothesis	Coefficient	*T Statistics*	*P Values*
Influence Characteristics work on Job Satisfaction	-0.333	3,472	0.001
The Influence of Job Satisfaction on Patient Safety Culture	0.451	5,359	0,000

Based on table 4, the conclusion is that there is influence between characteristics work on job satisfaction with grades *T-Statistics* of 3.472 and *p-value* 0.001. Job satisfaction has influence on patient safety culture with values *T-Statistics* of 5.359 and *p-value 0.000.* Coefficient value influence characteristics on job satisfaction of -0.333 with direction influence negative, meaning that doctor satisfaction is higher Compared with nurses, nurses' job satisfaction is higher compared to midwives, and pharmacist job satisfaction is higher compared to power health other. Coefficient value negative on characteristics work also means that increasingly tall interaction power health with patients, increasingly job satisfaction is also high. Coefficient value the influence of job satisfaction on patient safety culture is 0.451 in direction influence positive, that is the more the higher job satisfaction, the more There is also a high patient safety culture among the staff health.

Table 5. *R Square Values*

	R Square	*R Square Adjusted*
Employee Job Satisfaction	0.111	0.105
Patient Safety Culture	0.204	0.198

R Square value based on table 5 shows that employee job satisfaction is 0.111 so it is a characteristic variable work can explain employee job satisfaction of 11.1% which is included in the category low while the remaining 88.9% explained by variables other. The *R Square* value of safety culture is 0.204, meaning that job satisfaction can explain this the patient safety culture variable was 20.4% which was included in the category low while the remaining 70.6% explained by variables other.

DISCUSSION

The total sample in this study was 144 health workers at the General Hospital of Muhammadiyah University of Malang. Most of them are nurses and followed by other professions. Most of the health workers have worked in the hospital and in their respective units in the range of 1 to 10 years with working hours of 30-40 hours per week. Health workers in this study mostly work interacting with patients.

Based on the frequency distribution, the dimensions of job satisfaction in health workers at the General Hospital of Muhammadiyah University of Malang with high values are coworkers, opportunities to interact, control and responsibility, and praise and recognition. Meanwhile, the dimensions of job satisfaction that have low value are the dimensions of work-family balance and scheduling. According to Sulistiawan and Aris Armuninggar (2017) work-family conflict is divided into two works to family conflict and family to work conflict. According to Spector (2022) supervisor behavior that supports employees with family responsibilities is also found to have a positive effect on employee job satisfaction. Expatriate nurses in Arabia are less satisfied about work-family balance (Almansour et al., 2020). Being away from family and family support are important factors in Arab expatriate nurses' job satisfaction.

The results of this study indicate that scheduling management is still not good. According to Clark et al (2015) an effective schedule not only provides the necessary level and skill mix of nurses and support staff to ensure optimal care 24 hours a day, but also ensures personnel are not overtired, feel work-life balance is considered and contribute to overall staff morale. Flexible schedule arrangements are necessary to improve employee job satisfaction on the scheduling dimension. Flexible scheduling is done by giving permission for schedule changes or modifications related to unavoidable and urgent needs. The division of schedules is made balanced so that health workers have plenty of time for their families after work activities and have free time to rest.

In the patient safety culture variable, the dimensions with low values are employees and work rates, response to errors, and reporting patient safety events. Those with high frequency distribution values were teamwork, organizational learning and communication about errors. Increased nursing workload may be associated with decreased patient safety and quality of care. Understanding the concepts of turbulence and workload separately is the

best way to describe the various demands of nursing (Browne & Braden, 2020). Workload is one of the factors that hinder nurses' involvement in patient safety. Nurses in administrative roles are more involved in-patient safety. Carthon found patient safety issues can occur when patient information is lost due to high workload. Increasing the number of nursing staff is associated with improved patient safety, but this cannot be done immediately by all institutions due to financial constraints (Carthon et al., 2019).

The results of the value of the dimension of response to errors at the General Hospital of Muhammadiyah University of Malang are the same as research conducted by Ammouri et al (2014) which states that nurses' perceptions of non-punitive errors are still low. This shows that nurses still feel threatened if they report errors. Research conducted by Iriviranty (2014) states that the dimension of response to error is also the lowest dimension in the assessment of patient safety culture at Budi Kemuliaan Hospital.

The dimension of reporting patient safety events in this study received a low score. Dhamanti et al (2020) stated that fear of being punished is one of the obstacles that prevent health workers from reporting patient safety incidents. Research by Salmasi et al (2015) conducted in six countries found a lack of data related to medical error reporting, one of which was in Indonesia. This shows that there are still weaknesses in the reporting system in Indonesia. The results of the literature review study conducted by Habibah and Dhamanti (2020) mention 3 factors that become obstacles in reporting patient safety incidents, namely individual, organizational, and government factors.

Indicators of assessment of job characteristics that support this research are patient and professional interactions. So, it can be concluded that job characteristics have an influence on employee job satisfaction. In this study, it was found that the coefficient of the influence of characteristics on job satisfaction had a negative direction so that if health workers have high interaction with patients, the higher their satisfaction. This is in line with research conducted by Itoh and Andersen (2008) which states that health workers who interact with patients have higher job satisfaction than those who do not interact with patients. With social interaction between individuals influencing each other. Research conducted by Aslam et al (2013) concluded that work behavior, work environment, and social interaction affect job satisfaction and can be strengthened by motivation.

In this study, it was found that the coefficient of the effect of job characteristics on job satisfaction has a negative direction so that it can also be concluded that the satisfaction of doctors is higher than that of nurses, the job satisfaction of nurses is higher than that of midwives, and the job satisfaction of pharmacists is higher than that of other health workers. In line with research by Itoh and Andersen (2008) found that the doctor profession has a higher level of job satisfaction than other professions. Marzuki's research (2018) states that workers have different characteristics so that their job satisfaction is also different.

Indicators of supportive job satisfaction assessment consist of 6 dimensions, namely control and responsibility, interaction opportunities, professional opportunities, extrinsic rewards, coworkers, and praise and recognition. The Outer model evaluation results show that the 6 indicators have a value above 0.70 so it can be concluded that the indicator is valid with the loading factor value. However, of the 6 indicators, the most significant indicators in shaping job satisfaction of health workers are indicators of coworkers, praise and recognition, and opportunities to interact.

The indicators of a supportive patient safety culture consist of 9 indicators including teamwork, employees and work pace, organizational learning - continuous improvement, response to errors, supervisor, manager, or clinical leader support for patient safety, communication about errors, information disclosure, patient safety support, and handover and information exchange. So based on the research results obtained, it is known that the most significant indicators in shaping patient safety culture are organizational learning - continuous improvement, information disclosure, and teamwork.

Based on the results of the Inner model, the T-Significant value is 5.359 which shows that this value is greater than 1.96, which means that job satisfaction has an influence on patient safety culture, the higher the job satisfaction of health workers, the higher the patient safety culture. The results of this study are in line with the results in a study at Qom University of Medical Sciences in 2020 which stated that job satisfaction can have an influence on patient safety culture (Asgarian et al., 2021). This is also in line with the research of Merino Plaza et al (2018) which found that there is a significant influence between employee job satisfaction on patient safety culture. Then, research conducted in Makassar hospitals by Pasinringi et al (2022) also shows that job satisfaction has an influence on patient safety culture.

Increased job satisfaction can come from having supportive, pleasant and harmonious coworkers. Employees can experience a variety of physical and psychological mistreatment. Conditions of mistreatment from coworkers that have an impact on job satisfaction are bullying, incivility, interpersonal conflict, exclusion, and physical violence (Spector, 2022). In a case study in Japan conducted by Itoh and Andersen (2008), two nation dependency factors specific to this country's context emerged, namely respect for seniority and member conflict (Itoh & Andersen, 2008)

The opportunity to get a promotion is given by the company to workers who have the aim of increasing positions in the job can make workers feel satisfied (Anugerah et.all, 2019). According to Marhsall et all (2015) for employees to be motivated is to make employees feel happy with what they do. Human resource managers can use rewards and recognition as a tool to motivate employees with various systems such as for example rewarding salary increases, educational support, and others (Younies & Al-Tawil, 2021).

According to Katz and Kahn (1978), one way to look at employee interactions with work is from a role perspective. There are three aspects of roles that can cause stress and each role stressor is related to job satisfaction, namely role ambiguity, role conflict, and role overload (Spector, 2022; Eatough et al, 2011). Interaction within the company can also have an impact on increasing employee job satisfaction if interactions occur smoothly and do not experience problems. In research conducted by Aslam et al (2013) work behavior, work environment, and social interaction affect job satisfaction and can be strengthened by motivation (Aslam et al., 2013).

CONCLUSION

Based on research that has been conducted on health workers at the General Hospital of Muhammadiyah University of Malang, it can be concluded that: (1) The dimensions of job characteristics in this study consist of profession and interaction with patients. Most of the health workers who work at the General Hospital of Universitas Muhammadiyah Malang work as nurses. Most of the health workers in this study interact with patients. (2) The dimensions of job satisfaction in health workers at the General Hospital of Universitas Muhammadiyah Malang with high frequency distribution values are coworkers, opportunities to interact, control and responsibility, and praise and recognition. Meanwhile, the dimensions of job satisfaction whose frequency distribution is low are the dimensions of

work-family balance and scheduling. (3) Dimensions of patient safety culture in health workers at the General Hospital of Muhammadiyah University of Malang whose frequency distribution values are high are teamwork, organizational learning and communication about errors. While the dimensions of patient safety culture whose frequency distribution value is low are the dimensions of employees and work pace, response to errors, and incident reporting. (4) Job characteristics have an influence on employee job satisfaction. The higher the interaction with patients, the higher the job satisfaction of health workers at the General Hospital of Muhammadiyah University of Malang. Doctors have higher job satisfaction than nurses and nurses have higher satisfaction than midwives, pharmacists and other health workers. If interaction with patients is high, the higher the job satisfaction of health workers. (5) Job satisfaction has an influence on patient safety culture, the higher the job satisfaction of health workers, the higher the patient safety culture at the General Hospital of Muhammadiyah University of Malang.

ACKNOWLEDGMENT

The authors would like to acknowledge the following institutions for their support and resources in conducting this research.

CONFLICT OF INTEREST

The authors confirm the absence of any conflicts of interest.

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