

Safety Culture Assessment: a Tool for Improving Patient Safety in Hospital

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INDEXING

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ABSTRACT

The patient safety culture at the 'X' Hospital Palembang is still not good enough as can be seen from the number of reported patient safety incidents from KPRS team. Meanwhile, this C-type hospital is obligated to implement patient safety culture in improving health service quality. This research uses quantitative method with cross-sectional approach. The research samples are taken using Slovin's formula from medic and paramedic, medical support, and management and sampling with proportional stratified random sampling. Measurement of patient safety culture uses MaPSaF (Mancheste Patient Safety Framework) questionnaire which has been published by NPSA (National Patient Safety Agency) in 2006 and has been tested for its validity and reliability by previous research. The questionnaire consists of 10 dimensions with 24 aspects of the question. The implementation of patient safety culture at the 'X' Hospital Palembang has been in accordance with MaPSaF assessment of 70% at proactive level, 20% at generative level, and also 10% at bureaucratic level. Overall, the patient safety culture is dominant at the proactive level, yet improvement is still needed to the generative level by raising awareness, good cooperation, and responsibility for the importance of patient safety culture.

Kata Kunci:

Keamanan Pasien;
Budaya Keselamatan Pasien;
Alat Budaya Keselamatan Pasien;
Mapsaf

Budaya keselamatan pasien di Rumah Sakit 'X' Palembang masih belum cukup baik, hal ini dapat dilihat dari banyaknya pelaporan insiden keselamatan pasien dari tim KPRS. Padahal, rumah sakit tipe C ini wajib menerapkan budaya keselamatan pasien dalam meningkatkan kualitas pelayanan kesehatan. Penelitian ini menggunakan metode kuantitatif dengan pendekatan cross-sectional. Sampel penelitian menggunakan rumus Slovin yang diambil dari tenaga medis dan paramedis, dukungan medis, dan manajemen dan pengambilan sampel dengan proportional stratified random sampling. Pengukuran budaya keselamatan pasien MaPSaF (Mancheste Patient Safety Framework) menggunakan National Patient Safety Agency (NPSA) pada tahun 2006 dan telah diuji validitas dan reliabilitas dengan penelitian sebelumnya. Kuesioner terdiri dari 10 dimensi dengan 24 aspek pertanyaan. Implementasi Rumah Sakit 'X' Palembang sesuai dengan penilaian MaPSaF sebesar 70% pada tingkat proaktif, 20% pada tingkat generatif, dan juga 10% pada tingkat birokrasi. Secara keseluruhan, budaya keselamatan pasien dominan pada tingkat proaktif, tetapi masih perlu perbaikan ke tingkat generatif dengan meningkatkan kesadaran, kerjasama yang baik, dan tanggung jawab untuk pentingnya budaya keselamatan pasien.

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INTRODUCTION

The safety culture is the obligation, perceptions, beliefs, attitudes and abilities and patterns of individuals and groups based on organizational commitment with patient care during hospitalization. The application of patient safety culture aims to detect errors that will occur or has occurred which can raise awareness and to make a report in case of incidents¹. Broadly speaking, NPSA (2004) mentions that

the safety culture of patients have 4 components: open, fair, infomative and learning from mistakes².

The occurrence of disputes in hospitals can adversely affect both the hospitals and the patients when they are on medication, increase anxiety and even lead to death, blaming behavior, conflicts between officers and patient, law, blow-ups, and reduce the image and quality of illness services. This condition must be anticipated to ensure that the patients receive ongoing care, and the organization is running.³

In 2004 the World Health Organization (WHO) also collects data on research results of adverse events from various hospitals in the United States, Australia, New Zealand, Canada and Europe. From these research results, it is found that adverse events occur at 3.2-16.6%. In addition, the mortality rate in hospitalized patients across America due to adverse events amounting to 33.6 millions per year which ranges from 44,000 to 98,000 per year. The number of deaths is higher than the death rate due to accidents, breast cancer and AIDS. From these data, it becomes a reference for research and development of patient safety systems in various countries⁴.

According to a report from the Hospital Patient Safety Committee in January 2010 to April 2011 in some provinces in Indonesia it is reported that there have been 137 incidents. East Java Province ranks the highest at 27% among other provinces. Out of these 137 incidents, 55.47% are unexpected events, 40.15% are nearly injured and 4.38% respectively. The data also include the incidents which cause deaths at 8.76%, permanent injuries 2.19%, medium injuries at 21.17%, and minor injuries at 19.71%(5).

The results of preliminary study indicate that 'X' Hospital Palembang is one of the state-owned health services in Palembang Municipality which in 2017 has passed the accreditation and is in the form of type-C public hospital. This is a reference in the effort to improve patient safety for better service quality. Preparing ahead of previous accreditation, 'X' Hospital Palembang has prepared several patient safety efforts, such as preparation of patient safety SOP guideline audit based on 6 KARS safety objectives and all employees have participated in patient safety training. Nevertheless, patient safety incidents still occur like the table below.

Table 1. Incident Report of Patient Safety (IKP) July-October 2017

No	Description incidents	Number	Months
1	Near miss	3	July 4, 2017 July 10, 2017 July, 14 2017
2	Near miss	3	August, 2017
3	Near miss	3	September, 2017
4	Adverse event	1	October, 2017
	Near miss		October, 2017
		1	

Source: KPRS Team 'X' Hospital Palembang

The situation occurring in 'X' Hospital Palembang illustrates that the established standard has not been fulfilled and the patient safety culture still needs special attention in the implementation of the health program so as

not to cause potential harm. Therefore, the purpose of this study is to assess the patient safety culture at the 'X' Hospital Palembang.

RESEARCH METHOD

This is quantitative research using cross-sectional approach that evaluate the assessment of patient safety culture at 'X' hospital Palembang. Assessment by quantitative method is a survey using standard questionnaires and the results can take the form of percentage data describing a symptom⁶.

This research is conducted at 'X' Hospital Palembang having address at Kompleks Pertamina UP III Plaju, No. 1, Komperta Palembang 30628. The subjects in this study are hospital management, medical and paramedical staff (doctors, nurses, midwives) and medical supporters (laboratory, physiotherapy, hemodialysis, radiology, nutrition, pharmacy and medical record). Meanwhile, the object of this research is the assessment of patient safety culture in the health service of 'X' Hospital Palembang.

Samples in this study are management, medical staff and paramedics, and medical support using Slovin's formula. The sample formula in this study is⁷:

$$n = \frac{N}{1+Ne^2}$$

n = number of sample members

N = number of members of the population

e = error rate (typically using 1% or 0.01, 5% or 0.05, and 10% or 0.1 that the researcher can select)

The population in this study is 142 people consisting of the management of 5 people, medical and paramedical personnel who were conducted by 111 people and 26 medical support. Then, the sample size is as follows:

$$n = \frac{N}{1+Ne^2}$$

$$n = \frac{142}{1 + 142 \times 0,1^2}$$

$$= 58.76 \text{ rounded up to } 59$$

The sampling technique used is Proportional Stratified Random Sampling. This is a sampling method for a population that has an inhomogeneous element and proportional strata of each element of the sample and this sampling is also done randomly⁸. The calculation of the population number using the formula *n* = population class / total population x the number of samples determined. Medical and paramedical staff:

$$111/142 \times 59 = 46.11 \text{ (rounded to } 46 \text{ respondents)}$$

Medical support staff:

$26/142 \times 59 = 10.80$ (rounded to 11 respondents)

Management:

$5/142 \times 59 = 2.07$ (rounded to 2 respondents).

Research Instruments

The research instrument is a questionnaire consisting of 10 dimensions of MaPSaF (Manchester Patient Safety Framework) in which there are also 24 aspects of the question and it has been tested for its validity and reliability by previous research from Arum Astika Sari (2017) using a questionnaire test⁹. It is said that the questionnaire is valid if a question from the questionnaire can reveal something measured by the researcher¹⁰. From the reliability test, the questionnaire is said to be reliable if the instrument can be trusted as a data collection tool because the items from the instrument are good and valid¹¹.

The assessment of questionnaires uses Likert scale (1-5) to determine maturity level, where 1 is pathological, 2 is reactive, 3 is bureaucratic, 4 is proactive, and 5 is generative. The data obtained from questionnaires will then be analyzed using descriptive approach to determine the relationship between the existing data with the theory used to obtain a clear result about the research problem.

RESULTS AND DISCUSSION

Characteristics of Respondents

Based on table 1.2, it can be seen that by gender most respondents are women (51 people or 36%), and aged between 20-29 years old (28 people or 47%). The working period of respondents is mostly >5 years, (27 people or 46%) with their last education being mostly D3 (46 people or 78%). Meanwhile the majority of respondents have received dissemination on patient safety (57 people or 97%).

Table 2. Characteristics of respondents

GENDER	AMOUNT (n)per	Percentage (%)
Man	8	14%
Woman	51	86%
Age	Amount (n)	Percentage (%)
20-29	28	47%
30-39	25	42%
40-49	6	10%
Years of Service	Amount (n)	Percentage (%)
<2 year	18	31%
2-5 year	14	24%
>5 year	27	46%
Last Education	Amount (n)	Percentage (%)
D3	46	78%
S1	13	22%
Patient safety socialization	Amount (n)	Percentage (%)
Done	57	97%
Not Yet	2	3%
Work Unit	Amount (n)	Percentage (%)
Medic and Paramedic	46	78%
Medical Support	11	19%
Management	2	3%

Patient Safety Culture Based on Each Dimension of MaPSaF

- 1) Dimension 1 (overall commitment to continuous improvement)

Based on Figure 1, it can be said that the commitment to improvement (1A) is mostly at proactive level (33 respondents or 56%) i.e. the hospital is passionate and enthusiastic to continue to make improvements.

A study conducted by Nurlaily (2017) shows a strong relationship between organizational commitment and prevention of unexpected events with p value of 0.000 ($p < \alpha$ (0.05) and a correlation value of $r = 0.823$. An adverse event prevention behavior is contributed by organizational commitment by 68.3%¹².

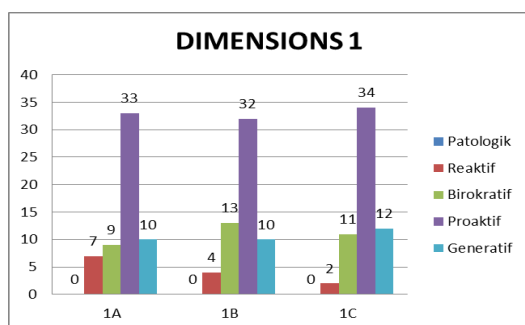


Figure 1. Distribution of Overall Commitment Dimension to Continuous Improvement

The distribution of examination/audit aspect (1B) is mostly at proactive level (32 respondents or 54%). This means the hospital wants to give the best quality. Doctors are involved in the audit process to keep improving. Medical evaluation is an internal and management audit that aims to improve quality and medical services and cannot be used as a tool to punish a person or group. Internal audit findings and applicable standards are evaluated by management activities in the form of meetings and involving experts to solve problems¹³.

While in SOP and policy aspect (1C), most of them are at proactive level (34 respondents or 58%). SOP, protocol and policy are discussed and implemented as the basis of service. Patients and families are invited to be involved in making service decisions.

2) Dimension 2 (priority given for patient safety)

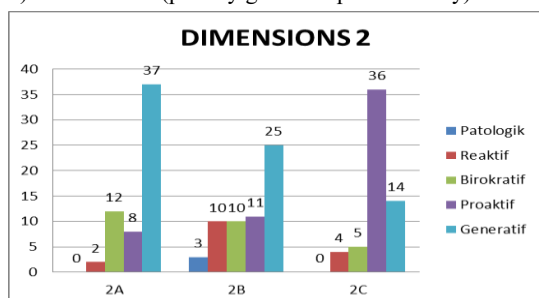


Figure 2. Distribution of dimension of the priority given for patient safety

Based on figure 2, it can be seen that the priority aspect given to patient safety (2A) is mostly at the

generative level (37 respondents or 63%). i.e. patient safety is the main priority in the hospital. The distribution of risk management system aspects (2B) is mostly at the generative level (25 respondents or 42%), i.e. all staff are consistent in implementing risk management system and continuous quality improvement. Meanwhile on the implementation aspect of patient's safety (2C), mostly are at proactive level (36 respondents or 61%), meaning that all officers are involved in patient safety.

This is in accordance with the Ministerial Regulation of Health of the Republic of Indonesia Year 2008 which states that there are several important issues related to safety in the hospital such as patient safety, health personnel safety, building safety and hospital equipment, and environmental safety which affect environmental pollution of the hospital. However, it must be recognized that patients are important to encourage the institutional activities of the hospital. Therefore patient safety is a top priority and should be implemented as it relates to the quality and image of a hospital¹⁴.

3) Dimension 3 (individual system errors and responsibilities)

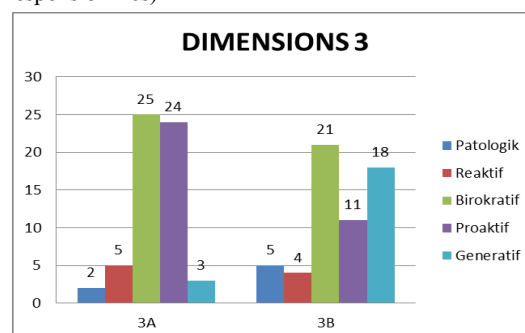


Figure 3. Distribution of Dimension of Individual System and Individual Error

Based on Figure 3, it can be seen that the cause of incident (3A) has been mostly at bureaucratic level (25 respondents or 42%), i.e. incidents are due to system errors, not just individuals. This shows that the occurrence of an incident is not only caused by individuals but also due to related system errors such as the miscommunication between health workers that causes an incident. Meanwhile, the distribution of aspects of patient safety culture (3B) is mostly at bureaucratic level (21 respondents or 36%), i.e. it is open and fair culture, yet officers have not felt it.

4) Dimension 4 (incident recording and best practices)

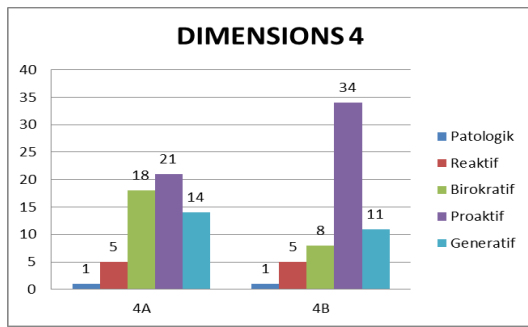


Figure 4. Distribution of Dimension of Incident Recording and Best Practices

Based on Figure 4, it can be seen that the aspects of reporting system and its usefulness (4A) are mostly already at proactive level (21 respondents or 36%), i.e. the reporting process is easy to do and is friendly. Meanwhile the distribution of what aspect that officers feel when reporting incidents (4B) is mostly at proactive level (34 respondents or 58%). This means staff feel safe to report incident as they can learn from the problem.

However, other factors may affect the low incidence reporting as found by the research conducted by Andrini T in 2015 at pharmacy installations of RSUD Ngudi Waluyo Wlingi to pharmacy staff and management personnel related to the results of the analysis. This study finds that pharmacy staff lacks knowledge about what to report and how to report¹⁵.

5) Dimension 5 (incident evaluation and best practices)

Based on figure 5, it can be seen that the aspect of data analysis (5A) is mostly already at proactive level (33 respondents or 56%), i.e. doing incident analysis with root cause analysis for learning purpose. The distribution of investigative focus aspect (5B) is largely at proactive level (24 respondents or 41%) i.e. patient safety incidents and near miss focus is improving, yet it also involve the patient. Meanwhile the distribution of the investigation aspect (5C) is mostly at bureaucratic level (24 respondents or 41%), i.e. the result of the investigation is used for the discussion of procedure and implementation.

A study in 2017 entitled "Application of Root Cause Analysis Technique in Investigating the Causes of a Fatal Sentinel Event: A Case Report" states that Root Cause Analysis is a risk management model for retrospective analysis of the root causes of system errors and weaknesses in a systematic process.

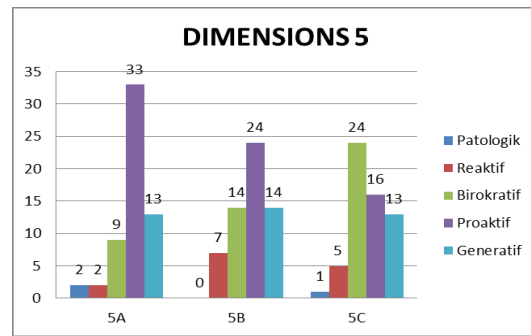


Figure 5. Distribution of Dimension of Incident Evaluation and Best Practices

The aim is to analyze the root causes of sentinel events that caused death in one hospital in Isfahan in 2015. This study concludes that the benefits of Root Cause analysis can be used to prevent similar errors from happening, eliminate organizational defects, improve processes within an organization, and improve patient safety¹⁶.

6) Dimension 6 (learning and effective change)

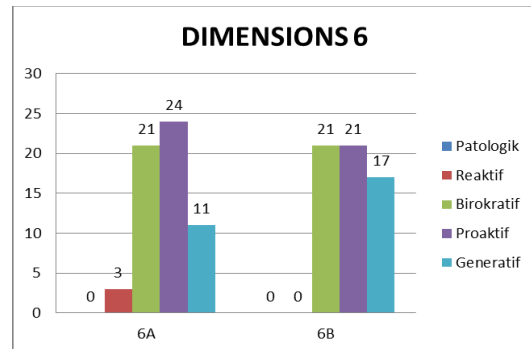


Figure 6. Distribution of Dimension of Learning and Effective Changes

Based on Figure 6, it can be seen that the learning aspect of safety incidents (6A) has been largely at proactive level (24 respondents or 41%), i.e. there is a culture of learning from incidents and sharing the results to make changes. Meanwhile the distribution of who is responsible for deciding post-incident change (6B) is 21 respondents (36%) at bureaucratic level, i.e. patient safety committee and manager decide to change, yet it involve less officers and at proactive level in that the officers actively participate in deciding the change after patient safety incidents and committed to doing so.

This is consistent with the specific purpose of reporting patient's safety incidents for the creation of a patient incident safety reporting system, figuring out the

causes to the root of the problem concerning patient safety incidents, as well as learning in improving care in order to prevent similar incidents from occurring so that the quality and patient care increase in the hospital¹⁷.

Dimension 7 (communication on patient safety issues)

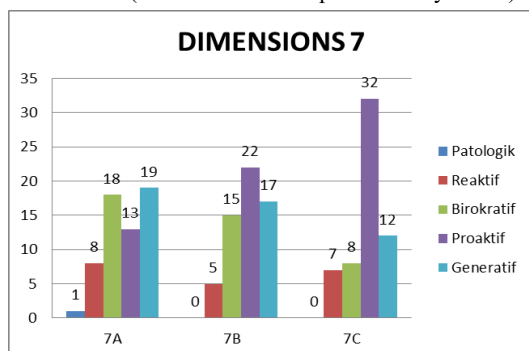


Figure 7. Distribution of Dimension of Communication About Patient Safety Issues

Based on Figure 7, it can be seen that from the aspect of communication about patient safety (7A) most of them are at generative level (19 respondents or 32%), i.e. there is transparency of the hospital, including involving the patient in developing risk management policy. The distribution of information sharing aspect (7B) is mostly at proactive level (22 respondents or 37%), i.e. information about patient safety distributed at the briefing session has been scheduled by the officer. Meanwhile, from the aspect of communication about patients safety to patient (7C), they are mostly at proactive level (32 respondents or 54%), i.e. communication about patients safety to patient and family or hospital visitor is done effectively.

'X' Hospital Palembang always tries to build effective communication both internally and with related parties in this case patients and their family in building improvement of patient safety culture. The hospital is trying to convey information about the conditions leading to the risk of errors and motivating patients relating to the patients safety¹⁸.

Dimension 8 (personnel management and safety issues) Based on Figure 8, it can be seen that from the aspect of whether the officer felt supported or not, most of them are at generative level (18 respondents or 31%), i.e. personnel management does a reflection and discussion about officer competence, meeting, health officers receive attention.

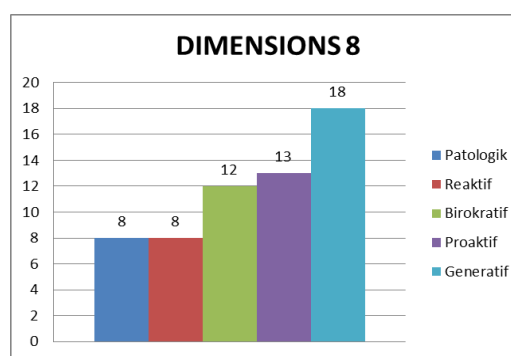


Figure 8. Distribution of Dimension of Personnel Management and Safety Issues

This confirms the research conducted by Saraswati (2014) which finds that there is a significant correlation between nursing service supervision and implementation patient safety culture by executing nurses¹⁹. Another study has also shown that mentoring programs have 20% effect on the application of patient safety culture and those who do not get mentoring have a risk of decreasing 2.5 times larger¹⁸.

9) Dimension 9 (staff education and training)

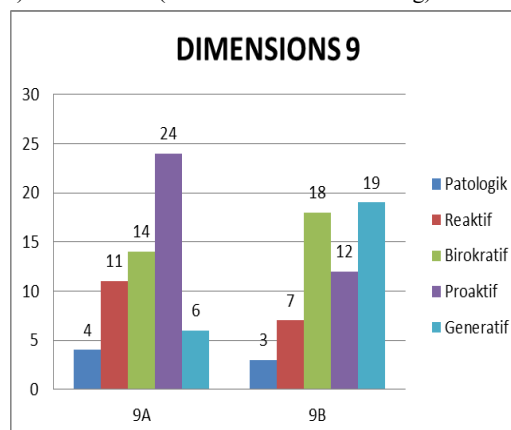


Figure 9. Distribution of Dimension of Staff Education and Training

From figure 9, it can be seen that from the aspect of training requirement (9A) most of them are at proactive level (24 respondents or 41%), i.e. efforts have been made to identify what training the officers need and in line with the hospital's needs. Meanwhile, the aspect of research objective (9B) is mostly at the generative level (19 respondents or 32%), i.e. training is seen as a way to support staff in order to develop their potential.

Increased knowledge is the impact expected by the organization from a training on quality and patient safety,

training as a means of enhancing new knowledge and improving individual and system performance²⁰.

10) Dimension 10 (teamwork)

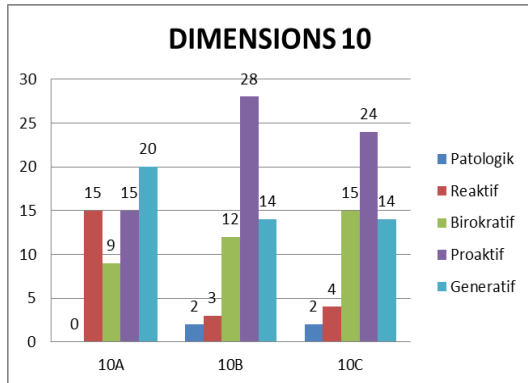


Figure 10 Distribution of Dimension of Team Cooperation

Based on Figure 10, it can be seen that from the aspect of team structure (10A) they are mostly at the generative level (20 respondents or 34%), i.e. the team is flexible, the contribution in the other field is appreciated. The distribution of what aspect of being a team member (10B) is largely at proactive level (28 respondents or 47%), i.e. collaboration among team members works well. Meanwhile, from the aspect of information flow and sharing (10C), most of them are at proactive level (24 respondents or 41%), i.e. open-minded team to share information including outsiders.

Teamwork is an interaction between health professionals working interdependently in performing care in patients, aiming at providing care and sharing information in joint decision making²¹.

The components of effective teamwork consist of open communication, clear environment, clear objectives, team members have clear roles and duties, mutual respect, responsibility, active participation of every member, understanding of the procedures in decision-making, evaluation mechanisms and results, compliance with regulations and so on²².

The study entitled "Teams, tribes and patient safety: Overcoming barriers to effective teamwork in healthcare" explains that improved teamwork in health care can significantly improve patient safety as measured by efficient care, rates of complications and death rate²³.

Overall Patient Safety Culture Based on MaPSaF Dimensions

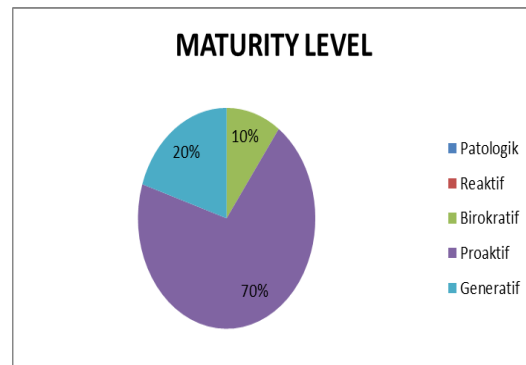


Figure 11. Percentage of Overall Dimensions of Patient Safety Culture of 'X' Hospital Palembang

Based on the results of Figure 11, the patient safety culture of 'X' Hospital Palembang is predominantly at proactive level (70%), i.e. the patient safety culture system at 'X' Hospital Palembang is comprehensive and has been implemented as indicated by the findings. 2 dimensions are at generative level (20%) which show that the safety culture of 'X' Hospital Palembang are already integrated and well-maintained, and effectiveness is evaluated on regular basis, and always willing to learn from experience and taking action to improve the situation. Meanwhile, one dimension is at the bureaucratic level (10%), hence, it can be said that the implementation of the patient safety culture system at 'X' Hospital Palembang is well organized, but still limited in situations when the incident occurred.

CONCLUSION

7 dimensions of the MaPSaF patient safety culture are at the proactive level, i.e. the overall commitment to continuous improvement, incident and best practices, incident and best practices evaluation, effective learning and change, communication on patient safety issues, staff education and training, team. Two MaPSaF dimensions of patient safety culture are at generative level, i.e. priority given to patient safety, and personnel management and safety issues. Only one MaPSaF dimension of patient safety culture is at the bureaucratic level, that is the system error and individual responsibility. Overall the results of the study using the MaPSaF 10 dimensional questionnaire predominantly show that 70% are at proactive level where 'X' Hospital Palembang has been comprehensive to the patient safety culture and has implemented it as indicated by the findings. The patient safety culture program is already running, but it is still ineffective and some dimensions of patient safety culture still have rooms for improvement.

Suggestion For 'X' Hospital Palembang is the hospital ought to increase their full support to the needs of the officers, namely: increased knowledge, training, and regular socialization of patient safety. KPRS and management teams ought to further improve incident and best practice evaluations in maximizing both simple analysis and evaluation stages up to the Root Cause Analysis (RCA) even though each has other tasks and responsibilities. Each work unit should prioritize the patient safety culture with increased awareness and responsibility to report incidents that occur with no fear of reporting, as well as further enhance their cooperation in either 1 unit or between units to minimize errors. The organization ought to maintain an existing patient safety system by conducting supervision and monitoring, as well as continue patient safety culture surveys to determine the conditions that have been established and as a reference in the development of patient safety culture to a better level.

For the next researcher, It is suggested for further researchers to develop this research more deeply qualitatively with interviews on hospital units in both medical and paramedical sections, medical or management support or also inquiry with Focus Group Discussions (FGD) to all sections related to patient safety in order to obtain extensive results about the occurring circumstances. Limitations of the study is Some limitations of this study include: the absence of qualitative data with KPRS team interviews or other parts of the hospital, the absence of directly observation on the implementation of patient safety culture in the hospital, and the lack of time for researcher which prevents the researcher from developing this research more widely.

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