Analysis of Patient Safety Culture in Educational Dental Hospitals

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ABSTRACT

Background*: Patient safety culture is critical to the implementation of patient safety. An assessment of patient safety culture is required before beginning the process of developing a patient safety program. The findings are used to identify and evaluate potential units for development, as well as to inform policy decisions. The purpose of this study is to investigate the patient safety culture at Semarang's Educational Dental Hospital.*
Method*: This study used a combination of analytic observation and cross-sectional design. The study's participants were health workers from Semarang Educational Dental Hospital. Random sampling was used to collect samples from up to 131 people in RSGMP X and 166 people in RSGMP Y. The information was gathered by distributing questionnaires based on the Agency for Healthcare Research and Quality (AHRQ) version 2.0.*
Result*: The values of patient safety culture in RSGMP X and Y are the following: Error communication rates were 67.5% and 86.8%, respectively. Communication openness ranges between 74% and 76.7%. The handoff and information exchange rates are 73.3% and 85.1%, respectively. Patient safety is supported by hospital management at 80.5% and 81%, respectively. Organizational learning and continuous improvement have rates of 84.4% and 90.8%, respectively. Patient safety incidents were reported at rates of 59.5% and 63.1%, respectively. Responses to errors were 57.7% and 68.8%, respectively. The staffing and work rate are 72.9% and 71.5%, respectively. Supervisor and manager support for patient safety was 84.2% and 84.8%, respectively. Teamwork earned 84.4% and 88.5%, respectively.*
Conclusion: *RSGMP X has four dimensions of strong patient safety culture and six dimensions of moderate culture, while RSGMP Y has seven dimensions of strong patient safety culture and three dimensions of moderate culture.*

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INTRODUCTION

A patient safety incident is defined as any unintentional event or condition that causes or threatens to cause preventable harm to a patient.[1] Adverse events in hospitals are now widely acknowledged as a major issue, killing more people each year than breast cancer or AIDS.[2] Patient safety incidents will harm all parties involved, including the hospital, its staff, and the patients who use its services.[1]

Article 43 of UURI Number 44 of 2009 concerning Hospitals states that hospitals must implement patient safety standards.[3] Patient safety is a top priority in health and nursing care. The implementation of patient safety is the most important aspect of quality management because it is linked to quality issues and the hospital's image.[3,4]

Building a positive patient safety culture is one way to improve the quality of patient safety. In hospitals, safety culture refers to the obligations, perceptions, beliefs, attitudes, abilities, and patterns of individuals and groups based on the organization's commitment to patient care. Implementing a patient safety culture aims to detect errors that will or have occurred in order to raise awareness and report incidents.[5] A patient safety culture must be implemented to prevent errors in patient care.[6]

Building a patient safety culture in hospitals is the obligation and responsibility of all hospital staff, particularly medical personnel who come into direct contact with patients. Dentists and dental therapists are at high risk of cross-infection and may be the first point of contact due to their close interaction with patients who are potential sources of infection. All parties must follow standard precautions, particularly the WHO's universal precautions. This demonstrates the significance of patient safety culture factors, particularly for medical personnel.[6]

According to the Agency for Healthcare Research and Quality (AHRQ), patient safety culture can be measured in terms of the perspective of hospital staff, which consists of several dimensions such as: communication about errors, communication openness, handoff and information exchange, hospital management support for patient safety, organizational learning-continuous improvement, reporting of patient safety events, response to errors, staffing and work pace, supervisor, manager, or clinical leaders support for patient safety and teamwork.[7] Measuring safety culture is the first step in creating a patient safety program. The findings can be used to identify areas/units for improvement, evaluate programs, compare internal and external data, and inform policymaking.[8]

Over 80% of Indonesia's dental hospitals are educational. Patient safety implementation in Indonesian educational hospitals is still unsatisfactory. Several patient demands have been made to the hospital as a result of the lack of safety measures, which are closely related to patient safety culture.[9] The goal of this research was to assess the level of patient safety culture at the Educational Dental Hospital in Semarang City.

RESEARCH METHOD

The study employed analytic observational research with a cross-sectional design. This study was conducted at two educational dental hospitals in Semarang City, RSGMP X and RSGMP Y. This study was conducted from September to October 2023. The participants in this study were all health workers, including specialist dentists, general dentists, dental therapists, and young dentists working in Semarang's educational dental hospitals. The sampling technique was random sampling, with the inclusion and exclusion criteria considered, resulting in 131 samples for RSGMP X and 166 samples for RSGMP Y. This research data was

collected by distributing questionnaires based on the Agency for Healthcare Research and Quality (AHRQ) version 2.0. The research data were processed and analyzed using computerized statistical methods. Univariate and bivariate analyses were used to analyse the data. A univariate analysis was performed to determine the frequency distribution of patient safety culture based on respondents' positive responses to each dimension of patient safety. The Mann-Whitney test was used in bivariate analysis to compare patient safety cultures in RSGMP X and RSGMP Y. The Health Research Ethics Commission at the Faculty of Medicine, Diponegoro University, Semarang, has approved this study. On August 4, 2023, permission in the form of an ethical release letter was granted under the reference number 394/EC/KEPK/FK-UNDIP/VIII/2023.

RESULTS

The table below shows the results of AHRQ's research on the level of patient safety culture in each dimension. Table 1: Positive Response Data for Each Dimension of Patient Safety Culture Based on AHRQ **Q*R+ number of positive responses, R- number of negative responses, and %R+ positive responses percentage** eBased on the study's results, it is known that the culture of patient safety in RSGMP X on the dimension of communication about errors is classified as a moderate culture (67.5%), the dimension of communication openness is classified as a moderate culture (74%), the dimension of handoff and information exchange is classified as a moderate culture (73.3%), the dimension of hospital management support for patient safety is classified as a strong culture (80.5%), the The patient safety culture in RSGMP Y is strong in the dimensions of error communication (86.8%), communication openness (76.7%), handoff and information exchange (85.1%), and hospital management support for patient safety (81%). The dimension of continuous improvement organizational learning is classified as a strong culture (90.8%), the dimension of reporting patient safety events is classified as a moderate culture (63.1%), the dimension of response to errors is classified as a moderate culture (68.8%), the dimension of staffing and work pace is classified as a moderate culture (72.9%), the dimension of supervisor, manager, or clinical leader support for patient safety is classified as a strong .The table below shows a bivariate analysis of the differences in patient safety culture between RSGMP X and RSGMP Y. .Table 2: Comparison of Patient Safety Culture Dimensions in RSGMP X and RSGMP Y Using the Mann-Whitney Test **t**

Patient Safety Culture Dimensions	RSGM	N	p-value
Communication about errors	RSGMP X	131	0,000*
	RSGMP Y	166	
Communication openness	RSGMP X	131	0,001*
	RSGMP Y	166	
Handoff and information exchange	RSGMP X	131	0,000*
	RSGMP Y	166	
Hospital management support for patient safety	RSGMP X	131	0,692
	RSGMP Y	166	
Organizational learning-continuous improvement	RSGMP X	131	0,095
	RSGMP Y	166	
Reporting patient safety events	RSGMP X	131	0,291
	RSGMP Y	166	

Response to errors	RSGMP X	131	0,004*
	RSGMP Y	166	
Staffing and work pace	RSGMP X	131	0,852
	RSGMP Y	166	
Supervisor, manager or clinical leader support for patient safety	RSGMP X	131	0,354
	RSGMP Y	166	
Teamwork	RSGMP X	131	0,307
	RSGMP Y	166	

* Significance difference (p < 0,05)

DISCUSSION

1. Respondents' Background

The participants in this study were specialized dentists, general dentists, dental therapists, and early-career dentists. 75% of the respondents in RSGMP X had an interval of service ranging from one to five years, while 25% had a term of service of less than 1 year. This opposed to responders at RSGMP Y, where the majority had less than one year of service (64%), with some having 1 - 5 years (31%), 6 - 10 years (4%), and more than 11 years (1%). The majority of respondents worked fewer than 30 hours per week at RSGMP X, whereas others spent 30-40 hours per week at RSGMP Y. In general, variations in each aspect of patient safety culture between RSGMP X and RSGMP Y can be influenced by age, work experience, and managerial position.[10] In addition, the amount of working hours each week can impact patient safety.[11]

2. Overview of the Culture of Patient Safety Aspects of Error Communication

Based on the study's results, patient safety culture in the dimension of error communication in RSGMP X is classified as moderate (67.5%). Meanwhile, RSGMP Y exhibits a solid culture (86.8%). In this dimension, RSGMP X and RSGMP Y differ significantly (p-value = 0.000). This disparity may be related to the fact that more RSGMP X respondents frequently communicate about errors and debate strategies to avoid them from occurring again in their work units, while the majority of RSGMP Y respondents regularly do so. This result is different from previous research by Addukha (2020) conducted at RSGM Unimus, which shows that the average positive response to the same statement in this dimension is strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that the dimension of communication about errors at RSIGMP SA has a strong culture.[9] Communication of patient safety issues can improve the overall quality of patient care and lower the likelihood of recurrence. All healthcare organizations and healthcare personnel must possess a Crisis Communication Plan to effectively relay information regarding patient safety incidents. As soon as an incident occurs, the plan should be put into action and used as a guide for sharing information.[12]

3. Introduction to Patient Safety Culture in the Dimension of Communication Openness

The study's findings indicate that the RSGMP X patient safety culture has been classified as a moderate culture (74%), concerning open communication. Meanwhile, RSGMP Y has a significant culture (76.7%). RSGMP X and RSGMP Y differ significantly in this dimension (p-value = 0.001). The difference may be attributable to the fact that RSGMP X continues to lack the courage to reprimand individuals who commit errors or imperil patient safety, in contrast to RSGMP Y. According to the findings of the research, the proportion of participants in RSGMP X who consistently or frequently issue reprimands when actions pose

a risk to patients is nearly identical. Conversely, the majority of participants in RSGMP Y consistently issue reprimands when actions pose a risk to patients. This result is different from previous research by Addukha (2020) conducted at RSGM Unimus, which shows that the average positive response to the same statement in this dimension is strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that dimension of communication openness at RSIGMP SA has a strong culture.[9] Hoffman (2022) demonstrates that when something goes awry, the behavior of speaking up and remaining silent is prevalent and can occur simultaneously in the same individual.[13] According to a study conducted by Hartawan (2020) at Bantaeng Hospital, the implementation of hospital policies regarding staff can facilitate the development of an environment that values and encourages transparent communication.[14] Health professionals may be reluctant to speak up for a variety of reasons, such as fear of reprisals, criticism, negative reactions, or appearing inexperienced.[15]

4. Overview of Patient Safety Culture in the Handoff and Information Exchange Dimension

The results of the study indicate that the patient safety culture in RSGMP Y is characterized as strong (85.1%), while in RSGMP X, is categorized as moderate (73.3%) in the handoff and information exchange dimension. RSGMP X and RSGMP Y differ significantly in this dimension (p-value = 0.000). The disparity in question could potentially be attributed to the increased frequency with which critical patient data is overlooked during shift changes and transfers to alternative units in RSGMP X as opposed to RSGMP Y. This result is different from previous research by Addukha (2020) conducted at RSGM Unimus, which shows that the average positive response to the same statement in this dimension is strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that the dimensions of handoff and information exchange at RSIGMP SA are strongly cultured.[2] Establishing a positive patient safety culture and meeting patient safety indicators are both made possible by effective communication (16,17). SBAR (Situation, Background, Assessment, Recommendation) is an effective systematic communication framework that is recommended by JCI (Joint Commission International) for ensuring successful communication during patient transition between shifts.[16]

5. Overview of the Culture of Patient Safety Aspect of Support for Patient Safety by Hospital Administration

Hospital management support for patient safety in RSGMP X and RSGMP Y is categorized as a strong culture by 80.5% and 81.0%, respectively, according to the findings of the study. There are no significant distinctions between RSGMP X and RSGMP Y in this dimension (p-value = 0.692). Sufficient resources are allocated to support patient safety, as both RSGMP X and RSGMP Y administrations affirm that patient safety is a paramount concern. Following this, RSGMP X includes "Organising holistic, quality, and patient safety-oriented oral and dental health services" as one of its missions. Furthermore, both RSGMP X and RSGMP Y environments feature patient safety posters.[17] Likewise, previous research by Addukha (2020) conducted at RSGM Unimus showed that the average positive response to the same statement in this dimension was strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that the dimension of hospital management support for patient safety at RSIGMP SA has a strong culture.[9] The success of patient safety implementation is highly dependent on the support of management.[18] Yuniati (2022) demonstrates that an increase in perceptions of organizational support has an effect on contextual performance in hospitals, thereby decreasing the likelihood of patient safety incidents.[19]

6. A Synopsis of the Aspects of Patient Safety Culture Affecting Continuous Improvement in Organizational Learning

The study's findings indicated that the organizational learning dimension of continuous improvement at RSGMP X and RSGM Y categorized the patient safety culture as strong (84.4% and 90.8%, respectively). The differences between RSGMP X and RSGMP Y in this dimension are not statistically significant (p-value = 0.095). Unit administrators are responsible for conducting evaluations of the patient safety program in each unit at RSGMP X and RSGMP Y. Likewise, previous research by Addukha (2020) conducted at RSGM Unimus showed that the average positive response to the same statement in this dimension was strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that the organizational learning dimension of continuous improvement at RSIGMP SA has a strong culture.[9] Patient safety issues were effectively prevented from recurring, as reported by the majority of respondents at both hospitals. Organizational routine modifications across various groups, professions, and hierarchical structures are necessary for organizational learning to occur at the systemic level and improve patient safety. In the context of patient safety, organizational learning must be supplemented with individual learning. This can be accomplished through collaborative endeavors, system-based work, or through observation of others.[20]

7. Patient Safety Culture: An Examination of the Reporting of Patient Safety Events

The study's findings indicate that the patient safety culture is categorized as moderate in terms of the reporting of patient safety events according to RSGMP X and RSGM Y, with respective percentages of 59.5% and 63.1%. There is no significant differences are observed between RSGMP X and RSGMP Y in this dimension (p-value = 0.291). The research findings indicate that there is still a deficiency in the reporting of KNC (near miss) and KTC by respondents for RSGMP X and RSGMP Y. This result is different from previous research by Addukha (2020) conducted at RSGM Unimus, which showed that the average positive response to the same statement in this dimension was strong culture.[1] Research at RSIGMP SA by Prakasa (2021) instead shows that the dimension of reporting patient safety events at RSIGMP SA is culturally deficient.[9] Doctors' reluctance to report medical incidents can be attributed to a culture of censure and a reluctance to share information, in addition to management policies that mandate or disclose such information. Furthermore, the disclosure of medical incidents may be impeded by the psychological strain encountered by healthcare professionals when engaging in discussions with managers regarding errors.[21] Patient safety can be enhanced through the reporting of incidents involving patient safety. By entering patient safety incident reports into a reporting system, safety professionals can conduct an analysis of the incident, determine the factors that contributed to it, and generate data that can be utilized to reduce risks.[22] E-reporting systems, also known as web-based medical incident reporting systems, are widely recognized as efficacious tools for error prevention and education. These systems can serve as a repository of data and a method for monitoring the resurgence of potential issues.[21]

8. An Examination of the Culture of Patient Safety in Response to Error

According to the findings of the research, the patient safety culture is categorized as moderate (57.7%) and (68.8%) in terms of its response to errors in RSGMP X and RSGMP Y. RSGMP X and RSGMP Y differ significantly in this regard (p-value = 0.004). The majority of respondents at RSGMP X believed they would be held accountable in the event of a patient safety incident. Moreover, compared to RSGMP Y, the culture of attributing responsibility to those who commit errors remains elevated. This result is different from

previous research by Addukha (2020) conducted at RSGM Unimus, which showed that the average positive response to the same statement in this dimension was strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that the dimension of response to error at RSIGMP SA has a moderate culture.[9] As a culture of accountability enhances patient safety and assists medical professionals in gaining insight from their errors, Parker (2020) argues that such a culture is preferable to one that abstains from taking blame. Individuals are frequently expected to accept responsibility for their mistakes in a culture of accountability that acknowledges the role of individuals in errors.[23]

9. Overview of Staffing and Work Pace Aspects of the Patient Safety Culture

The results of the study indicate that the personnel and work speed aspects of the patient safety culture at RSGMP X and RSGM Y are categorized as moderate (71.5%) and (72.9%), respectively. The differences between RSGMP X and RSGMP Y in this dimension are not statistically significant (p-value = 0.852). The majority of respondents in RSGMP X and RSGMP Y report having reasonable working hours, sufficient time to treat patients, and are not rushed. Nonetheless, a certain percentage of respondents continues to labor beyond the recommended number of hours. As a result, the culture of this dimension is moderate at both hospitals. This result is different from previous research by Addukha (2020) conducted at RSGM Unimus, which shows that the average positive response to the same statement in this dimension is strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that the dimensions of staffing and work speed at RSIGMP SA are medium culture.[9] There exists a positive correlation between reduced personnel levels and an elevated likelihood of adverse patient care outcomes. Workplace health issues, including severe tension and back and needlestick injuries, are correlated with an excessive workload.[24]

10. An Examination of the Aspects of Patient Safety Culture Valuable Assistance from Clinical Supervisors, Leaders, or Managers

According to the findings of the research, the level of support for patient safety from leaders, managers, or clinical supervisors is categorized as robust in RSGMP X and RSGMP Y, respectively, at 84.2% and 84.2%. A statistically insignificant distinction was found in this dimension between RSGMP X and RSGMP Y (p-value = 0.354). A significant proportion of participants in both RSGMP X and RSGMP Y held a favorable opinion regarding their supervisor or manager. The participants evaluated that supervisors or managers had facilitated patient safety through the following: consistently considering participant suggestions, directing participant actions following sound and proper protocols and regulations, and motivating participant participation in efforts to enhance patient safety. The results of this study are the same as previous research by Addukha (2020) conducted at RSGM Unimus, which shows that the average positive response to the same statement in this dimension is strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that the dimension of support from leaders, managers or clinical supervisors for patient safety at RSIGMP SA has a strong culture.[9]

11. Introduction to Patient Safety Culture Aspects of Teamwork

The study's findings indicate that the collaboration dimension of the patient safety culture at RSGMP X and RSGMP Y is categorized as strong (84.4% and 88.5%, respectively). There are no significant distinctions between RSGMP X and RSGMP Y in this dimension (p-value = 0.307). Effective cooperation and mutual assistance were perceived by the respondents to be present during periods of high activity. Nonetheless, a minority of health staff continue to exhibit contemptuous behavior in both RSGMP X and RSGMP Y. The

results of this study are the same as previous research by Addukha (2020) conducted at RSGM Unimus, which shows that the average positive response to the same statement in this dimension is strong culture.[1] Research at RSIGMP SA by Prakasa (2021) shows that the teamwork dimension at RSIGMP SA has a strong culture.[9] Effective teamwork and communication abilities are critical for providing high-quality healthcare. Enhanced staff collaboration has the potential to yield favorable patient outcomes, mitigate medical errors, optimize operational efficiency, and elevate patient satisfaction.[25]
In general, there are differences between the results of this study and previous studies. The normal situation after the Covid-19 pandemic can affect the decline in patient safety culture. Previous research at RSGM Unimus (2020) and RSIGMP SA (2021) was conducted simultaneously with the Covid-19 pandemic. Research by Huang (2023) shows that the Covid-19 pandemic significantly impacts patient safety culture in health care facilities. The Covid-19 pandemic brings new challenges and risks to healthcare, thus increasing the emphasis on infection control, communication, and teamwork. Healthcare organizations must quickly adapt to the changing environment, which impacts patient safety culture.[10]

CONCLUSION

Creating a culture of patient safety in the hospital environment is the duty and responsibility of all hospital team members. One of the efforts in order to achieve improved patient safety quality is through building a positive patient safety culture, starting with an assessment of the patient safety culture in the hospital. The results of the patient safety culture assessment of the Teaching Dental and Oral Hospital in Semarang City show that RSGMP X has 4 dimensions of strong patient safety culture and 6 dimensions of moderate culture, while RSGMP Y has 7 dimensions of strong patient safety culture and 3 dimensions of moderate culture. The management of the two teaching dental and oral hospitals are equally supportive of improving patient safety culture. It should be noted that the dimensions of reporting patient safety events, responding to errors, and staffing and work speed in both hospitals are still classified as moderate so that programs and policies from each hospital are needed to improve patient safety culture.

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