ORIGINAL ARTICLE
Hospital Survey on Patient Safety Culture in Dental Hospitals in the Twin cities, Pakistan

GHINA RIZWAN[1], ZARNAB RIZWAN[2], USMAN ANWER BHATTI[3], MUHAMMAD MUHAMMAD[4], MARIYAH JAVED[5], FAISAL LIAQAT RANA[6]

[1,2](BDS), Islamic International Dental Hospital, Riphah International University
[3,4]Assistant Professor Department of Operative Dentistry, Islamic International Dental Hospital, Riphah International University
[5]Associate Professor, Oral Pathology, Azra Naheed Dental College, Lahore
[6]Assistant Professor, Periodontology Department, Azra Naheed Dental College, Lahore
Correspondence to: Dr. Muhammad Faisal Rana, Email: Faisalliaqat79@gmail.com

ABSTRACT
Objective: The purpose of our research is to evaluate the patient safety culture at Islamabad and Rawalpindi teaching hospitals.
Materials and methods: A validated and slightly modified questionnaire was sent as a google forms link via WhatsApp and email to different teaching dental hospitals in the twin cities. The returned questionnaires were examined with IBM's statistical package for social sciences (version 22).).
Results: 139 complete questionnaires were analyzed and results were calculated as average positive and average negative responses.
Conclusion: This pilot study demonstrated that degree of patient safety in general in the Hospitals of Pakistan was acceptable. The number of incident reports were very low. Many participants also stated that the hospital is only concerned about patient safety after an unfavorable incident occurs., but they also reported that mistakes always lead to positive outcomes and the departments coordinate well with each other.
Key words: Patient safety, incident reports, dental teaching hospital.

INTRODUCTION

The main hurdle to progressing toward a safer health care system is altering the culture from blaming people for errors to one in which failures are viewed as opportunities to correct the system and prevent injury." according to the Institute of Medicine .[1] The safety of health care systems worldwide have been observed as questionable with a room for improvement.[2] Patient safety has now acquired much recognition in health care systems after the study by the Institute of Medicine "To Err Is Human: Building a Safer Health System".[3]

Patient safety, according to the World Health Organization, is "reducing the likelihood of avoidable injury connected with health treatment to a manageable level.".[4,5] According to a community survey, one fifth of the general population, while visiting hospitals, are at risk of medical errors.[6] Likewise, several studies in different countries have found that 2.9 % to16.6 % of cases in acute care hospitals witness one or more undesirable events. [7, 8] Even in much developed countries some high-profile researches have showed that hospitals have failed to certify for continued patient safety.[9]

The need of decreasing the burden of iatrogenic injury has been embraced by medicine and surgery. This has been accomplished through establishing patient safety reporting systems. The Spanish General Council of Dentists acknowledged the lack of organized data on adverse events in dentistry and created the most comprehensive risk management strategy for patient safety. [10] Compared to medicine, dentistry has been behind the curve relating to developing patient safety technologies as well as protocols. However the trend is changing now and dental health care professionals are recognizing the importance of patient safety systems.[11]

Several tools are available for the evaluation of safety culture in hospitals. [12,13] The Hospital Survey on Patient Safety Culture is one of these tools (HSOPSC). [14] This questionnaire has been tested on a large scale in different countries and found to have a good validity, reliability and generalizability.[13]

The main aim of health care providers is not only to improve patient's health and quality of life but also to protect the patient from any iatrogenic harm during the treatment. The notion of a patient safety culture has been acknowledged for some time in developed countries, it is required to gauge the patient safety culture in a developing country like Pakistan. Hence, this study aims to assess the patient safety culture in Pakistani hospitals using a Hospital Survey on Patient Safety Culture (HSOPSC).

MATERIALS AND METHODS

In the Islamic International Dental Hospital, a cross-sectional research was done from March to August 2020 after taking the ethical approval from the research committee of of Islamic International Dental College *IIDC/IRC/2021/03/010*. A validated questionnaire of HSOPSC was utilized for data collection. The participants were not asked to identify themselves to ensure anonymity. The purpose of the study was clarified in the beginning of the questionnaire for informed consent. The return of a completed questionnaire was identified as a consent to participate in the study. Dental practitioners working in dental hospitals of Pakistan were included in the study. Exclusion criteria included participants from private clinics and incomplete questionnaires.

A slight modification of the questionnaire was done for identifying dental specialties. The questionnaire was sent to dental practitioners as a link of google form to 5 WhatsApp groups of academic institutions having 500 participants . A

soft reminder after 1 week was sent to all the participants.139 completed questionnaires were received which brought the response rate to almost 28%. The completed questionnaires were returned for analysis. The statistical package for social sciences (IBM version 22) was used for data entry and subsequent analysis. The response from 5 point scale was converted into 3 (positive, negative and neutral) and then combined to calculate average positive and average negative response .

Questionnaire: The HSOPSC standard questionnaire has 43 items which are assessed on a five-point Likert scale, from (strongly disagree to agree) and (never to always). The questionnaire was divided into eight sections. Section A consisted of 15 questions regarding work area/unit. Questions about the teamwork and situation of staffing were also present in this section. Section B included 3 questions about the manager or supervisor's beliefs and actions regarding patient safety. Section C contained 5 questions about communication openness. Section D consisted of 3 questions about the frequency of adverse events reported. There was one question in Section E regarding patient safety grade. Section F contained 5 questions about the hospital departments and management while section G had one question about the number of events reported in the department. Section H had 2 questions regarding their experience and working hours.

The response to 19 questions from section 'A' 'B' and 'F' of patient safety culture were recorded on a five point likert scale comprising of "strongly disagree" (1) "to strongly agree" (5), with a neutral group "neither" (3). Responses to 8 questions from sections C and D were recorded using a five-point frequency scale from "never" (1) "to always" (5). In addition, 2 questions had different variables; patient safety grade was assessed using a five-point scale from "excellent" (1) to "failing" (5) and number of events reported in the past 12 months were measured by "none", "1-2 event report", "3-5 event reports", "6-10 events reports" and "11-20 events reports"

RESULTS

Demographic statistics: Out of them 85.6% were from the capital city and only 14.4% were from Rawalpindi. Majority of the participants were working in private teaching hospitals and only 7% were from government hospitals of Pakistan. 30.9% (n=43) participants who responded, belonged to the operative department whereas, 20.8%, (n=29) belonged to orthodontics department, 10.1%, (n=14) responded from the prosthodontic department, (n=19)13.7% were from oral and maxillofacial surgery and (n=8), 5.8% were from the department of periodontology. Out of 139 participants, 5 were professors or heads of department, 27 were assistant/ associate professors, 10 were senior registrar, 61 were post graduate residents, 33 were house officers and 3 were demonstrators who responded to our survey. 59.7% of the participants stated that they have been working in their hospitals from 1 to 5 years(fig2). Majority (59.7%) work for 20 to 39 hours per week (table 3). Fig 1 shows the participant's primary work area.

For a better understanding, we separated the results into three levels: unit level, hospital level, and outcome level.

Unit level statistics: The unit level part of patient safety culture describes the views of participants about understanding patient safety culture within their department or unit. About 79.8% of the participants showed positive attitude when asked if people support each other in their departments and (75.5%) agreed that people treat each other with respect.77.7% of the participants responded positively when asked if their supervisor/manager appreciates them. And 72.6% of the participants were positive that the supervisor considers staff's suggestion for improving patient's safety. However, majority of the participants 58.3% disagreed that as pressure mounts, their boss/manager expects them to work quicker, even if it means cutting corners and 18.7% of the participants remained neutral. For the dimensions of "Feedback and communication regarding errors,", 35.5% selected the option "sometimes" and 37.4% selected the option "most of the time" and for "Communication openness" 41% of the participants selected the option "most of the time". 41.8% and 64% of the participants agreed that they have enough staff and they are working hard to improve patient safety. 30.9% of participants were neutral about the patient safety problems in their department and 50.4% agreed that Patient safety is never compromised in order to complete more work. . Only 35.9% staff members are worried that mistakes they make are kept in their personal files. About the crisis mode 48.2% of the participants agreed that they try to do too much and too quickly.

Frequency of Events: 43.9% of the participants (n=61) agreed to the statement "it is just by chance that more serious mistakes don't happen around here'.

Hospital level statistics: 54.7% of the participants gave acceptable grade to their hospital on patient safety. 56.9% participants agreed that coordination and cooperation among hospital department is better. However, 33.8% participants were neutral about the actions of the hospital management that patient safety is a top priority and only 46.7% agreed that hospital management is interested in patient safety only after an adverse event happens and 28.8% were neutral.

Outcome level aspect of patient safety: 37.4% participants said that they have filled out and submitted only 1-2 event reports in the past 12 months and 69.1% of the participants agreed that mistakes have led to positive changes here. (table 1 shows the combined average response of the participants).54.7% of the participants gave an acceptable grade to the hospital while according to 11.5% of the participants, hospital deserved a poor grade in patient safety culture. (table 2)

Table 1 showing combined responses of the participants.

Patient safety culture composite	Average positive response %	Average negative response %
Staffing	41.7	36
Supervisor/manager's expectations and actions promoting patient safety.	69.5	12
Teamwork	67.5	10.4
Communication openness	34.5	34.5
Feedback and communication about error	48.7	21.6
Frequency of events reported	34.5	35.3

Management and support for patient safety	48.8	20.6

Table 2 showing overall grade on patient safety.

Grade on patient safety	Frequency (%)
Acceptable	76 (54.7)
Excellent	11 (7.9)
Poor	16 (11.5)
Very Good	36 (25.9)

Table 3. Showing number of work hours of the participants.

No. Of Hours Per week	Frequency	Percentage
60-79	3	2.2
40-59	42	30.2
20-39	83	59.7
less than 20 hours	11	7.9

Table 4. showing number of work hours of the participants.

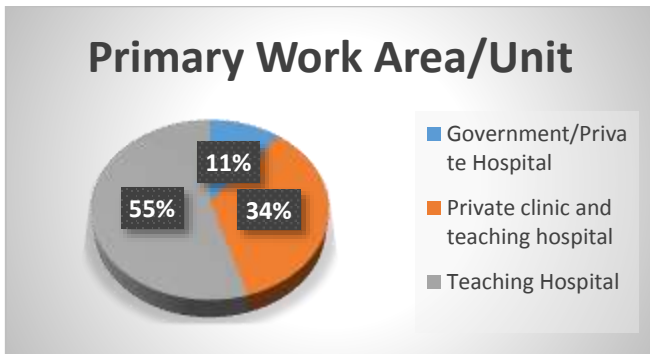| No. Of Hours Per week	Frequency	Percentage
60-79	3	2.2
40-59	42	30.2
20-39	83	59.7
less than 20 hours	11	7.9

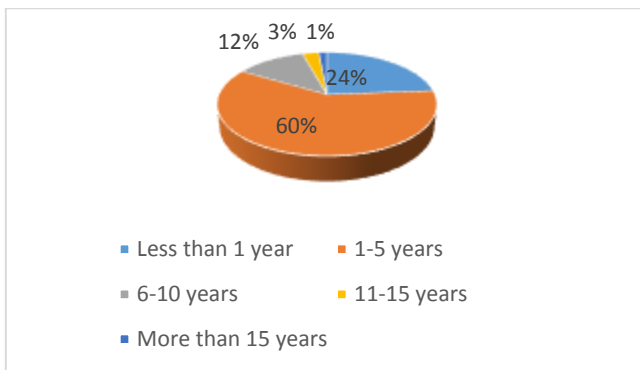Fig 1: showing the work area of the participants.

Fig 2 showing how long the participants have been working in their work area.

DISCUSSION

Patient safety culture has been gaining popularity since the 2000s, when health systems were put to the test to see if they could provide safe, high-quality care. Concerns about safety deficiencies in work procedures and structures, as well as recognition of the high risk of events and unpredictability inherent in health care delivery, have sparked attention. The rising rates of readmission and infection can be used to measure the relevance of safety culture's influence on patient clinical outcomes.[15] Developing safety culture provides the means for managing risks in health care organizations. The initial phase in incorporation of patient safety culture is to survey the current status in a region.[16]

The current study focused on the social part of patient's safety. This questionnaire has been chosen by others, as well. [17] We assessed the patient safety culture in different teaching hospitals of Pakistan utilizing HSOPSC survey. HSOPSC was used both in a specific class of professionals as well as to all hospital staff. A study conducted in march '21 concluded that despite of slow progress, awareness of patient safety is increasing in all fields including dentistry.[18]

The percentage of favorable replies on patient safety culture was 50.42 percent, somewhat higher than the 44.9 percent recorded in a 2014 research of dental facility staff and students. [19] whereas, it was lower than the positive responses reported for Korean, [20] United States [21]and Taiwanese [22] hospitals. This distinction may be because of the differences in organizational behavior between the developed and developing countries. Moreover, owing to the economic advantage, those nations may have achieved early improvement in patient safety cultures as compared to Pakistan.

The dimension which obtained the highest positive response rate (56.9%) was "Team-work with in units", which is comparable to the results reported in Belgium [23] and Dutch. [24] In another study teamwork within departments was 82%. This shows that participants are enthusiastic about helping each other, working as a team, and taking steps to strengthen patient safety.

Concerns about mistakes, staffing, and the frequency of reported incidents were among the features of patient safety culture which reported low positive ratings (39.8%). Earlier research comparing patient safety cultures in international and domestic medical institutions indicated that patient safety cultures in overseas medical facilities were substantially stronger (67-68%),[20] as reported by previous studies on health care facilities in the United States.[25] "Staffing" earned the fewest favorable replies, suggesting that the majority of participants believe that staffing levels are insufficient to meet patient safety-related burden. Hellings and colleagues described a similar discovery. [23] A similar issue was highlighted by a research published in December 2004 that increase in workload due to reduced number of staff members led to compromised patient safety[26]. Many Pakistanis prefer to avoid explicitly discussing negative occurrences and faults and instead choose to remain silent. Same is the case with Taiwanese. [22] According to previous studies, Chinese society is more collaborative than Western culture.. [27] Yang and Yeh [22]stated that this phenomenon is known as "familial collectivism" which is similar to family and organizations. One of the important factor of using a reporting system is that it can be used as a learning tool to improve patient safety. [28] So, it should be encouraged in health care services.

Despite the fact that most participants said there is strong teamwork within departments, several participants mentioned inadequate collaboration and communication

across departments. This result matches the findings of a subjective report conducted at two African hospitals.[29] The findings of this study also revealed that working environment factors were strongly linked to patient safety culture.

The categories in our analysis that needed the most improvement were "staffing" and "frequency of event reporting," both of which had a lower average positive rate than the others. This finding implies that participants in our research region believe their incident reports and errors are being used against them, and that mistakes are being preserved in their personal files. With an average positive rate of 43.4 percent, 33.7 percent, 67.5 percent, and 48.5 percent, dimensions like "feedback and communication" about error, "hospital management support for patient safety," "communication openness," and "superior/manager expectations and actions promoting safety" were the areas to improve.

Limitations: There were a few recognized limitations in the present study. Firstly, our sample size was limited. Secondly the findings of other studies that used the same tool are difficult to compare because those studies had different sampling approach and were conducted in several hospitals with different time frames and data collection methods. Despite this, the instrument has been approved in every country. Finally, the findings presented in this research reflect healthcare experts' perspectives. We made no attempt to verify the veracity of the data supplied by the hospitals by comparing it to other evaluation outcomes, such as interviews, observations, or record reviews.

CONCLUSION

The general patient safety level in Pakistani hospitals was found to be satisfactory in this pilot research. The number of reports of incidents was quite low. Many participants also stated that the hospital is only concerned about patient safety after an unfavorable incident occurs, but they also reported that mistakes always lead to positive outcomes and the departments coordinate well with each other.

REFERENCES

1. Plsek P. Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC National Academies Pr. 2001
2. Kiaei MZ, Ziaee A, Mohebbifar R, Khoshtarkib H, Ghanati E, Ahmadzadeh A, et al. Patient safety culture in teaching hospitals in Iran: assessment by the hospital survey on patient safety culture (HSOPSC). J Health Manag Inform. 2016;3(2):51-56
3. Donaldson MS, Corrigan JM, Kohn LT. To err is human: building a safer health system: National Academies Press; 2000.
4. Safety WP, Organization WH. Patient safety curriculum guide: Multi-professional edition. 2011
5. Nieva V, Sorra J. Safety culture assessment: a tool for improving patient safety in healthcare organizations. BMJ Quality Safety. 2003;12(suppl 2):ii17-ii23
6. Adams RE, Boscarino JA. A community survey of medical errors in New York. Int J for Quality Health Care. 2004;16(5):353-62
7. Brennan TA, Leape LL, Laird NM, Hebert L, Localio AR, Lawthers AG, et al. Incidence of adverse events and negligence in hospitalized patients: results of the Harvard Medical Practice Study I. BMJ Quality Safety. 2004;13(2):145-151
8. Wilson RM, Runciman WB, Gibberd RW, Harrison BT, Hamilton JD. Quality in Australian health care study. Med J Aust. 1996;164(12):754-4.
9. Arab M, Hosseini M. Inpatient Perceptions of Participating in cure decision making and safety among public hospitals of Tehran medical sciences university. J Hospital. 2012;11(1):29-38
10. Perea Pérez B, Santiago Sáez A, García Marín F, Labajo González E, Villa Vigil A. Patient safety in dentistry: dental care risk management plan. Med Oral Patol Oral Cir Bucal. 2011;1(16 (6)):805-809
11. Thusu S, Panesar S, Bedi R. Patient safety in dentistry–state of play as revealed by a national database of errors. Br Dent J. 2012;213(3):E3-E3
12. Anderson DJ. Creating a culture of safety: Leadership, teams, and tools. Nurse Leader. 2006;4(5):38-41
13. Colla J, Bracken A, Kinney L, Weeks W. Measuring patient safety climate: a review of surveys. BMJ Quality Safety. 2005;14(5):364-366
14. John WG, Scott KW, Hawcroft DM. Glycated haemoglobin and glycated protein and glucose concentrations in necropsy blood samples. J Clin Pathol. 1988;41(4):415-8.
15. Huang DT, Clermont G, Kong L, Weissfeld LA, Sexton JB, Rowan KM, et al. Intensive care unit safety culture and outcomes: a US multicenter study. Int J Quality Health Care. 2010;22(3):151-161
16. Pronovost PJ, Weast B, Bishop K, Paine L, Griffith R, Rosenstein BJ, et al. Senior executive adopt-a-work unit: a model for safety improvement. The Joint Commission Journal on Quality and Safety. 2004;30(2):59-68
17. Kim J, An K, Kim MK, Yoon SH. Nurses' perception of error reporting and patient safety culture in Korea. Western J Nurs Res. 2007;29(7):827-844
18. Abutayyem H, Luke A, Khan YH, Muhammad M, George BT. Significance of Patient Safety and Safety Culture in Dental Schools: A Systematic Review. Open Dent J. 2021;15(1)
19. Ramoni R, Walji MF, Tavares A, White J, Tokede O, Vaderhobli R, et al. Open wide: looking into the safety culture of dental school clinics. J Dental Edu. 2014;78(5):745-756
20. Lee H, Doh S, Hwang I. Patient safety culture measure in Korea. Seoul: Korea Institute for Healthcare Accreditation. 2017
21. Westat R, Sorra J, Famolaro T, Dyer MN, Nelson D, Khanna K. Hospital Survey on Patient Safety Culture: 2008 Comparative Database Report. Agency for Healthcare Researc h and Quality, Marc h. 2008
22. Chen I-C, Li H-H. Measuring patient safety culture in Taiwan using the Hospital Survey on Patient Safety Culture (HSOPSC). BMC health Serv Res. 2010;10(1):152
23. Hellings J, Schrooten W, Klazinga N, Vleugels A. Challenging patient safety culture: survey results. International journal of health care quality assurance. 2007
24. Smits M, Christiaans-Dingelhoff I, Wagner C, van der Wal G, Groenewegen PP. The psychometric properties of the'Hospital Survey on Patient Safety Culture'in Dutch hospitals. BMC Health Serv Res. 2008;8(1):230
25. Leong P, Afrow J, Weber HP, Howell H. Attitudes toward patient safety standards in US dental schools: a pilot study. J Dent Edu. 2008;72(4):431-37
26. Carayon P, Gürses AP. A human factors engineering conceptual framework of nursing workload and patient safety in intensive care units. Intens Critical Care Nurs. 2005;21(5):284-301
27. Hsu FL. Americans and Chinese: Passages to differences: University of Hawaii Press; 1981.
28. Vincent C, Burnett S, Carthey J. The measurement and monitoring of safety: drawing together academic evidence

and practical experience to produce a framework for safety measurement and monitoring: The Health Foundation; 2013.