

## ORIGINAL ARTICLE

**Dental Students' Awareness and Attitudes Towards Patients' Safety Culture in Tertiary Care Dental Hospitals**MEMOONA AMIN<sup>1</sup>, AIMAN ZAHID<sup>1</sup>, MUHAMMAD IMTIAZ<sup>2</sup>, SALIMA NAVEED MANJI<sup>3</sup>, HAFIZ FAWAZ NADEEM<sup>4</sup>, WALEED KHALID<sup>1</sup><sup>1</sup>Bachelor of Dental Surgery, Fatima Memorial College of Medicine and Dentistry Lahore.<sup>2</sup>Assistant professor of oral and maxillofacial surgery, department of oral and maxillofacial surgery, Fatima Memorial College of Medicine and Dentistry Lahore.<sup>3</sup>Medical Educationist Department of Medical Education, Fatima Memorial College of Medicine and Dentistry Lahore.<sup>4</sup>Bachelor of Dental Surgery, University of Lahore.

Correspondence to: Memoona Amin

**ABSTRACT****Objective:** Patient safety culture is a mature concept but is new to dentistry and an important component to enhance the quality of life. This study aims to evaluate dental students' awareness and attitudes toward the patient safety culture in the FMH College of Dentistry, Lahore Pakistan.**Methods:** This cross-sectional study was conducted on 396 participants from different public (40%) and private (60%) institutes of Pakistan from January 2022 to December 2022 using the safety attitude questionnaire (SAQ) having six domains: teamwork climate, job satisfaction, perception of management, stress recognition, safety climate, and working conditions.**Results:** This study included 60.2% of BDS 3<sup>rd</sup> year and 39.8% of BDS 4<sup>th</sup> year students of different public and private tertiary care dental hospitals. Results showed the highest mean (3.7015) in the stress level among students and job satisfaction as participants were satisfied with their jobs, showing a mean value of 3.65. Comparison between the public and private sectors showed that teamwork climate (P value 0.400) and job satisfaction (P value 0.445) have no difference and the remaining domains were better in the private sector.**Conclusion:** The study showed a positive response to patient safety. Participants were satisfied with their job but their stress level was also high. In the private sector, work conditions were much better than in the public sector. But my stress level was also high. Safety culture and perception of management were slightly higher in the private sector.**Keywords:** Patient safety, dental students, dental education, dental public health, dental errors, dentistry, patient safety culture, educational methods, health services research**INTRODUCTION**

Many industries implement some rules to ensure the safety of people like aviation<sup>1</sup>. Medical patient safety culture is a mature concept but is new to dentistry so more work is required. In dentistry mortality is rare but morbidity is quite common the invasive procedures such as drainage of infections, implants along with deep injections, etc. required the implementation of patient safety culture<sup>2</sup>. By improving the safety culture in healthcare institutes we can also enhance workplace safety. This helps the institutes to identify their strong and weak areas and work on them for patient safety<sup>3</sup>. Educational institutes bear a huge responsibility for the implementation of patient safety culture and act as a role model

Many low and middle-socioeconomic countries have developed their accreditation system to improve healthcare services. PAKISTAN is considered a developing country and they also have a patient safety culture system but since it is poorly organized and there are flaws in them, it cannot be beneficial<sup>4</sup>. In this paper, we assess the factors and discuss the attitude of students towards patient safety and how we improve it for the betterment of mankind

Patient safety culture is defined as a pattern of individual and organizational behavior that is based on shared beliefs and constantly seeks to minimize patient harm from care delivery<sup>4</sup>

The WHO brings an initiative to bring the culture of patient safety to the global level through the various strategies surrounded by the WORLD ALLIANCE OF PT SAFETY and OSAP. There are various advantages of having a safety culture such as it reduces harm, risk, and adverse events which helps in better patient outcomes and shows the compassion of health care workers towards their patients.

According to the standards of the general dental council (2015) students provide patient care only when they have enough knowledge and skills in a safe environment under the supervision of qualified staff and ensure that the students are aware of their duties if they encounter any risk to patient safety

So, by considering the above-mentioned things there is an urgent need for the implementation of patient safety culture in the curriculum as well as in hospitals. In this study we find the various factors which cause hindrances in the effectiveness of patient

safety and then modify them to reduce the harm, risk, and adverse events in dentistry and apply them in clinical practice for the well-being of patients. Therefore, the purpose of this study is to evaluate the awareness and attitude of dental students in Pakistan regarding the patient safety culture

**MATERIAL AND METHODS**

It is a cross-sectional descriptive study initiated by Fatima Memorial College of Medicine and Dentistry in the dental department and covered all the dental institutes of Pakistan. A sample size of 396 participants from 3<sup>rd</sup> and final-year BDS students were included and the study continued for 1 year. Patient safety culture assessed in different institutes in Pakistan. IRB reviewed and assessed the questionnaire.

The inclusion criteria of the study include; third and final-year dental students of clinical years of all dental colleges in Pakistan including both genders and on the other hand excluding first and second-year dental students from all dental colleges in Pakistan.

Informed consent from each survey participant was taken and participants were informed about the benefits and risks involved in the study, their participation was entirely voluntarily

For a quantitative study, a number of questionnaires exist we used SAQ (safety attitude questionnaire) the only questionnaire which shows the link to patient outcomes & the most widely used tool first developed in the US by the Agency for Healthcare Research and quality.<sup>5</sup>

The SAQ consists of 36 questions and is divided into 6 domains teamwork climate, job satisfaction, perception of management, stress recognition, safety climate, and working condition. Each question is given 5 categories using the Likert scale (Strongly agree, agree, neutral, disagree, strongly disagree) where strongly disagree is given a score of 1 and strongly agree is 5. The questionnaire was checked according to social perspective and the statements were assessed for the approval of dental students in Pakistan

The teamwork climate includes six phases to evaluate teamwork in health care professionals. The job satisfaction domain uses 5 statements to estimate the satisfaction of healthcare professionals in their job. The approval of management actions includes six statements to assess the perception of management.

The stress recognition area contains 4 elements that determine the effect of stress on performance. The safety climate domain uses 8 statements to assess the safety environment in Health care settings. The last domain evaluates the work quality by using 7 statements. Furthermore, the study contained the demographic details such as name, age, email address, name of institute, year of study and parental educational status distribute in different institutes public as well as the private sector in Pakistan using two means .one is face-to-face ( by papers ) and the other through electronic means. we contacted the college twice to remind them to fulfill the data because of their busy schedules.

The validity test of SAQ was performed and the reliability coefficient Cronbach's alpha was determined. While all the data were collected and entered in SPSS 23, the participants' responses were divided into three categories i.e. agree, neutral, and disagree for more clarity. The significant test was selected. The P value less than 0.05 was considered significant.

## RESULTS

The statistical analysis of the questionnaire showed 60.2% of BDS 3<sup>rd</sup> year and 39.8% of BDS 4<sup>th</sup> year students participated in this study mostly of age 20-25 years. In which both male and female students were included in different public and private tertiary care dental hospitals. Parental education showed that the literacy rate was high among them. Most parents had done intermediate, graduation and post-graduation. Private institutions were more in number than public ones. Approximately 16 medical college students gave the responses. As shown in Table 1.

Table 1: Analysis of students, parental education status, and institutions:

Demographic Variables	Categories	Frequency	Percentage
Academic Year	3 <sup>rd</sup> Year	177	60.2
	4 <sup>th</sup> year	117	39.8
Mother Education	Above Matriculation	263	89.5
	Below Matriculation	31	10.5
Father Education	Above Matriculation	273	92.7
	Below Matriculation	21	7.1
Institute	Private	176	59.9
	Public	118	40.1

In **Table 2** the teamwork climate showed a mean of 3.4711 so participants were satisfied with their working environment. All students were less satisfied with their safety being treated as patients and regarding medical errors in the hospital setting as the mean was 3.33. Participants were satisfied with their jobs showing a mean value of 3.65. But the stress factor analysis showed participants have a high-stress rate during their work. Stress domain showed the highest mean than the other domains. Perception of management was good as the mean is 3.533. Work conditions were also good showing a mean of 3.55.

Table 2: statistical analysis of domains of SAQs:

	Mean	Std. Deviation
Teamwork	3.47	.58
Safety	3.33	.61
Job_Satisfaction	3.65	.72
Stress	3.70	.81
Perception	3.53	.61
Work_condition	3.55	.77

As shown in **Table 3** there was a comparison between the private and public sectors in all these domains. Teamwork climate and job satisfaction didn't show a significant difference between the public and private sectors. Safety culture and perception of management were slightly higher in the private sector. The stress level was also higher in the private sector which showed that even if the private sector have given a more safe environment and management was good but still there was high stress among the participants. This stress can have any reason as there was no

significant change in job satisfaction. Work conditions were way better in the private sector than the public sector as there was good training of new personnel with timely information given.

Table 3: relationship between the domains of SAQ of public and private sector:

	Name of the institution	Mean	Std. Deviation	P-value
Teamwork	Public	3.44	.53	0.40
	Private	3.49	.60	
Safety	Public	3.25	.59	0.88
	Private	3.38	.62	
Job_Satisfaction	Public	3.69	.67	0.44
	Private	3.62	.75	
Stress	Public	3.63	.69	0.24
	Private	3.75	.88	
Perception	Public	3.44	.53	0.014
	Private	3.59	.65	
Work condition	Public	3.41	.82	0.013
	Private	3.64	.73	

## DISCUSSION

The aim of this study was to assess dental students; awareness and attitudes toward the patient safety culture in the public and private sectors in dental colleges. It also compared the patient safety attitude between the public and private sectors.

According to the results obtained it shows that the participants were satisfied with teamwork in the dental hospital setting as they had support from their colleagues and they face no problems during any patient problem or disagreement. Improvement in the teamwork between them it can develop students perceived holistic view of patients and dental work<sup>15</sup>. Another study showed an appositive attitude of students for Inter professional education which can improve teamwork and communication skills<sup>16</sup>.

According to the data, Job satisfaction shows a high mean among the other domains as they feel comfortable in the hospital environment. Job satisfaction and work environments could lead to a better employment rate of professionals and could positively influence patient care<sup>17</sup>. The safety climate was just satisfactory as they feel safe and had a strategic system regarding patient safety questions. Safety climate evaluation can also be associated with the worker, work schedule, and workplace characteristics<sup>18</sup>. Management support was better during daily efforts and patient safety was not compromised. The stress level was high as their work efficiency decreases when there was increased workload and fatigue.

A comparison between the public and private sectors was done. The major difference was seen in the work conditions as they were better in the private sector. Safety climate and job satisfaction were more in the public sector. Other domains i.e. teamwork and perception of management were better in the private sector. Medical settings in Karachi showed higher stress, anxiety, and depression among undergraduate students in association with certain stressors<sup>19</sup>. In our study, the stress level was also high in the private sector as compared to the public sector. Correlation between all these domains in both the public and private sectors was positive.

In comparison with the parent article Job satisfaction was approximately the same due to a better clinical environment and patient care. The safety climate domain was not satisfactory it needs improvement. Parental education didn't show any significant difference. A gender comparison was done it has shown that female students are more stressed during clinical work. In this study, there was an improvement in the patient safety culture. Job satisfaction and stress recognition domains showed a more positive impact but in other domains the trend was consistent.

There could be many reasons leading to the lack of patient safety in dental settings. A study done among Undergraduate medical students at the University of Lahore showed a positive attitude toward patient safety.<sup>15</sup> It also showed that students have

a lack of patient safety education in the medical curriculum of Pakistan. Dental colleges in Pakistan do not ensure patient safety both in curriculum and clinical settings. All these factors contribute to never events during clinical work. Patient safety is also promoted in the curriculum. The only reason can be that it is not part of the formal curriculum. Faculty have the teaching agenda but patient safety can be taught to students even if it is not part of the curriculum

**Recommendations:** Safety culture is part of a continuously evolving professional culture, this may bring positive change in the outlook of the organization. Patient-centered care requires situational awareness and readiness to deal with issues that may arise during patient care. The quality assurance department may look into lapses and can ask educational leadership to help in addressing these issues.

Surely these recommendations should be part of the current curriculum. The patient safety component in the dental college curriculum should be given centric importance to develop lifelong learners.

## CONCLUSION

The study showed a positive response to patient safety. The job satisfaction and stress level domain showed the highest score. When a comparison of the public and private sectors was done major difference was seen in the work conditions as they were better in the private sector. Patient-centered care requires situational awareness and readiness to deal with the issue that may arise during patient care

## REFERENCES

1. Yamalik N, Pérez BP. Patient safety and dentistry: what do we need to know? Fundamentals of patient safety, the safety culture and implementation of patient safety measures in dental practice. *International dental journal*. 2012 Aug 1;62(4):189-96.
2. Thusu S, Panesar S, Bedi R. Patient safety in dentistry—state of play as revealed by a national database of errors. *British Dental Journal*. 2012 Aug;213(3):E3-.
3. Theodosios S. The development of patient safety culture. *Health Science Journal*. 2012;6(2):0-.
4. Kristensen S, Bartels P. Use of patient safety culture instruments and recommendations. Aarhus, Denmark, European Society for Quality in HealthCare-Office for Quality Indicators. 2010;113.
5. AlOlayan R, Alahmad A, Buali D, Alonaizan F, Alhareky M, Alhumaid J, Nazir MA. Patient safety culture amongst dental students and interns in Dammam, Saudi Arabia. *European Journal of Dental Education*. 2021 Feb;25(1):175-82.
6. Al-Surimi K, AlAyadi H, Salam M. Female dental students' perceptions of patient safety culture: a cross sectional study at a middle eastern setting. *BMC medical education*. 2018 Dec;18(1):1-0.
7. Myung SJ, Shin JS, Kim JH, Roh H, Kim Y, Kim J, Lee SI, Lee JH, Kim SW. The patient safety curriculum for undergraduate medical students as a first step toward improving patient safety. *Journal of surgical education*. 2012 Sep 1;69(5):659-64.
8. Roff S, McAleer S, Harden RM, Al-Qahtani M, Ahmed AU, Deza H, Groenen G, Primparion P. Development and validation of the Dundee ready education environment measure (DREEM). *Medical teacher*. 1997 Jan 1;19(4):295-9.
9. Kossioni AE, Lyrakos G, Ntinalexi I, Varela R, Economu I. The development and validation of a questionnaire to measure the clinical learning environment for undergraduate dental students (DECLEI). *European Journal of Dental Education*. 2014 May;18(2):71-9.
10. Ali K, Raja M, Watson G, Coombes L, Heffernan E. The dental school learning milieu: students' perceptions at five academic dental institutions in Pakistan. *Journal of dental education*. 2012 Apr;76(4):487-94.
11. Saqib Khan NU, Hafeez A, Qamar K, Tasawar A, Hisamuddin E, Shah Bukhari AA. THE PERFORMANCE INDEX OF PRIVATE AND PUBLIC SECTOR HOSPITALS OF KARACHI, PAKISTAN. *Pakistan Armed Forces Medical Journal*. 2020 Oct 1;70(5).
12. RIZWAN G, RIZWAN Z, BHATTI UA, MUHAMMAD M, JAVED M, RANA FL. Hospital Survey on Patient Safety Culture in Dental Hospitals in the Twin cities, Pakistan.
13. Leisnert L, Karlsson M, Franklin I, Lindh L, Wretling K. Improving teamwork between students from two professional programmes in dental education. *European Journal of Dental Education*. 2012 Feb;16(1):17-26.
14. Morison S, Marley J, Stevenson M, Milner S. Preparing for the dental team: investigating the views of dental and dental care professional students. *European Journal of Dental Education*. 2008 Feb;12(1):23-8.
15. Ohara Y, Nomura Y, Yamamoto Y, Okada A, Hosoya N, Hanada N, Hirano H, Takei N. Job attractiveness and job satisfaction of dental hygienists: from Japanese dental hygienists' survey 2019. *International journal of environmental research and public health*. 2021 Jan;18(2):755.
16. Silver SR, Boiano JM. Differences in safety climate perception by health care worker, work schedule, and workplace characteristics. *American Journal of Medical Quality*. 2019 Mar;34(2):165-75.
17. Rehmani N, Khan QA, Fatima SS. Stress, Anxiety and Depression in students of a private medical school in Karachi, Pakistan. *Pakistan journal of medical sciences*. 2018 May;34(3):696.
18. Kamran R, Bari A, Khan RA, Al-Eraky M. Patient safety awareness among undergraduate medical students in Pakistani medical school. *Pakistan Journal of Medical Sciences*. 2018 Mar;34(2):305.