

PERCEPTION OF CLINICAL STRUGGLES FACED BY LEFT HANDED DENTAL STUDENTS AND PRACTITIONERS OF DENTAL COLLEGES OF TWIN CITIES OF PAKISTAN DURING ROUTINE DENTAL PRACTICE

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ABSTRACT

Objective: To get the perception of clinical struggles faced by left handed dental students and practitioners of dental colleges of twin cities of Pakistan during routine dental practice.

Study Design: Cross-sectional Survey

Place and Duration of Study: Six dental colleges of Twin cities of Pakistan from September 2017 to February 2018.

Material and Methods: Study participants included third year and final year students, postgraduate trainee and senior faculty. The snowballing strategy used by each college assisted in enlisting a large number of left-handed students. Questionnaires from a prior study on a relevant issue were sent to the study population and completed voluntarily. Statistical analysis for frequency of clinical difficulties was computed using SPSS software version 21.

Results: Out of 53 participants, 24.5% (13) were male and 75.5% (40) were female. The participants' ages ranged from 21 to 39, with a mean of 26.53. Around 24.5 percent of left-handed dentists had no trouble performing dental work, whereas the majority, 62.26 percent, had issues. The participants' ages ranged from 21 to 39 years, with a mean of 26.53 years. Around 24.5 percent of left-handed dentists had no trouble performing dental work, whereas the majority, 62.26 percent, had issues. Two third of the participants felt discriminated when working with left hand and felt that their performance could be improved had they been right handed. About 80% felt they were at higher risk of developing musculoskeletal risk for back and neck region using armamentarium designed for their right handed colleagues compared to the dentists working with their right hands using right sided dental units.

Conclusion: Our findings show that a considerable percentage of left-handed dentists have difficulty performing ordinary dental work, as well as having right-handed instructors, the majority of whom are students and house officers. They were feeling left out in the environment and equipment that is only suitable for right handed dentists without having much help from seniors regarding their issues.

Key words: Dentist left handed, perception.

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INTRODUCTION

Laterality expresses the disparity in the roles of the human cerebral hemispheres. Laterality expresses the disparity in the roles of the human cerebral hemispheres ¹. Both hemispheres work equally at birth, but as neurological development increases, one begins to take precedence. This training can run anywhere from five to six years, and by the end of it, the person will have developed a distinct laterality ².

The reason why 90 percent of the population is right-handed and the population that is faster with their left hand is only about 10 to 12 percent is unknown, but other explanations have been proposed, including genetic variables and pre- and post-natal situations. The reason why 90 percent of the population is right-handed and the population that is faster with their left hand is only about 10 to 12 percent is unknown, but other explanations have been proposed, including genetic variables and pre- and post-natal situations.

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It is a real problem for left handed people to live in right handed world. Handedness becomes important for dental practitioner regarding his training position. Regrettably, almost all dental tutoring and practices in dental schools are designed for right handed students. For that reason, left handed students study at right sided chairs in most institutes in the beginning of their education ³.

To execute a clinical process in the dental sector, a high level of hand dexterity is required, as well as mental pictures ⁴.The majority of dental instruments are universal, however the general construction and design are suited to right-handed users. As a result, the left-handed player must adapt to various positions, resulting in a loss in performance and increased discomfort ⁵.

Many dental offices lack dental chairs made specifically for left-handed people. Nonetheless, there are manufacturers who produce left-hand dentist equipment that is identical to right-hand equipment. But their popularity, availability and usage is relatively less ⁶.

There is not much online literature and no text book that narrates advice for left handers ⁷. Dentistry is a challenging field demanding attention, precision and expertise⁸. The structure and position of the dentition, position of patient and dentist as well as the selection of the proper angulations of the armamentarium, all play a role in effective dental therapy. Normally Dental chairs with the right side are utilized in clinics and hospital sittings. Conversely, it cannot be said that all dentists are right handed. Although there is no evidence in the literature that left-handed dentistry practitioners perform worse on right-sided dental units, it cannot be denied that the overall performance of left-handed practitioners could be improved by allowing them to work from the patient's left side ^{9,10}.

In Brazil they worked on the difficulties experienced by left-handed dentists in clinical practice and found that lefthanders were having more musculoskeletal problems in comparison with the right handed dentists ¹¹. There is a lot of working going on about work related musculoskeletal disorders in dentists and their being absent from work because of the reason ¹².

The purpose of this research is to create awareness through recognition of clinical troubles encountered by left handed dental students and dental practitioners. Results of this study will help to orient left handed dentists to achieve best performance with minimum discomfort.

There is less work in literature regarding the technical hitches experienced by left handed dental students and practitioners and it cannot be denied that overall average performance can be improved by providing them their required facilities.

MATERIAL AND METHODS

A cross-sectional study was carried out in six dental colleges (Islamabad Medical & Dental College, Islamic International Medical & Dental College, Pakistan Institute of Medical Sciences, Margalla Institute of Health Sciences, Armed Force Institute of Dentistry, Rawal Medical & Dental College) of Twin cities of Pakistan for six months (September 2017 to February 2018). Study participants included third year and final year students, postgraduate trainee and senior faculty while those who were not willing to participate were excluded from the study. A network of informants was identified as part of the study population, which led to a cascading process. This snowballing strategy, which was used in each college, managed to recruit a large number of left-handed students.

A questionnaire was chosen from a prior study on a related topic. A few changes were made to a few questionnaires. After receiving feedback from concerned specialists, the Questionnaire was content and face validated before being sent to study participants, who willingly completed it. The survey consisted of seven questions. Any questionnaires that were not completed were removed from the study, and strict confidentiality for all responses was emphasized.

The outcome variable was frequency of clinical difficulties faced by dental practitioners and students working in clinical

CAPSULE SUMMARY

Following problems were faced by the left handed dentists during their clinical practice:

- Almost all lacked proper guidance from their right handed instructors.
- Working with equipment designed for right handed dentists made the majority of them feel difficulties in performing their routine dental work.
- Majority felt left out and discriminated and thought that they were at a higher risk for developing musculoskeletal disorders.

The authors recommend:

- Procurement of Ambidextrous dental units
- Pairing of left handed dental surgeons with left handed dental technicians.
- Charting of an effective plan by senior practitioners for overcoming this obstacle and achieving adaptability with limited resources.

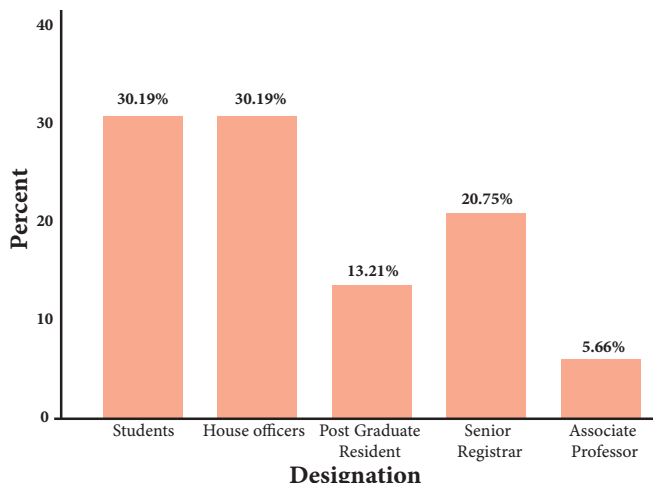


Figure 1: Designation of Left Handed Dentist departments. All the data was entered in statistical package for social sciences (SPSS) version 21.0. The qualitative variables

Problems Faced		Male		Female		Total
1.	Do you have a problem with the right-handed instructors or supervisors?	Yes	8	Yes	25	53
		Sometimes	1	Sometimes	6	
		No	4	No	9	
2.	Do you have a problem in being left-handed to do the required dental work?	Yes	5	Yes	27	
		Sometimes	7	Sometimes	7	
		No	1	No	6	
3.	Have you ever felt discriminated for being left-handed during your dental course?	Yes	2	Yes	11	
		Sometimes	4	Sometimes	14	
		No	7	No	15	
4.	Do any of your patients complain if you are working with a left-sided chair?	Yes	2	Yes	8	
		Sometimes	5	Sometimes	10	
		No	6	No	22	
5.	Do any of your patients complain if you are working with a left hand?	Yes	3	Yes	6	
		Sometimes	1	Sometimes	6	
		No	9	No	28	
6.	Have you ever tried to tell your instructor the difficulties you face being a left handed student?	Yes	3	Yes	16	
		Sometimes	7	Sometimes	18	
		No	3	No	6	
7.	Did the instructor do anything to help you?	Yes	4	Yes	10	
		Sometimes	5	Sometimes	20	
		No	4	No	10	

Table 1: Problems Faced by Left Handed Dentists

in data that is gender and outcome variable will be presented as frequency and percentages. The age of the participants will be provided quantitatively as a mean with standard deviation. Figures and tables will be used to present the findings.

RESULTS

Total 53 participants were found to be left handed in six dental colleges in academic year 2017-18 out of which 24.5%(13) were male and 75.5%(40) were female. Age stretched from 21 to 39 with a mean of 26.53. Relatively larger numbers of left handers emerged among students and house officers as shown in Figure 1.

According to current study, 62.26% of the left handed dentists mentioned they had problems with right handed instructors and supervisors. As validated in Table 1, a substantial percentage of left handers (60.30%) had difficulty doing the essential dental work efficiently as compared to right handers.

Working on a right-sided chair, according to 62.26 percent of the 53 dentists we polled, lowers the quality of care compared to working on a left-sided chair. Even more individuals, 69.81 percent, stated that their clinical performance would

be significantly improved if they were right-handed. All of the respondents reported musculoskeletal issues as a result of using the services of right-handed dentists, with 81.13 percent believing that left-handed dentists are more likely to develop back and neck complications, as shown in Table 2. Patients were aware that the operators were left-handed, but they were unconcerned about the dentist's favored hand.

DISCUSSION

The existent study explored left handed clinical dentists perceptions about several characteristics related to handedness in dentistry. As per the outputs of this study, 53 participants turned out to be left handed in 6 colleges, out of which 13 (24%) were male and 40(75%) were female, in comparison to the study conducted by Leila Mostawe et al in the year 2019, where 47.8% participants were males and 52% were females¹² and a similar study in KSA by Iffat M Ahmad showed 65% female left handers whereas 46% male participants¹¹ Furthermore, contrasting results were seen in the study by AL-Johnny in which 57% were males and 43% were females⁹.

Current study revealed that about 26.4% of the participants did not receive any instructions or help regarding the adaptability to

Dental Practice Perceptions		Male		Female		Total
1.	Do you think the quality of care is depressed by working on a right-sided chair?	Yes	8	Yes	25	53
		Uncertain	3	Uncertain	8	
		No	2	No	7	
2.	Do you believe that your performance would be better if you were right-handed?	Yes	9	Yes	28	
		Uncertain	2	uncertain	4	
		No	2	No	8	
3.	Do you believe that a left-handed dentist is at a higher risk of developing musculoskeletal complications related to					
A	Hands	Yes	3	Yes	6	
		Uncertain	1	Uncertain	10	
		No	9	No	24	
B	Shoulder	Yes	4	Yes	12	
		Uncertain	3	Uncertain	12	
		No	6	No	16	
C	Neck	Yes	9	Yes	34	
		Uncertain	1	Uncertain	4	
		No	3	No	2	
D	Back	Yes	12	Yes	31	
		Uncertain	0	Uncertain	4	
		No	1	No	5	
E	Legs	Yes	2	Yes	4	
		Uncertain	2	Uncertain	2	
		No	9	No	34	
F	Feet	Yes	4	Yes	0	
		Uncertain	1	Uncertain	4	
		No	8	No	36	

Table 2: Dental Practice Perceptions of Left Handed Dentists

the right handed dental practice which is similar to the results indicated by that the majority of the participants (around 43.5%) did not receive guidance from their supervisors during training¹². Mohamed S. Zaghoul also pointed that majority of left handed practitioners were not given any programmed courses for their handedness nor were they being given any practical demonstrations. Also, they were certain that by providing such courses, stress could be reduced improving overall efficiency of practitioners¹³.

Present study shows that around 80% of the participants felt they were at higher risk of developing musculoskeletal conditions. According to a study by E.M.A Silva et al, the majority of students did not have musculoskeletal complaints prior to enrollment in odontology school¹. Another study done in New Zealand showed results of 83.3% left handed dental students having musculoskeletal pain after practicing dentistry¹⁴. 2/3rd of the participants felt discriminated working with the right

handed dentists, while the results from a study conducted by Masud Y and Ajmal MA in 2012 similarly revealed the participants were subjected to many forms of prejudice, each of which had a negative impact on their psychological and social lives². In disparity to 33.6% of the dental undergraduates in Saudi Arabia⁹, more than 80% of the participants in this survey believed that a left-handed dentist utilizing right-handed dentist armamentarium is more likely to develop musculoskeletal disorders in the shoulder, neck, and back. Same results were seen in the study in India conducted in 2016⁵.

In this research, 24.5% of left handed practitioners did not experience difficulty in carrying out the dental work while 62% did struggle. The findings matched those of a study in which left-handed surgeons found working with right-handed colleagues in the clinic or operating room to be inconvenient. The left-handed practitioners also experienced tension, weariness, and bodily pain, according to the study. In other investigations, it

Future Perceptions		Male	Female		Total
1.	Would you prefer to introduce yourself as a left-handed dentist in your Curriculum Vitae?	Yes	11	Yes	19
		Not Sure	2	Not Sure	17
		No	0	No	4
2.	In future, will you correct the habit of your children if they show the habit of using their left hand?	Yes	1	Yes	6
		Not Sure	5	Not Sure	12
		No	7	No	22
3.	Do you think being a left-handed dentist will affect your dental assistant's ability or convenience to work?	Yes	3	Yes	3
		Not Sure	1	Not Sure	3
		No	9	No	34
					53

Table 3: Future Perceptions of Left Handed Dentists

was found that odontology students had a larger percentage of unpleasant symptoms in the lumber and cervical regions ¹.

Somewhat similar results of a cross sectional study where 18% of the survey participants reported they were not having any problems with being left handed to do the required dental work, was carried by Iffat in Saudi Arabia ¹¹.

About 18% of this research participants claimed that their patients noticed and complained about them working with their left hands while the majority reported the patients being fine or not noticing their handedness at all. These results well accorded with the study of Chris Lee in Australia where majority of respondents mentioned the patients barely notices the dentist using left hand and usually never has a problem with the operators hand of choice ¹⁵.

CONCLUSION

In a nutshell, the study displays that bulk of the left handed dentist met problems in executing their routine dental work and also having right handed instructor. Reasonably large number emerged among students and house officers. About two third of the participants felt discriminated when working with left hand and 80% felt higher risk of musculoskeletal problems.

RECOMMENDATIONS

The fast growing world of medical technology facilities various differently abled individuals hence it is imperative that a left handed dental practitioner gets a chance too. Specific dental equipment can be designed as per the suitability and convenience of the practitioner. Ambidextrous dental units can be manufactured and stocked at the training colleges too. The left handed dental practitioners can possibly benefit too from a council dedicated to the wellbeing of the left handed practitioners. The dental colleges can take note of the number of left handed practitioners at the time of induction and plan

ahead for their special equipment. Left handed practitioner can be paired with left handed assistants to achieve the effective and unhindered 4 handed dentistry. Furthermore, senior practitioners should devise an effective plan to impart knowledge to the junior practitioner as to how one can overcome the obstacle and achieve adaptability in the places of limited resources.

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AUTHORS' CONTRIBUTION

Ayesha Khitab	Acquisition of data
Amna Abid	Analysis and interpretation of data, Drafting the Article
Muhammad Jamal	Drafting the Article, Critical revision, Proof reading
Abeer Abdul Jabbar	Acquisition of data
Saniya Sohail	Drafting the Article
Muhammad Zeeshan Baig	Conception and design

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