

An Evaluation of Empathy Levels among Dental Students and House Officers

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ABSTRACT

Introduction: Empathy is the capability to feel and understand what other human beings are going through mentally and emotionally. To be empathetic is a part of good mental health, it is to be connected with others and share. So as health professionals it is important to be empathetic in daily practices

Objective: The study aims to evaluate empathy levels in dental students from 1st year to final year and house officer to show how their attitudes are affected in these five years.

Methods: A cross-sectional study was conducted among Lahore Medical and Dental College dental students. One hundred and ninety-four students participated in the study. Toronto empathy questionnaire was given after ethical review board approval. Data analysis was done through SPSS version 25.0. One-way ANOVA was used to explore the difference in empathy levels among dental students and house officer of Lahore Medical and Dental College.

Results: The mean empathy level among dental students was 45.16 where the minimum value was 23 and the maximum was 62. The mean level of empathy among males was 42.18 which is less than the mean level of empathy among female dentists which was 46.40. A significant difference was found between students in the 3rd year and final year (MD = 8.34, p = .000). This showed that 3rd-year dental students are more empathetic as compared to final-year students.

Conclusion: Empathy is important in dental school students' behavior and grooming. It should be implemented in all years, particularly in the last year to accommodate students preparing to enter the workforce. Students should be examined for their attitudes and actions to detect a reduction in empathy. It is also critical to incorporate various techniques of teaching empathy and make it a part of the academic curriculum in this regard.

Keywords: Empathy, dental students, Toronto empathy questionnaire

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INTRODUCTION

Empathy is the ability to sense other people's emotions and the ability to imagine what someone else might be feeling (Cherry, 2022). It plays an important role in building a bridge between people to be more compassionate, sensitive, and solicitous towards one another. The concept of empathy started in the early 19th century (Lanzoni, 2018). Varun Warriar, a postdoctoral researcher at the University of Cambridge, said that "any human attribute is partly genetic". He published a study known as "Genome-wide association studies" in 2018 that shows imbalance in genetics is related to changes in empathy. According to him, even empathy has some genetic connection. They looked at 10 million genetic variants and found that these variants contribute to 10 % of the variability in empathy (Goldhill, 2022). But this does not mean that empathy is beyond the control of human beings. The term "empathy" comes from the German scientific term 'Einfühlung' which means "in feeling" (Moral, de Leonardo, Martínez and Martín, 2019). By the mid-19th century, as more work started on this, another scientist, Rosalind Dymond Cartwright, highlighted the importance of interpersonal connection as a "core concept". Another social psychologist, Daniel Batson, who has researched empathy for decades, argues that the term can now refer to eight different concepts: knowing another's thoughts and feelings; imagining another's thoughts and feelings; adopting the posture of another; feeling as another does; imagining how one would feel or think in another's place; feeling distressed at another's suffering; feeling for another's

suffering, sometimes called pity or compassion, and projecting oneself into another's situation (Eprs and Parliamentary, 2020).

According to the literature, empathy plays a vital role in peer relationships as well as dentist-patient relationships. It improves communication and helps with the stress that others might be going through (Sherman and Cramer, 2005). Alhareky discovered that females are more empathetic than males. High-GPA students also tend to be more compassionate (Nazir et al., 2021). But the self-reported decrease in empathy during house jobs is concerning (Yarascavitch et al., 2009).

In this study, the Toronto empathy questionnaire was used, which is a tool designed to assess empathy levels. It is a self-reporting instrument. This tool has strong validity, coordinates with behavioral considerations, and self-reporting empathy. It is a reliable instrument for empathy evaluation (Spreng et al., 2009).

METHODS

This cross-sectional study was conducted between March and May 2022 at Lahore Medical and Dental College, Lahore. Ethical permission was taken from the ethical committee LMDC. Participants included were from 1st to final year BDS and house officers. Toronto Empathy Questionnaire (TEQ) was distributed through google forms among students. The authenticity of the Questionnaire is available at Spreng RN, McKinnon MC, Mar RA, Levine B (Spreng et al., 2009). The Toronto Empathy Questionnaire: scale development and initial validation of a factor-analytic solution to multiple empathy measures. It is a brief, reliable, and valid instrument for the evaluation of empathy. This questionnaire consisted of 16 questions. Each question was rated on 5 points Likert scale from '0' to '4' where 0 means Never, 1 means Rarely, 2 means Sometimes, 3 means

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Often, and 4 means Always. Reverse scoring items were also included in this questionnaire which was, items no. 2, 4, 7, 10, 11, 12, 14, and 15. Data was collected by using a non probability convenient sampling technique. Both genders were included in the survey. Data was collected on google forms whereas, before data collection, participants of the study were briefed about the purpose of the study. Data was later taken from google forms and entered into an Excel sheet for additional analysis. The extracted data were coded and entered in SPSS version 25.0 for analysis. Reverse scoring was performed. Frequency and percentage were calculated for gender and level of education. Mean and standard deviation was calculated for overall empathy level. An independent sample t-test was used to explore the gender-wise difference in empathy levels among dental students and house officers. One-way ANOVA was used to explore the difference in empathy levels among different years of education in terms of the level of empathy.

RESULTS

As demographic variables, gender and level of education were taken. Males were 57 (29 %) whereas females were 137(70 %) (Figure 1). The mean empathy level among dental students was 45.16 ± 9.23 where the minimum value was 23 and the maximum was 62.

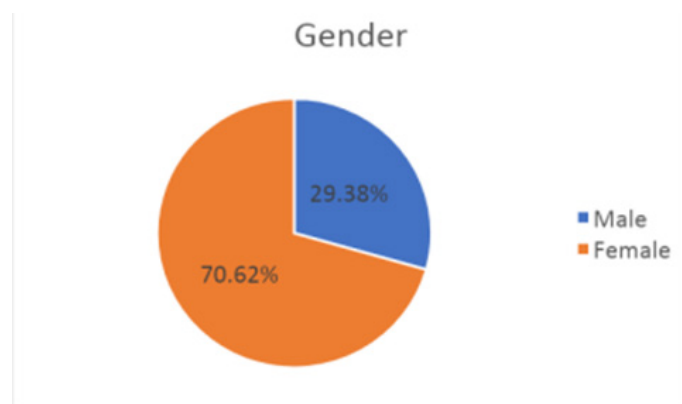


Figure 1. The percentage ratio between two genders (males and females)

Dental students who participated from 1st year were 38 (19.59 %), 2nd year were 39 (20.10 %), 3rd year were 45 (23.20 %), Final year were 44 (22.68 %) and house officers were 28 (14.43 %) as shown in Figure 2.

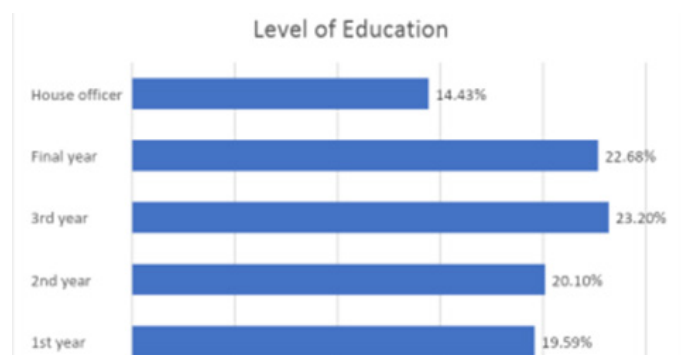


Figure 2. Level of education from 1st year to house officers

The gender-wise difference in empathy was calculated using the independent sample t-test. The results were significant ($t = 0 -2.96$, $p = 0.003$). The mean level of empathy among males was 42.18 ± 9.03 which is less than the mean level of empathy among female dentists (46.40 ± 9.06) as shown in Table 1.

Table 1. Gender-wise difference in empathy among dental students.

	Gender	N	Mean	Std. Deviation	t	Sig.
Empathy	Male	57	42.18	9.03	-2.96	0.003
	Female	137	46.40	9.06		

One Way ANOVA was used to explore the difference in empathy levels among dental students studying in different educational years which was found statistically significant. ($F = 6.067$, $p = 0.000$).

The mean level of empathy among 1st-year dental students was 44.21 ± 9.97 , 2nd years dental students were 45.72 ± 9.01 , 3rd-year dental students was 48.55 ± 5.24 , final year dental students was 40.20 ± 11.34 and that of house officers was 48.14 ± 6.38 as shown in Table 2.

Research demonstrated that the level of empathy among dentistry students was least among final year students and highest among 3rd year students.

Table 2. Level of empathy according to the education level among dental students

	Class	N	Mean	Std. Deviation	F	Sig.
	1 st year	38	44.21	9.97	6.067	0.000
	2 nd year	39	45.72	9.01		
	3 rd year	44	48.55	5.24		
	Final year	44	40.20	11.34		
	House officer	28	48.14	6.38		

Moreover, the Post Hoc test, 'Gabriel', was performed to have a pairwise comparison of different years of education in terms of the level of empathy as shown in Table 3.

A significant difference was found between students in the 3rd year and final year ($MD = 8.34$, $p = 0.000$). This showed that 3rd-year dental students are more empathetic as compared to final-year students. A significant difference was found between students in the final year and house officers ($MD = -7.94$, $p = 0.002$). This showed house officers are more empathetic as compared to final-year dental students. A significant difference was found between dental students in the final year and 2nd year ($MD = -5.51$, $p = 0.047$). This showed that 2nd year dental students are more empathetic as compared to final year students.

Table 3. Pairwise comparison of different education levels in terms of being empathetic.

Level of education	Mean Difference	Sig.	95% Confidence Interval	
			Lower Bound	Upper Bound
1 st year- 2 nd year	-1.51	0.99	-7.19	4.17
2 nd year- 3 rd year	-2.83	0.78	-8.31	2.65
3 rd year- final year	8.34*	0.00	3.03	13.65
Final year- House officers	-7.94*	0.00	-13.93	-1.95
House officers- 1 st year	-3.93	0.52	-10.12	2.26
1 st year- 3 rd year	-4.33	0.23	-9.85	1.18
1 st year- Final year	4.01	0.33	-1.51	9.52
3 rd year- House officers	0.40	1.00	-5.58	6.39
Final year-2 nd year	-5.51*	0.04	-10.99	-0.04
House officers- 2 nd year	2.42	0.90	-3.73	8.58

DICUSSION

The study addresses the empathy level among dental students from 1st year BDS to Final year BDS and House officers in LMDC. The data was collected through the Toronto empathy questionnaire which was distributed online in the form of google forms. The demographic variables were gender and level of education.

A recent study conducted in 2021 in Dammam, concluded that the female gender is more associated with empathy (Nazir et al., 2021). According to one-way ANOVA, the mean empathy levels were seen highest in 3rd year BDS students with a mean of 48.55 and lowest in final year which is 40.20. So significant difference was seen between the 3rd year and final year BDS which according to the Post HOC test was MD = 8.34.

Another research that was carried out at CMH college shows that empathy levels are decreased in final year BDS students. They also concluded that a gradual decrease in empathy was observed in their institute year-wise from 1st to final year (Kamran et al., 2019). Saha et al. 2021 in their article on self-reported empathy levels among dental undergraduates in North India discussed that in 1st year, students are motivated and excited to be a part of the healthcare profession. They started developing empathy with each other and patients. But when they reach the final year, they start worrying about their future, career, and quotas, so their behavior might get affected (Saha et al., 2021). Also, according to Sherman and Cramer, empathy levels decline with more exposure to patients in the final year of the study (Sherman and Cramer., 2005).

There can be numerous factors of decline in empathy among students in their final year. The study on the decline of empathy levels among dental students in Latin America shows variability in behavior as far as empathy is concerned (Tayyab et al., 2022). They explained that empathic erosion, which is a decline in empathy levels in clinical years, is a fact but it's not the only reason (Díaz-Narváez et al., 2017). As we see in our study that

only in the 3rd year the empathy scores are highest. It can be seen that students start working in the clinics with enthusiasm but with the passage of time and the burden of studies, quotas, and exams, their empathy levels show a major decline in the final year.

It is still unpredictable to say that empathy decreases or increases with time (Javed et al., 2023). However, Quince et al in their study observed that there were very less or no changes in cognitive or affective empathy according to research (Quince et al., 2011). This differs from our scores as we observed a decrease in empathy in final year students as compared to 3rd year which was the highest among all the years.

Empathy is an important part of the everyday work of a healthcare professional whether it be a student or a clinician (Sajjad., 2021). But it is most of the time absent from the routine practice. Empathy should be more incorporated into our daily practices. There should be proper orientation about empathy with the regular curriculum development. Acharya suggested that empathy should be included in the early years of dental schools' curriculum so that students grow it inside them as they mature (Acharya et al., 2020).

Empathy includes a vast and complex range of emotions that overall describes a human being. Being empathetic is one of the major traits that can be possessed by a person. Overall, we can see that females are more empathetic than males. They are usually more considerate, affectionate, and sympathetic. Also, it is observed that students are empathetic in the early years of medical school. We found out that empathy is highest in the 3rd year which is the foundation year for clinical studies but lowest in the final year of BDS. So, it is important to know the strengths and weaknesses of students and implementation of different workshops, lectures, and seminars regarding empathy, especially in the final year of training. There should also be a student counselor on campus available for student counseling and other issues.

CONCLUSION

Students should be observed regarding their attitudes and actions so that decline in empathy can be observed. According to our study, the empathy levels are highest among 3rd year students as they are more enthusiastic to work with patients. Also it is observed that females are more empathetic as compared to males. Being a healthcare professional, it is more important to be empathetic and sympathetic towards each other and patients for the betterment of society.

LIMITATIONS OF STUDY

This study was conducted in a single place, therefore it cannot identify the problems that other institutes and students may be experiencing. It is tricky to generalize. To get more precise findings, more investigations on a wide spectrum should be carried out.

FUTURE CONSIDERATIONS

More studies should be conducted in Pakistan regarding the empathetic behavior of dental students and graduates and

how there is a difference in the work approach of a person who studied empathy throughout his academic years and the one who does not. For that, it is also the need of the hour to incorporate different methods to teach empathy and make it a part of the academic curriculum.

DECLARATION OF INTEREST

The authors declare no conflict of interest.

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AUTHOR'S CONTRIBUTION

1. **F.A:** Created concept and design of the research, prepared initial draft, collected data, interpreted the results and generated discussion and conclusion.

2. **H.A:** Critical review and addition of important content.