

Measuring Empathy Towards Patients among Dental Under Graduate Students of Bangalore City-A Cross Sectional Study

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ABSTRACT

Background: Researchers have described empathy as a cognitive attribute, which means it predominantly involves understanding another person's concerns. It has also been described as an affective or emotional characteristic, which implies that it primarily involves feeling another person's pain and suffering. Because empathic patient interactions by dentists are associated with improved patient outcomes, self-reported declines in empathy during dental student training are a concern.

Aim: To measure empathy levels among 3rd year, 4th year undergraduate students and interns studying in dental colleges of Bangalore city and to investigate the differences in empathy scores based on gender and year of dental training.

Methodology: A cross sectional descriptive research was undertaken among 800 dental students (3rd year, final year and interns) to measure the empathy levels using Jefferson Scale of Physician Empathy-Health Professionals Version (JSPE-HP) questionnaire containing 20 items answered on a 5-point Likert scale (strongly agree, agree, neutral, disagree and strongly disagree). The data was analyzed using SPSS 21.

Results: Out of 800(100%) dental students, 300 (37.5%) were males and 500 (62.5%) were females with the mean age of males and females 22.93 ± 1.72 and 21.87 ± 1.28 respectively. The mean empathy scores with respect to age was more for 21-22 yrs whereas based on gender, empathy scores were more for males and there was not much difference found with the empathy scores with respect to fourth year students and interns.

Conclusion: This cross-sectional study explored differences in empathy among dental student groups in the context of existing evidence that empathy declines as students progress through dental course.

Key words: Dental, Empathy, Patients, Students, Under-graduates.

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INTRODUCTION

Professionalism encompasses the appropriate attitudes, values and behaviours needed for a practicing dentist. The most important attributes for professionalism, as determined by health professionals, are competence, respect and empathy.¹ Empathy itself, however, is a difficult and complex concept to define. It can be considered a state, trait or 'multistage interpersonal process'.²

Researchers have described empathy as a cognitive attribute, which means it predominantly involves understanding another person's concerns. Another group of researchers have viewed empathy as both affective and cognitive, whereas in health care field it has been linked to ideas of compassion, thoughtfulness, attentiveness, and caring attitude. These culminate into a desirable type of "chair side manner" that generates understanding and produces positive rapport with patients.²⁻⁴

One of the challenges in measuring empathy among health care professionals is the abundant descriptions

of empathy from the various domains of psychology and neuroscience. Although many formal descriptions of empathy exist, a concise agreed-upon definition of empathy is still lacking.⁵

Medical research has shown that the use of a "warm, empathic style" by physicians during communications with patients is associated with improved treatment outcomes such as increased compliance with medical recommendations, decreased pain, and reduced recovery time, as well as increased patient satisfaction and decreased medical litigation. The literature in dentistry reflects similar trends as those noted in medical practice. Specifically, the demonstration of empathy by dentists has been correlated with decreased dental fear, increased compliance with orthodontic treatment, improved treatment success and cooperation in pediatric patients, improved treatment outcomes in myofascial pain, and increased patient satisfaction.^{6,7}

There are numerous methods to assess empathy: self-ratings, patient ratings, peer ratings, psychometric tests and observation of behaviours, all of

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which have their advantages and disadvantages. Among these, the Jefferson scale of physician empathy has been found to be valid and reliable in assessing empathy among dental students.^{2,3,8,9}

Most of the studies reveal that there is a decrease in empathy as the students progress in their academics. However there are very few studies assessing empathy among dental students. In dentistry, for Under Graduate students, patient exposure happens only at the third year entry level. No study has been conducted among dental students in India, hence the present study was planned with an aim of assessing empathy levels among 3rd year, 4th year undergraduate students and interns of Bangalore city with objectives-to measure empathy levels among undergraduate students and interns studying in dental colleges of Bangalore city and to investigate the differences in empathy scores based on gender and year of dental training.

METHODOLOGY

A cross sectional descriptive research was undertaken in July to August 2013. The target population included 3rd, final year and internship students studying in Dental colleges of Bangalore city. List of the Dental colleges and number of students enrolled in Bangalore city were obtained from Rajiv Gandhi University of Health Sciences. www.rguhs.ac.in.¹⁰

A total of 16 dental colleges (1 Government and 15 Private) are there in Bangalore city which are affiliated to Rajiv Gandhi University of Health and Sciences, having approximately 3000 dental students belonging to 3rd, 4th year and internship during the tenure of this study. Out of 16 dental colleges, 9 dental colleges gave permission for conducting the study which comprised to 800 students.

Ethical Committee approval was obtained from the Institution Ethics Committee. Prior permission was obtained from the Head of the Institutions of the respective Dental colleges selected for conducting this study. Informed consent was obtained from the participants. In dentistry, for Under Graduate students, patient exposure happens only at the third year entry level, so Under Graduate students studying in 3rd yr, final yr and doing rotatory internship and were present on the day of study were included in the study.

A pilot study was conducted among 50 dental students to assess the comprehension of the questionnaire. Based on this, necessary modifications were done in the questionnaire which was later validated. The subjects of each college were made to assemble in a hall and the purpose of the study was described to them. The subjects were told to provide accurate answers and anonymity of response was assured. The subjects were given 30 minutes time to complete the self administered questionnaires. The questionnaires were later collected back. Data was coded and analyzed.

Data Collection Tool

With regard to empathy being independent variable, age of the students, gender and year of the study were taken as independent variables. The survey instrument consists of Jefferson Scale of Physician Empathy-Health Professionals Version (JSPE-HP) questionnaire containing 20 items answered on a 5-point Likert scale (strongly agree, agree, neutral, disagree and strongly agree). To control for "acquiescence" response style 10 items are positively worded and 10 items are negatively worded. The original questionnaire consisted of a 7 point Likert scale which was then modified to a 5 point Likert scale in the present study.¹¹

The questionnaire consisted of two parts:

- Four questions pertaining to the respondents' demographic details(name, age, gender, year of study).
- The second section of the questionnaire consisted 20 items to assess the levels of empathy.

Statistical Analysis

The data collected was entered into the computer (MS-Office, Excel 2007) and subjected to statistical analysis using the statistical package—SPSS version 21. Descriptive statistics with frequency, percentage, mean and standard deviation were taken. Statistical significance was considered at $p < 0.05$ (confidence interval of 95%). Unpaired t test, Mann Whitney U test and ANOVA were used to assess the difference in empathy levels among the students in relation to gender and year of study.

RESULTS

Out of 800 (100%) dental students, 300 (37.5%) were males and 500 (62.5%) were females with the mean age of males and females 22.93 ± 1.72 and 21.87 ± 1.28 respectively. Majority (49.75%) were in the age group of 21-22 years followed by 23-24 yrs-(34.13%); 19-20 yrs-(9.25%). Among them, 232 (29%) were in third year followed by 270 (33.75%) in final year and 298 (37.25%) were interns (Table 1).

The mean empathy scores with respect to age was more in the 21-22 yrs i.e., 70.54 ± 9.43 followed by 23-24 years i.e., 70.19 ± 9.23 . There was a Significant difference found in mean empathy scores between 19-20 yrs and 21-22 yrs ($p=0.03$) (Table 2). Based on gender, empathy scores were more for males (70.95 ± 69.48) (Table 3). With regard to comparison of the mean score of empathy with respect to year of study, significant difference was found between third year students (71.71 ± 99) and final year students (69.36 ± 9.08) ($p=0.012$) and also between third year students (71.71 ± 99) and interns(69.33 ± 8.54) ($p=0.008$) (Table 4).

DISCUSSION

The present study assessed the empathy levels among third year students, final year students and interns attached to dental colleges of Bangalore city. Empathy was taken as the topic of present study as it forms the backbone of doctor patient relationship and hence is very important quality that a health professional should possess.

According to Kulich *et al*, empathetic communication appears to be a particularly important, but under-provisioned in dental education.¹² In the present study, three batches of students (3rd, final, interns) were considered because these students come in contact with patients which is contrary to the study by A. Beattie³ where only first year students were part of study. In this study, the mean empathy score was more in the age group of 21-22 years (70.54) and for males (70.95) where as the mean score was 61.88 in pre-course in A. Beattie study but there was no statistical significant difference found.

The empathy scores were more in third year as compared to final year students and interns which shows that lack of training or education related to empathy in dental college will lead to the decline in empathy scores gradually. Empathy scores are more in the third year as it is the first time contact with patients. In line with our results, Sherman and Cramer found that empathy levels decreased in the second year of dental school, which in their cohort correlated with first patient contact.¹³ Empathy can be 'taught' by lectures, role-playing and interviewing skills, but what Hafferty describes as the informal curriculum can also have a significant impact.¹⁴

Given the importance of empathy to the dentist-patient relationship, one may ask whether empathy can be increased through training. Whilst some authors have found that dental and other health professional students can be taught methods to increase empathy² others have found that increases may be short-lived^{15,16} Still others have argued that empathy cannot be taught.¹⁷ Even then empathy should be considered an important element in patient care and a significant factor of overall physician competence that must be enhanced during dental education, and applied in the practice of dentistry.

Table 1: Distribution of the study subjects based on age and year of study

AGE GROUPS	AGE	Male N (%)	Females N (%)	Total N (%)	Chi-square = 112.86 p-value- 0.00**
	19-20 yrs	18 (24.32)	56 (75.68)	74 (9.25)	
	21-22 yrs	97 (24.37)	301 (75.63)	398 (49.75)	
	23-24 yrs	137 (50.18)	136 (49.82)	273 (34.13)	
	25-26 yrs	40 (90.91)	4 (9.09)	44 (5.50)	
	27+yrs	8 (72.73)	3 (27.27)	11 (1.38)	
YEAR OF STUDY	Third year	63 (27.16)	169 (72.84)	232 (29)	Chi-square = 30.38 p-value- 0.00**
	Final Year	90 (33.33)	180 (66.67)	270 (33.75)	
	Interns	147 (49.33)	151 (50.67)	298 (37.25)	
	Total	300 (37.5)	500 (62.5)	800 (100)	

** - Highly Significant.

Table 2: Comparison of mean empathy scores based on age

Age groups	19-20 yrs	21-22 yrs	23-24 yrs	25-26 yrs	27+yrs	ANOVA
Mean	67.16 ^a	70.54	70.19	69.84	67.55	F- value-2.34
S.D	9.15	9.43	9.23	6.54	8.10	p- value-0.05

a= Significant difference between 19-20 yrs and 21-22 yrs ($p=0.03$)
(Tukeys multiple post hoc).

Table 3: Comparison of mean empathy scores based on gender

Gender	Males	Females	
Mean	70.95	69.48	't' value- 2.2
S.D	9.22	9.18	p-value- 0.02 ⁺

Table 4: Comparison of mean empathy scores based on the year of study

Year of study	Third year	Final year	Interns	ANOVA
Mean	71.71	69.36 ^a	69.33 ^b	F- value-5.49
S.D	9.99	9.08	8.54	p- value- 0.004

a = Significant difference between third year and final year students ($p=0.012$)
b = Significant difference between third year students and interns ($p=0.008$)
(Tukeys multiple post hoc).

Limitations of the study are: comparisons were performed between different groups of students. The scores would have been more comparable had the same population been followed from 3rd year till they became interns. Socio-economic status was not considered due to the reasons that 15% students were NRI, previous dental experiences were not considered in the analysis. This would have had an impact on their empathy scores.

In conclusion, this cross-sectional study explored differences in empathy among dental students in the context of existing evidence that empathy declines as students progress through dental course. Observational studies to investigate dental students' attitudes, and the function of both teaching

and role models in the formation of these attitudes, warrant further research.

CONCLUSION

In conclusion, this cross-sectional study explored differences in empathy among dental students in the context of existing evidence that empathy declines as students progress through dental course. Observational studies to investigate dental students' attitudes, and the function of both teaching and role models in the formation of these attitudes, warrant further research.

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CONFLICT OF INTEREST

Authors declare no conflict of interest.

ABBREVIATION USED

Abbreviations are elaborated as and when they appear in the article.

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