

Original Article

Exploring the missing link – Empathy among dental students: An institutional cross-sectional survey

Vikram Pal Aggarwal¹, Robin Garg², Nikita Goyal¹, Puneet Kaur¹, Sakshi Singhal³, Nancy Singla², Deeksha Gijwani¹, Aditi Sharma¹

Departments of ¹Public Health Dentistry and ²Prosthodontics Including Crown and Bridge, Surendera Dental College and Research Institute, Sri Ganganagar, Rajasthan, ³Department of Conservative Dentistry and Endodontics, Institute of Dental Sciences, Bareilly, Uttar Pradesh, India

ABSTRACT

Background: Empathy plays an important role in healthy dentist and patient relationship. Hence, the aim of the study is to (a) to measure the self-reported empathy levels among dental undergraduate and postgraduate students. (b) To review the trend of changes in empathy level with experience, age, and gender among dental undergraduate and postgraduate students.

Materials and Methods: This cross-sectional, questionnaire-based study was carried out in two private dental institutions situated in Sri Ganganagar, India, with a sample size of 978. Data were obtained from the 1st to final year (BDS), interns, and postgraduate students from January to March 2015. An empathy level of students was assessed by the Jefferson Scale of Physician Empathy – Health Profession Students Version Questionnaire. An exploratory factor analysis using Kaiser’s criteria was undertaken to appraise the construct validity and dimensionality. Based on the results of the factor analysis, three factors were selected; labeled as “perspective taking,” “compassionate care,” and “standing in patient’s shoes.”

Results: The majority of the students was female in a equivalent ratio of 1338:618. There were significant differences in empathy scores by gender and age ($P < 0.01$). The lowest and highest mean empathy scores were found in postgraduate (mean = 108.77, standard deviation [SD] = 9.12) and 1st year (mean = 117.23, SD = 14.19) dental students, respectively.

Conclusion: Dental educators should consider the likely decline in empathy among students as early as possible and adopt communication teaching strategies to promote the development of empathy and reduce the risk of further decline.

Key Words: Dental, dentist, education, empathy, Surveys and Questionnaires

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Address for correspondence:
Dr. Vikram Pal Aggarwal,
Department of Public
Health Dentistry, Surendera
Dental College and Research
Institute, Sri Ganganagar,
Rajasthan, India.
E-mail: drvikramaggarwal@
yahoo.com

INTRODUCTION

A two-way process of exchanging or shaping ideas, feelings, and information between dentist and patient has created keen interest in dental society. The best way to achieve effectively exchanging and shaping ideas depend on the credibility of the dentist that is how he defines empathy practically.^[1] Empathy is

to see with the eyes of other, to hear with the ears of another, and to feel with the heart of another (Alfred Adler). Empathy was derived from two Greek terms, “em” and “pathos,” meaning “feeling into” and has its origin from the German word “Einführung.” It facilitates dental professionals to recognize patient’s

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concerns, feelings, and experiences.^[2,3] The basic difference between empathy and sympathy is that empathy means intellectual understanding,^[4,5] while sympathy means sharing sentiments.^[6] The American Dental Education Association always emphasized on including empathy as a part of the dental curriculum as it plays an important role in healthy dentist and patient relationship.^[7] Undergraduate medical students have shown a decline in empathy level during their graduation course.^[8] Sherman and Cramer^[1] reported a similar decline in empathy levels among the dental students during the 2nd year of dental training, but in contrary some studies^[1,9-11] reported vice-versa. In view of such varying empathy findings from different countries, it is the need of the hour to understand empathy levels among dental students in the Indian context. The present study is the first of its kind in India and few among the world to explore the empathy level among dental students.

Objectives

1. To measure the self-reported empathy levels among dental undergraduate and postgraduate students of the dental program (BDS, MDS)
2. To review the trend of changes in empathy level with experience, age, and gender among dental undergraduate and postgraduate students.

MATERIALS AND METHODS

A cross-sectional institutional and self-reporting questionnaire based study was conducted among students pursuing their graduation and postgraduation in two private dental institutions located in the North West part of the country, Rajasthan, India. The curriculum in India pertaining dental education offers 5 years course during graduation and 3 years of course during postgraduation. The present study was cleared by the Ethical Committee of the SDCRI and Maharaja Ganga Singh Dental College. This research has been conducted in full accordance with the World Medical Association Declaration of Helsinki. Data were obtained from the 1st to final (4th) year students, interns, and postgraduate students enrolled in Bachelor of Dental Surgery and Master of Dental Surgery Program, respectively, in these two institutions from January to April 2015. The students were briefly explained about the nature of the study, and their written consent was taken. They were assured of keeping the contents confidential. All performas were coded to avoid identification of the students by the authors. The inclusion criterion for the

present study was that students must have completed 6 months following admission. Those students who were either unable to provide the required information or incomplete questionnaire form were excluded. The initial sample consisted of 1041 students but after applying the inclusion and exclusion criteria, the final sample comprised 978 students.

Jefferson Scale of Physician Empathy^[6,12] - Health Profession Students (JSPE-HPS) version questionnaire (already validated) was administered to assess the empathy level. The questionnaire consists of twenty components using 7-point Likert scale (for every single component) and score ranges from 20 to 140 with upper values representing greater empathy. Along with JSPE-HPS questionnaire, sociodemographic data were obtained. Internal consistency was analyzed using coefficient alpha. There are four subcategories measuring different dimensions of empathy such as “perspective taking,” “compassionate care,” “standing in patient’s shoes,” and “personal distress.” Confirmatory factor analysis was used to recognize the dimensionality of the JSPE-HPS version using (a) Kaiser’s criteria,^[13,14] (b) an eigenvalue^[15-17] (>1.25 was used), and (c) only retaining items if coefficients were ≥ 0.30 .^[18] After evaluation of results, 3-factor pathway was selected, i.e., “perspective taking,” “compassionate care,” as well as “standing in patient’s shoes.” The above outcome resulted in approximately 37% of the overall described variance. Among the components, half had a positive response and half had a negative response.

Data so collected were tabulated in an Excel sheet under the guidance of statistician. Data were analyzed using the IBM SPSS. Statistics Windows, Version 20.0. (Armonk, NY: IBM Corp) for generation of descriptive, as well as inferential statistics. The statistical significant difference among groups was determined by the *t*-tests and ANOVA including *post hoc* tests.

RESULTS

Overall 978 students took part in this study having 309 males and 669 females. The female: male ratio in the present study was 2.7:1 [Table 1]. There was a statistically significant difference reported when empathy was tested in relation to gender (between males and females), as well as for age ($P < 0.05$). The lowest and highest mean empathy score was found in postgraduate (mean = 108.77, standard

Table 1: Different variables retorts on the Jefferson Scale of Physician Empathy health profession student's

Variables	n (%)	Mean (SD)	P
Gender			
Male	309 (31.60)	106.39 (10.97)	<0.001 [^]
Female	669 (68.40)	116.63 (14.81)	
Age (years)			
<20	327 (33.45)	110.17 (11.07)	0.03 [*]
20-24	532 (54.40)	112.71 (12.04)	
>25	119 (12.17)	107.30 (10.99)	
Year of study			
Year 1	183 (18.71)	117.23 (14.19)	0.001 [^]
Year 2	168 (17.18)	117.15 (14.08)	
Year 3	188 (19.22)	114.29 (13.36)	
Year 4	174 (17.79)	111.36 (11.88)	
Internship	152 (15.54)	110.45 (11.03)	
Postgraduation	113 (11.55)	108.77 (9.12)	

^{*}Statistically significant. SD: Standard deviation

deviation [SD] =9.12) and 1st year (mean = 117.23, SD = 14.19) dental students, respectively. Empathy score when tested according to experience using ANOVA and *post hoc* test was found to be statistically substantial ($P < 0.05$).

Ten components were computed on subscale-1 and components value arraying between 0.697 and 0.518 describing 22.85% of the variability. The most important component was “health-care providers’ understanding of the emotional status of the patients, as well as that of their families’. Five components were computed on subscale-2 and components value arraying between 0.207 and 0.023 describing 10.18% of the variability. Most important component was “I believe that emotion has no place in the treatment of medical illness.” Five components were computed on subscale-3 and components value arraying between - 0.572 and - 0.327 describing 9.34% of the variability. Two components were common among subscale 2 and subscale 3, i.e., component 14 (“I believe that emotion has no place in the treatment of medical illness”) and component 11 (“patients’ illnesses can be cured only by targeted treatment; therefore, health-care providers’ emotional ties with their patients do not have a significant influence in treatment outcomes”). The required Cronbach’s alpha value for satisfactory internal consistency should be above 0.70 and in the present study Cronbach’s value for subscale 1, 2, and 3 were 0.79, 0.76, and 0.48, respectively [Table 2].

Few components brought out eminent mean values: “Patients feel better when their health-care providers understand their feelings” (mean = 5.93, SD = 1.17),

whereas component, “I believe that empathy is an important factor in patients’ treatment” brought out a mean value of 5.27 (SD = 1.31). Results of all the components are fully elaborated in Table 2.

DISCUSSION

The aim of the contemporary study was to define the properties of JSE-HPS, as well as to measure the empathy among students of dental colleges in Sri Ganganagar, Rajasthan, India. The present study reported that postgraduate students had statistically lower empathy score as compared to all other years of students. This difference may be due to the fact that during the initiation of the dental course, students believe in idealism, i.e., sharing the feeling of the patients but with the progression of the dental course these feelings vanish, i.e., idealism gives way to the realization (means to get through the various level of dental degree meritoriously, requisite is to acquire enormous dimensions of facts). Hence, significant perspectives such as sharing the thoughts and feelings of the patients are put aside and emphasis swings on facts-based examinations. The mean empathy score of the present study ranges from 103 to 117 which is similar with the other studies among dental^[1] and medical students,^[11,19-22] while in contrary, other studies^[23,24] reported 78–90 mean empathy score.

While analyzing the empathy among male and female in the present study, females showed higher empathy level than males which is similar with the other studies,^[1,6,9,10] but this was against the studies done by Rose *et al.*^[25] and Babar *et al.*^[3] This might be due to the fact that women’s brains probably show more empathy than men’s brains. When females were probed to recognize other human’s feeling, female’s brain action showed that they themselves feel the same sentiments as well while in contrary male’s brain action showed noetic assessment – a more objective position.^[26] In the present study, it was found that empathy score differs by age while the same was not reported by Babar *et al.*^[3]

Subscale-1, 2, and 3 are parallel with the studies described previously.^[27-29] As empathy is an essential component of maintaining healthy rapport between the dentist and patient,^[30] thus amending empathy is the vital chore of health training.^[30]

Recently, Bonvicini *et al.*^[31] conducted a study regarding communication skills exercise to find whether it will result in rise of the empathy level

Table 2: Component analyses and adjusted score correlations of the Jefferson Scale of Physician Empathy health profession student's

Components	Rotated factors coefficients			Mean (SD)
	Subscale 1	Subscale 2	Subscale 3	
Q16. Health-care professionals' understanding of the sensitive position of their patients and that of their families is one significant factor of the health-care professional – patient rapport	0.697			5.13 (1.61)
Q4. Understanding body language is as significant as verbal communication in health-care professional – patient rapport	0.686			4.27 (1.29)
Q2. Patients feel good when their health-care professional understands their frame of mind	0.681			5.93 (1.17)
Q9. Health-care professional should try to stand in their patients' shoes when providing care to them	0.654			5.41 (1.01)
Q17. Health-care professional should try to think similar to their patients to render better care	0.613			5.28 (1.83)
Q13. Health-care professional should try to understand what is going on in their patients' minds by paying attention to their nonverbal cues and body language	0.592			4.99 (1.48)
Q10. Patients value a health-care professional understanding of their feelings which is therapeutic in its own right	0.576			6.08 (1.91)
Q5. A health-care professional sense of humor contributes to a better clinical result	0.565			4.76 (1.84)
Q20. I believe that empathy is a vital factor in patients' treatment	0.539			5.27 (1.31)
Q15. Empathy is a therapeutic skill without which a health-care professional success is limited	0.518			4.87 (1.93)
Q18. Health-care professional should not allow themselves to be influenced by strong personal bonds between their patients and their family members			-0.572	4.47 (1.14)
Q14. I believe that a sentiment has no place in the treatment of medical disease		0.207	-0.524	4.81 (1.58)
Q11. Patients' diseases can be cured only by targeted treatment; therefore, health-care professional emotional ties with their patients do not have an important influence in treatment results		0.198	-0.498	5.19 (1.61)
Q12. Asking patients about what is going on in their personal lives is not helpful in understanding their physical complaints			-0.483	5.07 (1.42)
Q7. Attention to patients' emotions is not important in patient interview			-0.455	6.17 (1.64)
Q8. Attentiveness to patients' personal experiences does not influence treatment outcomes			-0.368	5.54 (1.32)
Q19. I do not enjoy reading nonmedical literature or the arts		0.131		5.39 (1.72)
Q1. Health-care professional understanding of their patients' feelings and the feelings of their patients' families do not affect treatment outcomes			-0.327	5.79 (1.14)
Q3. It is difficult for a health-care professional to view things from patients' perspectives		0.120		6.03 (1.19)
Q6. Because people are unlike, it is difficult to see things from patients' perspectives		0.023		4.38 (1.32)
Cronbach's alpha	0.79	0.76	0.48	

SD: Standard deviation

or not. The conclusion of the study was that communication skill exercise led to increase in empathy among the students. The present study showed that empathy levels were dropping with the progression of dental course. Therefore, the need is to introduce exercise regarding empathy among dental students at the initiation of and during their dental course. However, there is an argument regarding the introduction of training in empathy as Newton *et al.*^[32] doubts whether student's empathy will rise during their graduation course. The author proposes to introduce administrative modifications which motivate students scholastically and sensitively during their dental course. This will result in interprofessional education, growth of team effort principle, as well as alterations in judgment method.

The author has taken a maximum sample for the present study. Hence, results of the present study can be implemented among other dental institutions also. The limitation of the present study is that valuation of empathy was constructed on subjective evaluation of a validated questionnaire; therefore, observational approaches such as the history-taking rating scale could be used with JSE-HPS to measure empathy level in dental students. Cross-sectional studies make it impossible to understand the process of changes in empathy level through the years of dental course.

CONCLUSION

The present study showed year-wise fall in empathy among dental students. Dental health educators should

consider this fall in empathy seriously as early as possible during the dental course. Empathy-related teaching exercises must be implemented among the dental students to endorse the growth of empathy so that fall in empathy should be prevented. More longitudinal research is required to investigate the outcome of communication exercise in cultivating empathy among dental students.

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Conflicts of interest

The authors of this manuscript declare that they have no conflicts of interest, real or perceived, financial or nonfinancial in this article.

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