Comparison of Self-Reported Empathy Levels among Dental Undergraduate Students in Northern India: A Questionnaire-Based Cross-Sectional Study

Abstract

Context: Empathy is one of the fundamentals of communication relevant within the practice of dentistry, and the research is limited in this field. Aims: The present study was conducted to assess the self-reported empathy levels among dental undergraduate students in Lucknow city of Northern India.

Settings and Design: A descriptive cross-sectional study was conducted among three dental colleges of Lucknow city during July 2019–September 2019. Subjects and Methods: E-survey link was circulated among 790 students through e-mails. It has two parts. The first part included sociodemographic information, wherein the second part, the empathy level of students was assessed using the Jefferson Scale of Physician Empathy-Health Profession Students Version Questionnaire. The possible score range is 20–140: the higher the mean score, the higher the self-reported empathy level. Statistical Analysis Used: The data collected were analyzed using SPSS software version 24. Chi-square test was used to test gender distribution differences among different years. One-way analysis of variance including post hoc tests was used to compare the differences between study variables.

Results: The mean ± standard deviation empathy score was 92.55 ± 11.85, 91.85 ± 12.23, 93.25 ± 11.24, 93.37 ± 12.31, and 88.34 ± 12.01 among the first-year, second-year, third-year, final-year, and interns’ students, respectively, with a statistically significant difference.

Conclusion: It can be concluded from the results of the present study that the mean empathy score was highest among final-year students which is suggestive of the impact of education in behavioral sciences.

Keywords: Communication, dental education, dental students, empathy, Jefferson Scale of Physician Empathy-Health Profession Students

Introduction

Empathy being the key component of effective communication between the health-care provider and patient is receiving increasing attention in a dental fraternity, as it enables them to identify and understand patient’s experiences, concerns, and perspectives. It not only helps capture the patient’s past medical history and transmit information but also has a therapeutic effect and supports the patient’s healing process. It has shown to have a positive effect on psychosocial outcomes (e.g., fear, quality of life, anxiety, and depression) and on objectively measurable outcome parameters (e.g., symptom and pain reduction and reduced recovery time). Many people get confused between the words empathy and sympathy, as both involve sharing, but the concept of empathy lies in standing in patient’s/other’s shoes, whereas sympathy involves listening and feeling bad for the situation. A decline in empathy level was reported by the undergraduate medical and dental students as they progress through their professional education. In contrast, there were some studies that found senior students as being significantly more empathetic than junior students. In view of such varying empathy findings from different countries, we need to understand empathy levels among dental students in the Indian context.

Subjects and Methods

A descriptive cross-sectional study in the form of e-survey (Google Forms) was conducted among three dental colleges of Lucknow selected randomly through a lottery method among five dental colleges in Lucknow. This study received approval.
from the Institutional Ethical Committee. Data were obtained from the first- to final (fourth)-year students and interns enrolled in bachelor of dental surgery during the study period (July 2019–September 2019). The students were preinformed about the purpose of the study and consent was obtained. Assurance regarding the contents being kept confidential was given.

All forms were preceded to avoid the bias of any nature. Students who gave consent and had completed 6 months following BDS admission were included in the study, whereas those who did not give consent and provided incomplete information were excluded from the study. The initial sample consisted of 868 students but after applying the inclusion and exclusion criteria and after reminder e-mails, the final sample comprised 790 students.

The questionnaire consisted of two parts. The first part included sociodemographic information, wherein the second part, the empathy level of students was assessed by the Jefferson Scale of Physician Empathy-Health Profession Students (JSPE-HPS) version questionnaire.[7] The psychometric properties of JSE-HPS scale have been reported as satisfactory and the construct validity of the scale had been examined previously.[9] Designed as a 20-item 7-point Likert scale (1 = strongly disagree to 7 = strongly agree), the JSPE-HPS version is designed to be completed without time constraints. The possible score ranges from minimum 20 through maximum 140; the higher the mean score, the higher the self-reported empathy level.

Statistical analysis was performed by SPSS version 24 (IBM, Armonk, NY, USA) for data storage, tabulation, and the generation of descriptive and inferential statistics. Chi-square test was used to compare gender distribution among the groups. Analysis of variance (ANOVA) was performed to test a hypothesis concerning more than two groups, but it does not provide any deeper insights into patterns or comparisons between specific groups. Therefore, Tukey’s honestly significant difference (HSD) post hoc test was done to compare the means empathy score of students studying in different years with each other. The results were considered statistically significant if \( P < 0.05 \).

**Results**

The present study comprised 790 subjects, of which 22.5% (178) were male and 77.5% (612) were female. Students studying in BDS first, second, third, and final year were 134, 131, 145, and 224, respectively. When student’s distribution was according to gender among different BDS grades, it was found to be statistically insignificant [Table 1].

The mean ± standard deviation empathy scores were 92.55 ± 11.85, 91.85 ± 12.23, 93.25 ± 11.24, 93.37 ± 12.31, and 88.34 ± 12.01 among the first-year, second-year, third-year, final-year students, and interns, respectively. When the mean empathy score was compared statistically using ANOVA test among different BDS grades, it was found to be statistically significant with \( P < 0.05 \). Tukey HSD post hoc test revealed statistically significant difference between the first-year students and interns, second-year students and interns, third-year students and interns, and final-year students and interns [Table 2].

**Discussion**

Empathy is the capability to view things from another person’s perspective.[12,13] Empathy was derived from two Greek terms, “em” and “pathos”, meaning “feeling into” and has its origin from the German word “Einfühlung.”[14] In

| BDS (years) | Gender | Total, n (%) |
|-------------|--------|--------------|
| 1<sup>st</sup> | Males, n (%) | Females, n (%) |
| 1<sup>st</sup> | 27 (20.1) | 107 (79.9) | 134 (100.0) |
| 2<sup>nd</sup> | 27 (20.6) | 104 (79.4) | 131 (100.0) |
| 3<sup>rd</sup> | 42 (29.0) | 103 (71.0) | 145 (100.0) |
| 4<sup>th</sup> | 48 (21.4) | 176 (78.6) | 224 (100.0) |
| 5<sup>th</sup> (interns) | 34 (21.8) | 122 (78.2) | 156 (100.0) |
| Total | 178 (22.5) | 612 (77.5) | 790 (100.0) |

Table 1: Chi-square analysis for gender distribution among the study subjects

| BDS (year), mean±SD | Mean empathy score | Df | CI |
|---------------------|-------------------|----|----|
| 1<sup>st</sup> | 92.55±11.85 | 4 | −1.938-5.9891 |
| 2<sup>nd</sup> | 91.85±12.23 | 4 | −2.752-4.3927 |
| 3<sup>rd</sup> | 93.25±11.24 | 4 | −2.078-5.1182 |
| 4<sup>th</sup> | 93.37±12.31 | 4 | −4.719-3.3194 |
| 5<sup>th</sup> (interns) | 88.34±12.01 | 4 | −8.683-−1.1363 |
| Total | 91.96±12.09 | 4 | −8.4414-1.6186 |

Table 2: Analysis of variance and Tukey’s honest significant difference post hoc test to compare the means empathy score of students studying in different years with each other

DF: Degree of freedom; CI: Confidence interval; SD: Standard deviation; HS: Highly significant; S: Significant; NS: Not significant; HSD: Honest significant difference
relation to patient care, empathy is defined as a cognitive attribute that involves an ability to understand the patient’s apprehension, pain, suffering, and viewpoint, combined with a capability to communicate this understanding and an intention to help.\(^{[15]}\)

Due to its crucial role in good dentist–patient relationship, the American Dental Education Association listed empathy as the second most important clinical competency for dental training.\(^{[1]}\)

With this background in mind, the primary objective of this study was to assess the empathy level among the undergraduate students of three dental colleges of Lucknow, India. The present study showed that final-year dental students had statistically higher mean empathy scores than all other classes of students.

The mean empathy score of the present study ranges from 88.34 to 93.37 which is in accordance with the study done by Díaz Narváez VP et al.\(^{[16]}\) The probable reason for the same could be that initially when students join the dental school, they are not aware of their responsibilities. Gradually, when they come in contact with the patients, they develop empathy. Furthermore, the rise in final-year students was attributed to lectures, role-playing, or communication skills completed recently in their classes as per the study by Prabhu et al.\(^{[17]}\) An early analytical exposure to behavioral sciences and clinical encounter has shown to increase in empathy levels before and after the intervention. Furthermore, final-year students start their internship sooner where they are worried about their career and start focusing on practice skills and management. In any case, these data suggest that education in behavioral science may be effective.

Following similar reasons of increase in empathy, Sherman and Cramer found the highest mean empathy score among the first-year dental students, as their curriculum had focused on sociology and behavioral science with courses in communication skills, cultural competence, and history taking.\(^{[1]}\) Furthermore, the use of nonverbal behaviors (e.g., nodding consent, eye contact, and body posture) and verbal behaviors such as reflection, validation, support, partnership, and respect that are demonstrative of empathetic communication were emphasized. In a systematic review on a decline in empathy levels of dental students by Narang et al.,\(^{[18]}\) three studies showed that the mean empathy scores were found to be minimum among third-year students,\(^{[1,17,19]}\) while another set of two studies reported it to be minimum among final-year dental students\(^{[20,21]}\) and also few reported to be lower among interns.\(^{[17,22,23]}\) Empathy appears to drop when the patient contact increases. One of the probable reasons for low levels of empathy may reflect the stressful teaching style at various academic institutions which include long working hours and a lack of sleep. Less chairside communication with the patient, not listening to them patiently, and just trying to complete clinical quota in time may also lead to a decrease in empathy. Students being away from home and feeling the pressure and tough competition could negatively affect feelings of compassion.

Another possible explanation for the observed decrease in empathy among dental students is the sense of privilege or advantage they feel during training and believe that patients would regard them as God and comply with all instructions. In reality, when students begin working with patients, they realize that patients are not always willing to change their high-risk behaviors in the face of adverse health outcomes. This noncompliance may make it more difficult to feel empathy toward patients who do not or will not implement the student’s well-meaning, and often necessary, advice.

The feeling of empathy not only enhances the patient and practice management skills but also improves the students’ interpersonal communication skills and understanding of people around them. Since JSE-HPS assessment of empathy level is self-report measures and not on the actual behaviors, observational methods such as the History-taking Rating Scale could be used along to measure empathy level in dental students. Baseline assessment or changes in levels across all undergraduate dental years could not be done as the study was cross-sectional in design. Therefore, longitudinal studies are recommended. There has been inadequate amount of attention paid to the training on empathy development in dental education, leading to a lack of knowledge on how dental education may modulate empathy. Further research is needed to examine this hypothesis.

Empathy plays an important role in achieving patient centeredness. This article observed that education in behavioral sciences through the undergraduate years may be effective in increasing self-reported empathy and further training may be necessary to maintain high levels.

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**Conflicts of interest**

There are no conflicts of interest.

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