Attitudes of Postgraduate Orthodontic Students in India Towards Patient-Centered Care


Abstract: The aim of our study was to assess the attitudes of postgraduate orthodontic students in India towards patient-centered care. Two hundred and two students from eighteen dental schools across India completed the modified Patient-Practitioner Orientation Scale (PPOS), a self-administered eighteen-item questionnaire that evaluates the practice orientation of the students in terms of doctor versus patient-centeredness. The results revealed that the attitudes of the orthodontic postgraduate students in India were generally more doctor-centered (mean PPOS score of 3.38). As compared to their male counterparts, the female students were more considerate of the role of psychosocial factors in health and the importance of warm doctor-patient relationships (mean caring subscale score of 3.8 vs. 3.54, p<0.05). The third-year students were relatively more patient-centered than their first-year colleagues (mean PPOS score of 3.56 vs. 3.27, p<0.05) and were more willing to share power and information with their patients (mean sharing score of 3.24 vs. 2.92, p<0.01). In general, the students became more patient-centered as they progressed through their postgraduate course. The results of the study clearly imply the need for more active measures in order to develop a more patient-centered orthodontic health care system in India.

Dr. Madhan is Professor of Orthodontics and Orofacial Orthopedics, Sibar Institute of Dental Sciences, Guntur, India; Dr. Rajpurohit is a Postgraduate Student in Orthodontics and Dentofacial Orthopedics, Jaipur Dental College, Jaipur, India; and Dr. Gayathri is a Postgraduate Student in Periodontics and Implant Dentistry, TamilNadu Government Dental College and Hospital, Chennai, India. Direct correspondence and requests for reprints to Dr. Balasubramanian Madhan, No. 4, Flat F-3, II Main Road, Sri Iyappa Nagar (Koyambedu), Chennai 600092, India; 91-44-24793286 phone; madhanb@hotmail.com.

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Traditionally, the type of health care provided by medical and dental practitioners in general and orthodontists in particular has predominantly been doctor-centered.1-3 In this disease-oriented or paternalistic model of doctor-patient relationship, the doctor is in absolute control of the situation, and the treatment is commenced “irrespective of the patient’s contribution and regardless of the outcome.”1 The patient is viewed as a helpless individual unable to comprehend the problem or decide the best for him or her. Patients are expected to accept the diagnosis, comply unconditionally with the doctor’s orders in the treatment regime, and be reprimanded if they fail to be a “good patient.”4

However, the early 1970s saw a paradigm shift towards patient-centered care (PCC), and the concept has attracted increasing emphasis in recent years.5-10 This egalitarian approach stresses, on the part of the health professional, attention to patients’ psychosocial (as well as physical) needs, the use of psychotherapeutic behaviors to convey a sense of partnership and positive regard, and active facilitation of patients’ involvement in decision making about their care.11 Mead and Bower12 described five distinct dimensions of patient-centered care: 1) the biopsychosocial perspective on illness that includes consideration of biomedical, social, and psychological factors; 2) the patient-as-person, understanding the personal meaning of the illness for each individual patient; 3) sharing power and responsibility, sensitivity to patients’ preferences for information and shared decision making, and responding appropriately to these; 4) a therapeutic alliance, developing common therapeutic goals and enhancing the personal bond between doctor and patient; and 5) the doctor-as-person, aware of the influence of personal qualities and the subjectivity of the doctor in the practice of medicine.
The extent of patient-centeredness in a health care system is a result of a complex interaction between patient and practitioner-related personal factors, influences from the professional world of the practitioner, the consultation environment during the interaction, cultural norms, and societal expectations.\textsuperscript{12-14} The practitioner-related factors influencing patient-centeredness in a particular patient-practitioner interaction include the practitioner’s attitudes, values, knowledge, personality, gender, age, ethnicity, and knowledge about the patient.\textsuperscript{12-14}

Orthodontic practice in the Indian subcontinent is no exception to these concepts, and the need to shift to patient-centered orthodontic care is being increasingly stressed. The most effective way of inducing this positive change is to start with the prospective professionals, i.e., the postgraduate students. As it is obligatory to first know the existing state of affairs and as the literature in this regard is acutely deficient, the current survey was conducted with the following objectives: to assess the practice orientation of postgraduate orthodontic students in India in terms of doctor vs. patient-centeredness, and to analyze the influence of gender and year of study on students’ practice orientation.

### Material and Methods

The doctor/patient-centered orientation of postgraduate students in India was quantitatively assessed with a modified Patient-Practitioner Orientation Scale (PPOS, Table 1). The original PPOS\textsuperscript{15-17} is a self-administered paper-pencil instrument that contains eighteen statements regarding various aspects of doctor-patient relationship and communication. The responder expresses his or her level of agreement with each item on a six-point Likert scale from strongly agree to strongly disagree. Most of the items are expressed in doctor-centered terms and hence scored directly from 1 to 6, while items 9, 13, and 17 are patient-centered statements and hence are scored in reverse. The scale has two subscales of nine items each. The “sharing” subscale contains nine statements (items 1, 4, 5, 8, 9, 10, 12, 15, and 18) describing the extent to which the respondent believes that the patient should receive information and be involved in decision making. The rest of the items constitute the “caring” subscale, which rates the extent to which the patient’s expectations, feelings, and lifestyle are considered important in the treatment process. To adapt the instrument for the orthodontic practice, the following changes were made to the original instrument. Item 3, which reads “The most important part of the standard medical visit is the physical examination,” was rephrased as “The most important part of the standard orthodontic visit is the clinical work on the patient.” In item 4 the word “medical” was substituted with “dental,” and in item 16, the word “illness” was replaced by “dental condition.” The final instrument as used in the study is shown in Table 1.

The master of dental surgery (M.D.S.) course leading to specialist status in orthodontics and dentofacial orthopedics in India is a three-year, full-time course with English as the medium of instruction. A total of 240 students who pursued postgraduate study in the subject in eighteen dental schools across six states in India were considered for the study. Copies of the PPOS along with a covering letter (explaining the purpose of the survey, instructions, and declaration of confidentiality) were mailed to the students during the last week of October 2009. Also, a written communication was addressed to the head of the department of these colleges, seeking permission and cooperation for the survey. No reminder letter was sent to any participant, and the decision of any student to participate in the survey was voluntary. A total of 202 usable completed forms that were returned before mid-December 2009 were included in the study.

The demographic details collected in the survey were age (in years), gender (male/female), and year of study (first-, second-, or third-year M.D.S.). The name of the participant and the institution of study were deliberately omitted for purposes of anonymity. As the participation was entirely voluntary and anonymous, ethical clearance was waived by the principal author’s Institutional Committee for Research and Ethics.

Data entry was done in Microsoft Excel 2010 (Microsoft Office Professional Plus 2010, Microsoft Corporation) and cross-verified by two independent operators. The summary statistics were calculated for each item, for the sharing and caring subscales, and for the PPOS as a whole. The D’Agostino and Pearson omnibus test was used to test the normality of distribution of the analyzed data. The two independent-samples Mann-Whitney U-test was used for gender-based comparisons. Differences based on the year of study were evaluated with Kruskal-Wallis one-way ANOVA followed by Dunn’s multiple com-
parisons post-hoc test. The α level for all the tests was kept at 0.05, and all the statistical analyses were performed in PRISM for Windows, Version 5.01 (GraphPad Software Inc., San Diego, CA).

Results

A return of 202 usable forms out of 240 participants considered for the study corresponds to a response rate of 84.16 percent. The age of the respondents ranged from twenty-four to thirty-six years (mean 26.18±2.07 years). The distribution of the sample according to gender and year of study is given in Table 2. The mean scores of individual items showed that an equal number of items (nine each) fell on the patient-centered and doctor-centered side (Table 1). But the overall PPOS mean of 3.38 signified that the practice orientation of the students fell slightly on the doctor-centered side (Table 2, Figure 1), and a similar result was evident for the sharing subscale also (3.11±0.65). However, the mean score for items in the caring subscale (3.65±0.88) indicated a more patient-centered attitude.

Analysis of the gender-based differences with the Mann-Whitney U-test (Table 2, Figure 1) revealed no statistically significant difference for the overall scale or for the sharing subscale. Nonetheless, females were more patient-centered than males in the caring subscale (3.80 vs. 3.54), and the difference was statistically significant at p<0.05. Kruskal-Wallis ANOVA to compare the data based on the year of study revealed that the third-year students were more patient-centered than first-year students in the whole scale (p<0.05) and in the sharing subscale (p<0.01). The differences for other comparisons were not statistically significant at p<0.05.

Discussion

Specialist dental practice worldwide is showing a favorable shift towards patient-centered care, and the emphasis on the adoption of this model is only

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The doctor is the one who should decide what gets talked about during a visit.</td>
<td>199</td>
<td>3.20</td>
<td>0.52</td>
<td>2.98–3.41</td>
</tr>
<tr>
<td>2</td>
<td>If health care is less personal these days, this is a small price to pay for medical advances.</td>
<td>191</td>
<td>3.19</td>
<td>1.65</td>
<td>2.95–3.42</td>
</tr>
<tr>
<td>3</td>
<td>The most important part of the standard orthodontic visit is the clinical work on the patient.</td>
<td>200</td>
<td>3.12</td>
<td>1.55</td>
<td>2.90–3.34</td>
</tr>
<tr>
<td>4</td>
<td>It is often best for patients if they do not have a full explanation of their dental condition.</td>
<td>193</td>
<td>4.45</td>
<td>1.66</td>
<td>4.21–4.69</td>
</tr>
<tr>
<td>5</td>
<td>Patients should rely on their doctors’ knowledge and not try to find out their conditions on their own.</td>
<td>200</td>
<td>2.92</td>
<td>1.66</td>
<td>2.68–3.15</td>
</tr>
<tr>
<td>6</td>
<td>When doctors ask a lot of questions about a patient’s background, they are prying too much into personal matters.</td>
<td>200</td>
<td>3.81</td>
<td>1.68</td>
<td>3.57–4.04</td>
</tr>
<tr>
<td>7</td>
<td>If doctors are truly good at diagnosis and treatment, the way they relate to patients is not that important.</td>
<td>197</td>
<td>3.83</td>
<td>1.64</td>
<td>3.60–4.06</td>
</tr>
<tr>
<td>8</td>
<td>Many patients continue asking questions even though they are not learning anything.</td>
<td>199</td>
<td>2.75</td>
<td>1.43</td>
<td>2.55–2.95</td>
</tr>
<tr>
<td>9</td>
<td>Patients should be treated as if they were partners with the doctor, equal in power and status.</td>
<td>202</td>
<td>3.61</td>
<td>1.77</td>
<td>3.36–3.85</td>
</tr>
<tr>
<td>10</td>
<td>Patients generally want reassurance rather than information about their health.</td>
<td>201</td>
<td>2.49</td>
<td>1.28</td>
<td>2.31–2.67</td>
</tr>
<tr>
<td>11</td>
<td>If a doctor mainly relies on being open and warm, the doctor will not have a lot of success.</td>
<td>199</td>
<td>3.75</td>
<td>1.93</td>
<td>3.48–4.02</td>
</tr>
<tr>
<td>12</td>
<td>When patients disagree with their doctor, this is a sign that the doctor does not have the patient's respect and trust.</td>
<td>198</td>
<td>4.33</td>
<td>1.52</td>
<td>4.12–4.57</td>
</tr>
<tr>
<td>13</td>
<td>A treatment plan cannot succeed if it is in conflict with a patient's lifestyle or values.</td>
<td>201</td>
<td>4.89</td>
<td>1.43</td>
<td>4.69–5.09</td>
</tr>
<tr>
<td>14</td>
<td>Most patients want to get in and out of the doctor's office as quickly as possible.</td>
<td>196</td>
<td>2.25</td>
<td>1.37</td>
<td>2.05–2.44</td>
</tr>
<tr>
<td>15</td>
<td>The patient must always be aware that the doctor is in charge.</td>
<td>197</td>
<td>2.17</td>
<td>1.37</td>
<td>1.98–2.37</td>
</tr>
<tr>
<td>16</td>
<td>It is not that important to know a patient's culture and background to treat the person's dental condition.</td>
<td>193</td>
<td>3.95</td>
<td>1.71</td>
<td>3.71–4.19</td>
</tr>
<tr>
<td>17</td>
<td>Humor is a major ingredient in the doctor's treatment of the patient.</td>
<td>202</td>
<td>4.88</td>
<td>1.52</td>
<td>4.67–5.09</td>
</tr>
<tr>
<td>18</td>
<td>When patients find out medical information on their own, this usually confuses more than it helps.</td>
<td>199</td>
<td>2.60</td>
<td>1.56</td>
<td>2.38–2.82</td>
</tr>
</tbody>
</table>

SD=Standard Deviation, CI=Confidence Interval of Mean
increasing.\(^6\)\(^-\)\(^9\)\(^,\)\(^18\)\(^-\)\(^22\) However, definite data regarding the attitudes of the dental professionals towards patient-centered care are very sparse, and to the best of our knowledge, this is the first study in the dental literature to quantitatively measure the doctor vs. patient-centered orientation of dental professionals.

Of the several instruments available for this purpose, the Patient-Practitioner Orientation Scale (PPOS) was chosen for the study due to the following advantages. It is a simple and self-administered pen and paper instrument; it has shown good reliability (\(\alpha=0.75\) to 0.88) and validity;\(^15\)\(^-\)\(^17\),\(^23\)\(^-\)\(^25\) it enables quantitative comparison of both doctor’s and patient’s attitude with a single instrument; it allows cross-comparisons across different populations; it covers many domains of patient-centered care; the translated

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Statistic</th>
<th>Overall</th>
<th>Male (n=112)</th>
<th>Female (n=90)</th>
<th>P</th>
<th>I Year (n=67)</th>
<th>II Year (n=75)</th>
<th>III Year (n=60)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPOS</td>
<td>Mean</td>
<td>3.38</td>
<td>3.32</td>
<td>3.46</td>
<td>NS</td>
<td>3.27</td>
<td>3.35</td>
<td>3.56</td>
<td>I vs. II: NS</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.63</td>
<td>0.64</td>
<td>0.61</td>
<td></td>
<td>0.49</td>
<td>0.73</td>
<td>0.61</td>
<td>I vs. III*</td>
</tr>
<tr>
<td>Sharing</td>
<td>Mean</td>
<td>3.11</td>
<td>3.10</td>
<td>3.12</td>
<td>NS</td>
<td>2.92</td>
<td>3.18</td>
<td>3.24</td>
<td>I vs. II: NS</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.65</td>
<td>0.67</td>
<td>0.62</td>
<td></td>
<td>0.46</td>
<td>0.81</td>
<td>0.55</td>
<td>I vs. III**</td>
</tr>
<tr>
<td>Caring</td>
<td>Mean</td>
<td>3.65</td>
<td>3.54</td>
<td>3.80</td>
<td>*</td>
<td>3.62</td>
<td>3.51</td>
<td>3.88</td>
<td>I vs. II: NS</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.88</td>
<td>0.85</td>
<td>0.90</td>
<td></td>
<td>0.75</td>
<td>0.91</td>
<td>0.95</td>
<td>I vs. III: NS</td>
</tr>
</tbody>
</table>

\(^{†}\)Mann-Whitney U-test
\(^‡\)Kruskal-Wallis one-way ANOVA
SD=Standard Deviation, CI=Confidence Interval of Mean, NS=Non-Significant
\(^*\)p<0.05, \(^**\)p<0.01

![Figure 1. Mean PPOS and subscale scores of the study sample](image-url)
and modified versions have performed equally well as compared to the original version;\textsuperscript{25-28} and it has been used widely in studies of a similar nature.

Out of the eighteen items in the PPOS, the mean score of nine items each fell on the doctor- and patient-centered sides respectively. The students were most patient-centered (4.89±1.43) for the statement “A treatment plan cannot succeed if it is in conflict with a patient’s lifestyle or values.” The lowest mean score (2.17±1.37) signifying most doctor-centered attitude was received for “The patient must always be aware that the doctor is in charge.” But more appropriate for our study are the inferences from the subscale and the overall PPOS scores rather than those of individual items. A mean score of 3.11 for the sharing subscale indicated that the students were less in favor of dispensing all the specialized information to the patient or empowering them to independently decide on the course of treatment. Described the other way, this reflected their attitude to remain in a higher position on the power equation with the patient. This attitude is consistent with the social norms in South Asian culture that tend to favor a more paternalistic approach in the doctor-patient relationship.\textsuperscript{29,30} This type of orientation may be acceptable in a medical emergency setting when the time required to get informed consent or involve the patient in decision making would clearly jeopardize the patient’s health.\textsuperscript{1} But it cannot be justified in orthodontics, in which the involved treatment procedures are elective and arise primarily from an aesthetic demand rather than a pathological condition or illness.

However, when it came to the caring subscale, the students in our study exhibited a more patient-centered attitude (3.65±0.88). This signified their acknowledgment of the role of psychosocial factors of the patient in deciding the nature of the treatment and the need for a warm doctor-patient relationship.

In general, the overall practice orientation of orthodontic postgraduate students in India fell on the doctor-centered side, as revealed by a mean PPOS score of 3.38 (3.5 being the cut-off). This has confirmed the general belief that Indian society has remained far more constant in its paternalistic approach than Western societies.\textsuperscript{29,30} The lack of any similar studies among dental predoctoral or postdoctoral students has left no opportunity for direct comparison of these results. Predoctoral medical students in the United States,\textsuperscript{16,31} Nepal,\textsuperscript{26} Sweden,\textsuperscript{27} Brazil,\textsuperscript{28} Singapore,\textsuperscript{24} and Egypt\textsuperscript{32} have shown a more patient-centered orientation than those in our study.

Gender has been demonstrated to be a significant factor influencing the practice orientation of the students. In our study, females were more patient-oriented than males only in the caring subscale (3.8 and 3.54 respectively). Female medical students in Nepal\textsuperscript{26} and Egypt\textsuperscript{32} have shown more patient-centered scores than males for the overall scale and the caring subscale, while those in Singapore\textsuperscript{24} have shown higher values for the overall scale and both the subscales as well. Such gender-based differences existed even among first-year medical students and were associated with their career choices.\textsuperscript{16} However, the clinical curricula and social environment in medical schools could exert a more powerful influence and can potentially overpower the influence of gender in the shaping of attitudes towards the doctor-patient relationship.\textsuperscript{32} In general, female students were more patient-centered than males all through the medical course.\textsuperscript{16,23,24,27,28,31,32} Even among physicians, females are reported to have a more patient-centered attitude and behavior than males.\textsuperscript{17} Females generally adopt a less dominant style of interaction, are more interpersonal and considerate of the psychosocial aspects of health, and are more inclusive of the patient in the decision making process than their male counterparts.\textsuperscript{13} This variance may be a result of the differences in their communication skills and style, perception of their patients, accommodative styles during the health care encounter, and the patients’ gender-role expectations of the physician.\textsuperscript{14,34,35}

Another significant result from our study is that the third-year M.D.S. students had a higher score for the sharing subscale than the first-year students, signifying that they were comparatively more willing to share power and information with their patients. A similar result was observed for the overall PPOS score also. Though the other yearwise comparisons were not statistically significant, there was a general increase in the overall and sharing subscale scores from the first to final year. Hence, it could be hypothesized that the patient-centeredness of the postgraduate students increased during their course of study and switched over from the doctor-centered to the patient-centered side towards the end of the course. An analogous trend was observed among medical students in Brazil.\textsuperscript{28} As far as the orthodontic curriculum in India is concerned, a considerable amount of the first year (around six to eight months) is spent on preclinical exercises, during which the student has minimal interaction with patients. On the contrary, clinical work is the utmost priority.

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during the second and third years, and the interaction with patients becomes inevitably more frequent and intense with every passing phase of treatment. This could probably be one reason for the patient-centeredness of students progressing through their M.D.S. coursework. In contrast to our study, attitudes of students in the later years of medical school have been found to be more doctor-centered than those of students in earlier years.\textsuperscript{31-33} The culture of medicine and the system of medical education, especially the powerful experiences of the clinical years as embodied in the informal or hidden curriculum, have been blamed for this change.\textsuperscript{35,39} But a recent study in Sweden has reported the absence of any decline in the patient-centeredness of students as they progress through the medical curriculum and attributed this favorable result to the ongoing societal shift towards patient-centered care.\textsuperscript{27}

The practice of patient-centered communication (PCC) has been shown to reduce communication problems, improve patients’ adherence to treatment prescriptions and regime, result in better treatment outcomes, increase patient satisfaction, and lead to greater enablement and lower use of resources by patients.\textsuperscript{3,5,6,17,20,40-42} Hence, there is enough justification, much beyond the conceptual validity, for advocating the practice of PCC in any field of medicine or dentistry.

Attitudes about an issue are important predisposing factors for related behavior, and inducing favorable attitudinal change is one of the effective methods of behavioral modification.\textsuperscript{49} It was from this perspective that our study was undertaken to understand the attitudes of orthodontic postgraduate students in India towards PCC. The results of the study clearly indicate that the concept of PCC has not been absorbed satisfactorily among these students and there is a need for more practical measures. Shaping the education system to be more patient-friendly, dedicating sufficient time in the curriculum to educate and sensitize the students in patient-centeredness, utilizing problem- or case-based learning with an emphasis on human ethics, and adopting a comprehensive care model of dental care delivery are some of the suggested means towards this end.\textsuperscript{6,18,19,44} Developing patient-centered communication skills in students through focused training programs is one of the essential strategies as communication has been emphasized as the royal pathway to patient-centered medicine.\textsuperscript{5,6,45} Special efforts should be directed toward attenuating the effects of the hidden curriculum that erode the inherent patient-centeredness of an individual. Dental educators should go beyond merely preaching and serve as practicing role models. Some areas in orthodontics where there is potential for developing a more patient-centered approach are communication, diagnosis and treatment planning, progress monitoring, and outcome evaluation.\textsuperscript{3,6,7,20,41,46,47} The espousal of patient-friendly treatment philosophies and techniques is the need of the hour and there is little doubt that the future mantra should be “patient-centered orthodontics.”\textsuperscript{48}

Conclusions

Some of the limitations of this study include the following: 1) the possibility that changes made to the original instrument could have affected the scale validity of the PPOS requires further evaluation; 2) attitudes do predispose an individual towards a particular behavior, but a multitude of coexisting predisposing and intervening variables often make their correlation very weak; hence, it is desirable to evaluate the congruency between the attitudes and the actual practice of PCC and the role of various intervening variables; 3) the limitations of a cross-sectional study should be borne in mind when analyzing the gender-based and year-wise comparisons made in the study; a longitudinal design would be more helpful in analyzing the stability of these attitudes over the coursework period; 4) India is a multicultural society with significant socioeconomic differences among various geographical regions; hence, the pooling of data from different regions of the country could have overshadowed regional differences; and 5) it was assumed that a five-year undergraduate program in dentistry with English as the primary language of instruction would have prepared all the students to a basic level of English proficiency required to understand the test instrument. Translating the instrument to the local languages would have reduced the misinterpretation problems but would have additionally introduced the necessity for cross-validation of all the different translations.

In conclusion, the following are the most significant findings of this study:

- The attitudes of postgraduate orthodontic students in India were in general more doctor-centered.
- As compared to their male counterparts, the female students were more particular about the
importance of psychosocial factors in health and the role of interpersonal factors in developing a warm doctor-patient relationship.

- The third-year students were more inclined to share power and information with their patients than those in the first year. Even in terms of overall orientation, they were more patient-centered than their first-year colleagues. In general, the patient-centeredness of the students increased as they progressed through their postgraduate course.

The results of the study clearly indicate that the concept of PCC is yet to take off in orthodontic health care in India and that there is an imperative need for more proactive measures in this regard.

Acknowledgments

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