

# Assessment of Personality Traits among Pediatric Dentists in India: A Cross-sectional Study

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## ABSTRACT

**Aim:** To identify the most common personality traits among pediatric dentists in India.

**Materials and methods:** A cross-sectional study was conducted using the Big Five personality test (BFPT). It included 50 questions based on five personality traits—extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience. The questionnaire was e-mailed and also sent through WhatsApp messages as a Google Form to all the pediatric dentists in India. Scoring for each trait was done based on the specific formula provided. The data were subjected to statistical analysis using Mann–Whitney *U* test.

**Results:** A total of 390 pediatric dentists responded and filled out the questionnaire. The agreeableness trait was the most commonly exhibited trait, followed by the conscientiousness trait. Emotional stability was the least exhibited trait. Emotional stability was statistically different between male and female pediatric dentists.

**Conclusion:** Agreeableness and emotional stability were the most and least expressed traits, respectively, among the participants. This survey showed that pediatric dentists in India could have a high tolerance and competent behavior.

**Clinical significance:** Dentists may possess unique personality traits that distinguish them from the general population. Within the dental profession, there could be variations in personality traits depending on the specialty they practice.

**Keywords:** Agreeableness, Big Five personality tests, Conscientiousness, Cross-sectional survey, Emotional stability, Extroversion, Openness to experience.

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## INTRODUCTION

A person's identity is determined by their stable set of traits, which are referred to as their personality. Colquitt et al. defined a person's personality traits as the internal structures and tendencies that explain their traits, cognitive processes, emotional responses, and behavioral patterns.<sup>1</sup> Every individual is different in his/her characteristics, feelings or behavior. Individuals can exhibit a variety of traits, such as shyness, nervousness, enthusiasm, carefulness, politeness or impoliteness, and quietness.<sup>2</sup>

Extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience are the five dimensions that make up the Big Five model of personality, which is one of the most popular models.<sup>3</sup>

Some personality qualities have been found to be associated with academic and clinical performance across the many stages of the educational experience, according to research on the personalities of medical students and other students in training programs for other health professions. Extroversion and agreeableness were the most frequently displayed characteristics in those students.<sup>4</sup> According to Fisher and McNulty, people with high levels of neuroticism frequently feel sorrow, rage, and self-dissatisfaction, which can lower their level of enjoyment in general.<sup>5</sup>

Dentistry is a unique profession because dentists must frequently manage their own businesses while concentrating primarily on patient care. Many dentists possess a wide range of personality traits that enable them to successfully run their practices while also working closely with their patients. It's possible that dentists have certain personality qualities that set them apart from the general public. To determine the personality

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types of dental students and dentists, numerous research has been conducted in the past. Extroversion, agreeableness, and emotional stability were shown to be strongly connected with male dental students, according to research by Goolsby et al., on the personality qualities of dental students in the United States of America.<sup>6</sup> Each specialty in the dentistry field may favor particular personality traits more than others. In a study by Al-Dlaigan et al., it was found that the seven clinical specializations in dentistry had different personality types of dentists. In their study, >50% of all specialists shared a personality type that combined introversion, feeling, thinking, and judgment.<sup>7</sup>

A good pediatric dentist needs to be multitalented in order to balance the art and science facets of pediatric dentistry. They have to establish not only communication with children and their parents but

also guide their behavior in the dental office. Needleman et al. studied the personality traits of pediatric dentists in the United States of America and found that they preferred sensing over intuition, feeling over thinking, judging over perceiving, and were almost equally divided between extroversion and introversion.<sup>8</sup> Literature search showed no studies on the personality traits of pediatric dentists in India. Hence, the goal of this study was to identify the most prevalent personality traits expressed by pediatric dentists in India.

## MATERIALS AND METHODS

The study protocol was analyzed and approved by the Institutional Review Board and Institutional Ethics Committee. This cross-sectional survey used the BFPT scale to assess the personality traits common in pediatric dentists in India. To achieve 95% power with 1%  $\alpha$ -error probability, a sample size of 336 was calculated. The list of pediatric dentists was obtained from the Indian Society of Pedodontics and Preventive Dentistry. Volunteers who were willing to fill out the form were selected. The questionnaire was e-mailed and also sent through WhatsApp messages to all the pediatric dentists using the "Google Form application" link. Periodic reminders were sent, and data collection continued till the estimated sample size was obtained. The snowball sampling method was also used to reach the sample size. A total of 390 participants submitted the form at the end of 2 months. Pediatric dentists working in private/government colleges, dental centers, hospitals, and university clinics were included in this study.

### Big Five Personality Test (BFPT)

According to Rossberger in 2014, the Five Factor model, as suggested by McCrae and Costa, is the most popular and widely accepted model for evaluating personality tests.<sup>9</sup> It was developed based on the 35 bipolar clusters of terms related to personality traits created by Cattell in 1943 and the traditional Myers-Briggs Type Indicator. An important trait—neuroticism, was included in this model. A brief explanation of the various characteristics of the model is mentioned below:

- Extroversion: It is the degree to which people interact with the outside world and feel joy and other good feelings.
- Agreeableness: It measures how much people value social harmony, cooperation, and virtues like honesty and decency.
- Conscientiousness: It describes the degree to which people value preparation, have the trait of perseverance, and are goal-oriented.
- Emotional stability: The extent to which individuals remain stable and balanced. They tend to be emotionally stable and calm and do not constantly experience negative feelings. The opposite of emotional stability is neuroticism or emotional

instability, where the individuals tend to overreact and are emotional.

- Openness to experience: The degree to which people display self-awareness, individualism, and intellectual curiosity.<sup>10,11</sup>

Facets are subdivisions within these five dimensions. Aspects of agreeableness include modesty, altruism, obedience, and trust. Aspects of extroversion include optimism, warmth, activity, and persuasiveness. Self-control, competence, and deliberateness are aspects of conscientiousness. Slow to rage, confidence, proper coping methods, and dependability are characteristics of emotional stability. Curiosity, the arts, being open-minded, and imagination are all aspects of openness.<sup>6</sup>

### Personality Trait Assessment

The validated BFPT questionnaire consisted of two sections. The first section contained demographic details, which included the age, gender, contact number, and e-mail address of the pediatric dentists. Additional information regarding the location, job description (private sector/govt sector), and field of interest (clinician/academician/both) were collected. The second section consisted of a 50-item questionnaire for personality assessment. The responses of all the participants were tabulated, and statistical analysis was done.

### Scoring

For each question on the BFPT questionnaire, responses were rated using the Likert scale. Respondents were instructed to choose the option that best reflected the level of their response. The choices ranged from "disagree" to "agree" and were scored as 1–5, where 1 = disagree, 2 = slightly disagree, 3 = neutral, 4 = slightly agree, and 5 = agree. The evaluation of the personality trait (E—extroversion, A—agreeableness, C—conscientiousness, ES—emotional stability, O—openness to experience) of an individual was done using the scoring criteria as shown in [Flowchart 1](#).

For each personality trait, the scores were calculated using the specific math string. The numbers in the parentheses correlate with the specific item number in the test. For example, "6" in the math string indicates the question number, and on the line that follows, the score of the person's choice for that question number is to be written. Each personality trait will have a score between 0 and 40. The obtained data were subjected to statistical analysis.

### Statistical Analysis

Statistical analysis was done using Statistical Package for the Social Sciences (SPSS) software (19.0, SPSS Inc., Chicago, Illinois, United States of America). Mann-Whitney *U* test was used to compare the samples' mean of each trait.

Flowchart 1: Big Five personality test (BFPT) scoring criteria

E =	20+	(1)	_____	-	(6)	_____	+	(11)	_____	-	(16)	_____	+	(21)	_____	-	(26)	_____	+	(31)	_____	-	(36)	_____	+	(41)	_____	-	(46)	_____	=	_____
A =	14-	(2)	_____	+	(7)	_____	-	(12)	_____	+	(17)	_____	-	(22)	_____	+	(27)	_____	-	(32)	_____	+	(37)	_____	+	(42)	_____	+	(47)	_____	=	_____
C =	14+	(3)	_____	-	(8)	_____	+	(13)	_____	-	(18)	_____	+	(23)	_____	-	(28)	_____	+	(33)	_____	-	(38)	_____	+	(43)	_____	+	(48)	_____	=	_____
ES =	38-	(4)	_____	+	(9)	_____	-	(14)	_____	+	(19)	_____	-	(24)	_____	-	(29)	_____	-	(34)	_____	-	(39)	_____	-	(44)	_____	-	(49)	_____	=	_____
O =	8+	(5)	_____	-	(10)	_____	+	(15)	_____	-	(20)	_____	+	(25)	_____	-	(30)	_____	+	(35)	_____	+	(40)	_____	+	(45)	_____	+	(50)	_____	=	_____



## RESULTS

A total of 390 pediatric dentists [159 males (41.3%) and 231 females (58.7%)] responded and submitted a completely filled questionnaire. Detailed descriptions of the demographic characteristics of the participants are shown in Table 1. The mean score of the five personality traits based on their gender is shown in Table 2. The agreeableness trait was exhibited by the majority

of the males and females, followed by conscientiousness. The least expressed trait was extroversion in males and emotional stability in females. There was a statistically significant difference observed in emotional stability traits between male and female pediatric dentists. All the 10 questions on emotional stability, which showed significant differences between genders, have been summarized in Table 3.

**Table 1:** Demographic details of the participants

Factors	N (%)
Gender	
Male	159 (41.3)
Female	231 (58.7)
Work sector	
Private	338 (86.7)
Government	52 (13.3)
Job description	
Clinician	153 (39.5)
Academician	42 (11)
Both	195 (50.5)
Designation	
Head of the department	105 (26.8)
Professor <sup>a</sup>	82 (21.1)
Reader <sup>b</sup>	100 (25.7)
Senior lecturer <sup>c</sup>	103 (26.4)

<sup>a</sup>In the teaching profession—>9 years after postgraduation; <sup>b</sup>in the teaching profession—4–9 years after postgraduation; <sup>c</sup>in the teaching profession—0–4 years after postgraduation

## DISCUSSION

Dentistry is considered one of the most stressful professions among the healthcare professions.<sup>12</sup> Pediatric dentistry is an age-defined specialty treating children, and pediatric dentists face various challenges in managing children in dental offices. The pediatric dentistry treatment triangle displays a complex relationship between pediatric dentists, child patients, parents, and the social environment.<sup>13</sup> Pediatric dentists are expected to possess qualities that optimize the interactions in this triangle, making this profession unique and challenging. The personality of pediatric dentists plays a major role in their performances and success in clinical practice. The present study was the first of its kind to assess the personality traits of pediatric dentists in India.

Previous studies on personality types of dental professionals have used different tools. Needleman et al. used the Myers–Briggs Type Indicator consisting of 96 questions to assess the personality traits of pediatric dentists in the United States of America.<sup>8</sup> Goolsby et al. utilized the International Personality Item Pool of Big Five markers consisting of 50 questions to assess the personality traits of United States dental students.<sup>6</sup> The current study also utilized the Big Five inventory as it is relatively simple and brief.

In this study, agreeableness was the predominant trait found among both male and female pediatric dentists. It measures how

**Table 2:** Comparison of the five personality trait scores between the genders

Personality traits	Male		Female		Mean difference	p-value <sup>a</sup>
	Mean ± SD	95% CI	Mean ± SD	95% CI		
Extroversion	21.05 ± 7.04	−0.28–2.68	19.85 ± 7.53	−0.26–2.67	1.20	0.147
Agreeableness	28.67 ± 5.87	−1.77–0.54	29.29 ± 5.62	−1.78–0.55	−0.62	0.26
Conscientiousness	27.74 ± 6.66	−2.01–0.70	28.59 ± 6.76	−2.01–0.70	−0.65	0.215
Emotional stability	22.66 ± 8.66	3.29–6.85	17.58 ± 8.87	3.30–6.84	5.08	<0.001
Openness to experience	25.31 ± 5.31	−1.86–0.37	26.05 ± 5.66	−1.84–0.36	−0.74	0.148

CI, confidence interval; SD, standard deviation; <sup>a</sup>Mann–Whitney U test

**Table 3:** Comparison of the emotional stability scores between genders

Emotional stability questions	Males		Females		p-value <sup>a</sup>
	Median	IQR	Median	IQR	
4. I get stressed out easily	3.0000	2.0000	4.0000	2.0000	<0.001
9. I am relaxed most of the time	3.0000	2.0000	3.0000	2.0000	<0.001
14. I worry about things	4.0000	2.0000	4.0000	1.0000	0.002
19. I seldom feel blue (sad)	3.0000	2.0000	3.0000	2.0000	0.045
24. I am easily disturbed	3.0000	2.0000	3.0000	2.0000	0.019
29. I get upset easily	3.0000	3.0000	4.0000	2.0000	<0.001
34. I change my mood a lot	2.0000	3.0000	3.0000	2.0000	0.005
39. I have frequent mood swings	1.0000	2.0000	3.0000	3.0000	<0.001
44. I get irritated easily	2.0000	3.0000	3.0000	2.0000	<0.001
49. I often feel blue (sad)	2.0000	2.0000	3.0000	3.0000	0.001

IQR, interquartile range; <sup>a</sup>Mann–Whitney U test

much people value social harmony, cooperation, and virtues like honesty and decency.<sup>10</sup> These qualities of pediatric dentists may be beneficial to make their child patients feel at ease and concerned with their emotions. People with these personality traits are good listeners. Active listening is an important quality of pediatric dentists which helps them to establish a good rapport and communication when working with children and their parents.

Conscientiousness was the second most expressed trait amongst the study population. It describes the degree to which people value preparation, has the trait of perseverance, and are goal-oriented.<sup>9</sup> It can be accepted that pediatric dentists "pay attention to details," "follow a schedule," and "get chores done right away." These characteristics are reflected in their diagnostic abilities, prompt treatment planning, and time management at their workplace. Pediatric dentistry is always about effective and efficient treatment rendered to children.

The degree to which people display self-awareness, individualism, and intellectual curiosity is referred to as their level of openness to experience, which was also a commonly observed trait in this study population. Communication, one of the fundamentals of behavior management, relies on this quality.<sup>10</sup> Pediatric dentists use "excellent abstract ideas," "vivid imaginations," and "rich vocabulary." Hence, they are able to successfully behavior-guide children by using appropriate techniques like euphemisms, distractions, and storytelling.

Extroversion was one of the least exhibited personality traits in this study. It is the degree to which people interact with the outside world and feel joy and other good feelings.<sup>9</sup> High scorers in this category tend to be very social, while low scorers prefer to work alone. Needleman et al. stated that pediatric dentists who exhibit extroversion would more likely prefer a nonsolo practice setting where there is more opportunity for interactions with associates and other staff.<sup>8</sup> It is likely that most of our study participants were not extroverts by nature. But pediatric dentists realize and recognize the child in them. Hence, they are able to behave and converse like a 5-year-old to treat a 5-year-old.

Emotional stability is a trait by which individuals are emotionally stable and balanced. This was least expressed by pediatric dentists in this study. It was mentioned that majority of the pediatric dentists "seldom feel blue" and "don't get stressed out easily." There was a significant difference observed between males and females in this trait. Male pediatric dentists showed more emotional stability compared to females. Further, on assessing the effect of gender on individual items of emotional stability trait, males and females presented significantly different scores for all the questions asked under this trait. Similar results were obtained by Goolsby et al., stating that male dental students were more emotionally stable than females.<sup>6</sup> The highest deviation in scoring between the gender was seen for the facet "I have frequent mood swings." This suggested that female pediatric dentists tend to be much more emotionally unstable than males. Due to their constrained emotionality, men really experience emotions less frequently than women do. The term "restrictive emotionality" describes a propensity to restrain the expression of particular emotions and a reluctance to divulge personal feelings.<sup>14</sup>

The BFPT used in this study included both positive and negative statements that were arranged in random order to minimize the

acquiescence bias. The study sample included pediatric dentists from different states of India to have a diverse range of populations. Due to the nature of the questions mentioned in the inventory, there may be a chance of social desirability bias, where the respondents tend to answer questions in a manner that will be viewed favorably by others.<sup>15</sup> Hence, it is possible to overreport good behavior or underreport bad/undesirable behavior. But since the participants had been informed that the information shared should be kept confidential, this error would have been considerably minimized in this study.

## CONCLUSION

Within the limitations of the study, agreeableness was found to be the most prevalent personality trait amongst pediatric dentists in India, followed by conscientiousness. Extroversion and emotional stability were less expressed by them. Female pediatric dentists were comparatively less emotionally stable/more neurotic than male pediatric dentists in India.

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