

# Assessment of Knowledge, Attitude, and Practice among Private Dental Practitioners toward Preventive Measures of Pediatric Patients in Durg-Bhilai City

Jayesh Tiwari<sup>1</sup>, Kirti Pattanshetti<sup>2</sup>, Deoyani Doifode<sup>3</sup>, Shreya Sankalecha<sup>4</sup>, Harshita P Kothari<sup>5</sup>, Rishabh Sadhu<sup>6</sup>

## ABSTRACT

**Introduction:** The old saying “prevention is better than cure” holds true when applied to preventive dental care. It is vitally important for the general health and well-being of the individual to take the necessary steps to prevent the occurrence of major dental problems. American Academy of Pediatric Dentistry (AAPD) emphasizes the importance of initiating professional oral health intervention in infancy and continuing through adolescence and beyond.

**Materials and methods:** Around 109 available private general dental practitioners of Durg-Bhilai city (within city limits) made up the (convenient) sampling frame of the study. These entire dentists were identified and contacted. But, out of 109 dentists, only 92 were surveyed. BDS graduates and MDS (other than pedodontists) were included in the study. Dentists who were not willing to participate were excluded from the study. The sample size was calculated based on the total number of dentists practicing in Durg-Bhilai city limits.

**Conclusion:** A statistically significant correlation was found in-between the knowledge and practice score (0.368), knowledge and attitude (0.269); attitude and practice (−0.257).

**Keywords:** Children, Oral health, Prevention, Sealants, Topical fluorides.

*International Journal of Clinical Pediatric Dentistry* (2020): 10.5005/jp-journals-10005-1886

## INTRODUCTION

The old saying “prevention is better than cure” holds true when applied to preventive dental care. It is vitally important for the general health and well-being of the individual to take the necessary steps to prevent the occurrence of major dental problems. American Academy of Pediatric Dentistry (AAPD) emphasizes the importance of initiating professional oral health intervention in infancy and continuing through adolescence and beyond.<sup>1</sup>

Dental caries is a multifactorial disease caused by an alteration in the composition of the bacterial biofilm, leading to an imbalance between the demineralization and remineralization processes and manifests by the formation of caries lesions in primary and permanent dentitions.<sup>2</sup>

Among all the chronic non-communicable diseases, dental caries is ranked as number three by WHO in children that require worldwide attention for prevention and treatment.<sup>3</sup> The National Health and Nutrition Examination Survey (NHANES) 2011 to 2012 data showed that 37% of children, aged 2–8 years old, were diagnosed with dental caries in primary teeth, and 21% of children, aged 6–11 years, and 58% of children, aged 12–19 years, were diagnosed with dental caries in their permanent teeth. While comparing these data to the earlier survey of 1999 to 2004, an overall decline in the prevalence of caries in primary teeth and a slight decrease in the caries percentage in permanent teeth was noticed.<sup>2</sup>

The prevalence of dental caries in India in children aged 5 years had a caries prevalence range of 40–60%. In children (12 and 15 years), the majority of the states surveyed had a caries prevalence ranging between 40% and 80%.<sup>4</sup> This indicates a major public health problem posing a great challenge to community and dental professionals.<sup>5</sup>

<sup>1–3,5,6</sup>Department of Pedodontics and Preventive Dentistry, Maitri College of Dentistry and Research Centre, Durg, Chhattisgarh, India

<sup>4</sup>Department of Paedodontics and Preventive Dentistry, VS Dental College and Hospital, Bengaluru, Karnataka, India

**Corresponding Author:** Jayesh Tiwari, Department of Pedodontics and Preventive Dentistry, Maitri College of Dentistry and Research Centre, Durg, Chhattisgarh, India, Phone: +91 7000536809, e-mail: drtiwarijayesh@gmail.com

**How to cite this article:** Tiwari J, Pattanshetti K, Doifode D, *et al.* Assessment of Knowledge, Attitude, and Practice among Private Dental Practitioners toward Preventive Measures of Pediatric Patients in Durg-Bhilai City. *Int J Clin Pediatr Dent* 2020;13(S-1):S78–S81.

**Source of support:** Nil

**Conflict of interest:** None

The use of fluorides for the prevention and control of caries is documented to be both safe and highly effective. Professionally applied topical fluoride treatments are efficacious in reducing caries in children with moderate or high caries risk.<sup>1</sup>

According to recent systematic reviews and evidence-based clinical practice guidelines, the use of sealants reduces the incidence of carious lesions in the occlusal surfaces of permanent molars by approximately 80% in children and adolescents.<sup>2,6,7</sup>

The AAPD acknowledges the importance of managing the developing dentition and occlusion, which includes the recognition, diagnosis, and appropriate treatment of dentofacial abnormalities. Deleterious effects of oral habits have increased the need for orthodontic treatment. Arch length deficiency owing to premature loss of primary teeth can produce or increase the severity of malocclusions. The use of space maintainers prevents loss of arch

length, width, and perimeter by maintaining the relative position of existing dentition.<sup>8</sup>

Dentists' knowledge and attitude toward oral healthcare provide the framework for their professional work. Dentists are healthcare providers who educate the public regarding the importance of oral healthcare. Knowledge and attitude of the dentist influence the treatment decisions toward preventive care options.<sup>9</sup> Several studies have reported a lack of knowledge in the preventive measures in child dental care. Therefore, this study was conducted to assess the knowledge, attitude, and practice among the dental practitioners in Durg-Bhilai city, Chhattisgarh, regarding the role of sugars, diet counseling, pit and fissure sealants, topical fluorides, and use of orthodontic appliances.

## MATERIALS AND METHODS

### Design and Sampling

The present cross-sectional study was conducted at the Department of Paedodontics and Preventive Dentistry, Maitri College of Dentistry and Research Centre, Durg, in the month of August 2017. A list of dentists practicing in Durg-Bhilai city registered with the Dental Council of India was obtained. Around 109 available private general dental practitioners of Durg-Bhilai city (within city limits) made up the (convenient) sampling frame of the study. These entire dentists were identified and contacted. But, out of 109 dentists, only 92 were surveyed. BDS graduates and MDS (other than pedodontists) were included in the study. Dentists who were not willing to participate were excluded from the study.

The sample size was calculated based on the total number of dentists practicing in Durg-Bhilai city limits. Before the start of the study, ethical clearance was obtained from the Institutional Ethics Committee. Written informed consent was obtained from the study participants.

A pretested and structured questionnaire was adapted from questionnaires used previously in studies done by Ghasemi et al and Patil et al.<sup>5,9</sup> The questionnaire was divided into several segments; the first segment assessed the demography of the participant's gender, age, years of experience in the profession, and qualification. Second, assessed participant's levels of knowledge regarding preventive dental care. Third, assessed participant's attitudes toward preventive dental care. The last segment of the questionnaire assessed the practice of dentists regarding preventive dental care.

The participants were asked several yes/no questions regarding their knowledge, attitude, and practice pertaining to sealants, topical fluoride, space maintainers, habit-breaking appliances, and other preventive measures and expected to put a tick sign to the option they feel most relevant.

The filled questionnaire forms were collected from the respondents and were coded. All closed-ended questions were coded with numerical responses. The data were entered into a Microsoft Excel sheet. This sheet was then analyzed using Statistical Packages for Social Sciences (SPSS), version 20.0 software. Results were expressed as the number and percentage of respondents for each question. Based on the responses received through questionnaires, the data obtained were analyzed by using statistical data. The total number and percentage were calculated and then analysis was done using Chi-square test, *t*-test, and Pearson correlation. Chi-square test is used to determine significant difference between the expected frequencies and the observed frequencies in one or more categories, *t*-test was used to compare

the mean scores. Pearson's correlation was done to assess the correlation between the variables value  $\leq 0.05$  is considered as statistically significant. For the test, a  $p < 0.05$  is considered statistically significant.

## RESULTS

A total of 109 practitioners were contacted of whom only 92 agreed to participate. The demographic profile, education levels, and years of experience in the profession are shown in Table 1. Table 2 shows a gender-wise comparison of mean scores of knowledge, attitude, and practice. Female practitioners showed higher mean scores for knowledge and attitude than males. The mean scores for practice were comparable between male and female practitioners with a statistically non-significant difference. Table 3 shows a comparison of mean scores of knowledge, attitude, and practice according to the level of education. The mean scores of knowledge, attitude, and practice were more in MDS practitioners compared to BDS practitioners. Table 4 shows a comparison of mean scores of knowledge, attitude, and practice between the age groups. The mean scores for knowledge and attitude were more in <35 years of age group. The practice scores were comparable between <35 years and >35 years of age. Table 5 shows a comparison of knowledge, attitude, and practice according to the level of experience of the practitioners. The mean scores of knowledge and attitude were more in <5 years of experience. The practice scores were more in >5 years of experience. Table 6 shows overall mean scores of knowledge, attitude, and practice. Knowledge is more than attitude followed by practice. Table 7 depicts the correlation between knowledge, attitude, and practice toward preventive dental care. A statistically significant correlation was found in-between the

**Table 1:** Distribution of the survey respondents according to demographic characteristics, years of experience, and education levels

Characteristic	Frequency (n)	Percent	Total
Gender			
Male	58	52.2	92
Female	34	31.1	
Level of education			
BDS	54	58.69	92
MDS (other than pedodontist)	38	41.09	
Age groups			
<35 years	65	70.65	92
>35 years	27	29.34	
Years of experience			
<5 years	51	55.43	92
>5 years	41	44.56	

**Table 2:** Comparison of mean scores of knowledge, attitude, and practice between genders

Scores	Gender	Mean $\pm$ SD	<i>p</i> value
Knowledge	M	13.54 $\pm$ 0.50	0.21
	F	13.69 $\pm$ 0.63	
Attitude	M	10.15 $\pm$ 0.79	0.40
	F	10.28 $\pm$ 0.64	
Practice	M	7.89 $\pm$ 0.54	0.80
	F	7.91 $\pm$ 0.55	

Student's *t*-test

knowledge and practice score (0.368), knowledge and attitude (0.269); attitude and practice (−0.257).

## DISCUSSION

This questionnaire study is based on six following preventive measures; pit and fissure sealant, fluoride application, the role of sugars, space maintainers, orthodontic appliance, and oral hygiene measures. The response rate of the present study was 78.3%. Some of the practitioners did not respond to the study due to their busy schedules. The results of the present study reflected that the practitioners are generally aware of preventive dental care.

The mean scores of knowledge and attitude of female practitioners are more than male practitioners and the difference is found to be non-significant (Table 2,  $p = 0.21, 0.40$ ). In the present

study, female practitioners demonstrated a more positive attitude toward preventive dental care in children, which is in line with the results of several other studies. This indicates female dentists had a greater interest in preventive dental care.<sup>9–12</sup> In the present study, the mean scores of practice between male and females is comparable with a non-significant difference ( $p = 0.80$ ). Patil et al. reported that the knowledge, attitude, and practice of male practitioners were more than females in Bhopal city.<sup>5</sup>

In the present study, the knowledge and attitude of MDS practitioners (other than Pedodontist) are more compared to BDS practitioners, the difference is found to be non-significant (Table 3,  $p = 0.46, 0.38$ ). MDS practitioners (other than Pedodontist) show higher mean values for the practice of preventive dental care in children compared to BDS practitioners (Table 3,  $p = 0.22$ ). The results of the present study are similar to the study conducted by Patil et al.<sup>5</sup>

Practitioners of <35 years showed more knowledge and favorable attitude toward preventive dental care compared to practitioners of >35 years and the difference is found to be non-significant (Table 4,  $p = 0.31, 0.11$ ). The results of the present study are in line with the study conducted by Premnath and John and Patil et al.<sup>5,13</sup> The mean values of practice between age groups of

**Table 3:** Comparison of mean scores of knowledge, attitude, and practice between BDS and MDS practitioners

Scores	Qualification	Mean ± SD	p value
Knowledge	BDS	13.57 ± 0.55	0.46
	MDS (other than pedodontist)	13.66 ± 0.54	
Attitude	BDS	10.19 ± 0.69	0.38
	MDS (other than pedodontist)	10.33 ± 0.73	
Practice	BDS	7.89 ± 0.53	0.22
	MDS (other than pedodontist)	7.99 ± 0.58	

Student's *t*-test

**Table 4:** Comparison of mean scores of knowledge, attitude, and practice between age groups

Scores	Age group	Mean ± SD	p value
Knowledge	<35 years	13.69 ± 0.54	0.31
	>35 years	13.56 ± 0.55	
Attitude	<35 years	10.42 ± 0.64	0.11
	>35 years	10.26 ± 0.71	
Practice	<35 years	7.94 ± 0.73	0.85
	>35 years	7.96 ± 0.87	

Student's *t*-test

**Table 5:** Comparison of mean scores of knowledge, attitude, and practice according to years of experience

Scores	Experience levels	Mean ± SD	p value
Knowledge	<5 years	13.68 ± 0.55	0.12
	>5 years	13.50 ± 0.55	
Attitude	<5 years	10.22 ± 0.79	0.84
	>5 years	10.25 ± 0.58	
Practice	<5 years	7.90 ± 0.58	0.49
	>5 years	7.98 ± 0.49	

Student's *t*-test

**Table 6:** Overall mean scores of knowledge, attitude, and practice

Scores	Knowledge (mean ± SD)	Attitude (mean ± SD)	Practice (mean ± SD)
Mean scores	8.38 ± 1.2	7.75 ± 0.7	6.04 ± 1.5

SD, standard deviation

**Table 7:** Correlation between knowledge, attitude, and practice

	Sum of knowledge scores	Sum of attitude scores	Sum of practice scores
Sum of knowledge scores	Pearson correlation	1	0.269*
	Sig. (two-tailed)		0.010
	N	90	90
Sum of attitude scores	Pearson correlation	0.269*	1
	Sig. (two-tailed)	0.010	
	N	90	90
Sum of practice scores	Pearson correlation	0.368**	−0.257*
	Sig. (two-tailed)	0.000	0.014
	N	90	90

Correlation of knowledge, attitude, and practice between the experience

\*Correlation is significant at the 0.05 level (two-tailed)

\*\*Correlation is significant at the 0.01 level (two-tailed)

Pearson's correlation test

practitioners are comparable with a statistically non-significant difference ( $p = 0.85$ ).

In the present study, practitioners of <5 years of experience had more knowledge and a favorable attitude, the difference is found to be non-significant (Table 5,  $p = 0.12, 0.84$ ). The results of the present study are in line with the study conducted by Premnath and John.<sup>13</sup> The mean values of practice between levels of experience of practitioners are comparable with a statistically non-significant difference ( $p = 0.49$ ).

Overall, the results of the present study indicate favorable knowledge (Table 6, mean  $\pm$  SD =  $8.38 \pm 1.2$ ) and attitude (Table 6, mean  $\pm$  SD =  $7.75 \pm 0.7$ ) regarding the importance of pit and fissure sealants, topical fluorides, use of space maintainers, and myofunctional appliance, but did not adequately relate to use of these preventive measures in routine dental practice (Table 6, mean  $\pm$  SD =  $6.04 \pm 1.5$ ). Similar results were found in a study by Kervanto-Seppala et al. and Patil et al. which showed the underutilization of sealants.<sup>5,14</sup> However, the results of the present study is contrary to the study conducted by Riley et al.<sup>15</sup>

### LIMITATIONS

The limitation of the present study is the small sample size which is limited to Durg-Bhilai city; hence, findings may not be extrapolated to other cities in Chhattisgarh and India.

### CONCLUSION

The knowledge and attitude are more among dental practitioners in Durg-Bhilai city. The efforts must be taken to enhance the practice of preventive care in children like pit and fissure sealants, topical fluorides, orthodontic appliances, etc., in routine dental practice. Parents and children should be encouraged to utilize these treatment measures.

### REFERENCES

1. American Academy of Pediatric Dentistry. Guideline on periodicity of examination, preventive dental services, anticipatory guidance/counseling, and oral treatment for infants, children, and adolescents. *Pediatr Dent* 2009;33:102–108.
2. Naaman R, Housseiny AA, Alamoudi N. The use of pit and fissure sealants—a literature review. *Dent J* 2017;5(34):1–19. DOI: 10.3390/dj5040034.
3. Marrs JA, Trumbley S, Malik G. Early childhood caries: determining the risk factors and assessing the prevention strategies for nursing intervention. *Pediatr Nurs* 2011;37(1):9–15.
4. Bali RK, Mathur VB, Talwar PP, et al. National oral health survey and fluoride mapping. *Dent Coun India New Delhi* 2004. 101–104.
5. Patil RU, Sahu AK, Kambalimath HV, et al. Knowledge, attitude and practice among dental practitioners pertaining to preventive measures in paediatric patients. *JCDR* 2016;10(12):71–75. DOI: 10.7860/JCDR/2016/22300.9122.
6. Wright JT, Tampi MP, Graham L, et al. Sealants for preventing and arresting pit-and-fissure occlusal caries in primary and permanent molars. *Pediatr Dent* 2016;38(4):282–308. DOI: 10.1016/j.adaj.2016.06.003.
7. American Academy of Pediatric Dentistry. Evidence based clinical practice guideline for the use of pit-and-fissure sealants. *Pediatr Dent* 2016;38(5):120–136.
8. American Academy of Pediatric Dentistry. Guideline on management of the developing dentition and occlusion in pediatric dentistry. 2014;37:253–265.
9. Ghasemi H, Murtomaa H, Torabzadeh H, et al. Knowledge and attitude towards preventive dental care among Iranian dentists. *Eur J Dent* 2007;1(4):222–229. DOI: 10.1055/s-0039-1698343.
10. Murtomaa H, Haavio-Mannila E, Kandolin I. Burnout and its causes in Finnish dentists. *Community Dent Oral Epidemiol* 1990;18(4):208–212. DOI: 10.1111/j.1600-0528.1990.tb00059.x.
11. Murray JJ. Better opportunities for women dentists. A review of the contribution of women dentists in the workforce. *Br Dent J* 2002;192(4):191–196. DOI: 10.1038/sj.bdj.4801333.
12. Brennan DS, Spencer AJ. The role of dentist, practice and patient factors in the provision of dental services. *Community Dent Oral Epidemiol* 2005;33(3):181–195. DOI: 10.1111/j.1600-0528.2005.00207.x.
13. Premnath P, John J. Knowledge attitude and practice toward preventive dental care among dental professionals in Chennai. *J Educ Ethics Dent* 2015;5(1):20–24. DOI: 10.4103/0974-7761.178023.
14. Kervanto-Seppala S, Pietila I, Meurman JH, et al. Pit and fissure sealants in dental public health application criteria and general policy in Finland. *BMC Oral Health* 2009;9(1):5. DOI: 10.1186/1472-6831-9-5.
15. Riley JL, Richman JS, Rindal DB, et al. Use of caries prevention agents in children: findings from the dental practice-based research network. *Oral Health Prev Dent* 2010;8(4):351–359.