

# Knowledge, Attitude and Practice towards Latest Advances in Dentistry among Dental Practitioners in North Bangalore

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## ABSTRACT

**Introduction:** Dentistry has witnessed a paradigm shift over the past 5 decades from caries restoration and prosthetic replacement to preventive and aesthetic rejuvenation. This is an important clinical challenge since our patients have high expectations for receiving the latest advances in health care. Hence, the proficient and successful practitioner must have a strong background and be knowledgeable of latest advances in dentistry. So, this study was conducted to assess the knowledge, attitude and practice towards latest advances in dentistry among dental practitioners of North Bangalore. **Methods:** A cross sectional descriptive study was conducted among dental practitioners. The pre-tested, structured, closed ended questionnaire was self-administered to 161 dental practitioners of North Bangalore, to collect responses on knowledge, attitude and practice towards latest advances in dentistry. The questionnaire comprised of 22 questions including gender, qualification, and years of dental practice. The data obtained was analyzed using SPSS version 20.0 and  $P < 0.05$  was considered statistically significant. Chi square test was used to analyze the data. **Results:** Among the 161 dental practitioners in the study, 62.5% were BDS graduates and 37.5% were practitioners with post graduation (MDS). The gender and qualification showed significant difference in knowledge and practice with  $P < 0.05$ . Most of the dental practitioners showed positive attitude. In addition, practitioners with post graduation (MDS) were more knowledgeable with good practice as compared to BDS graduates. **Conclusions:** In the present study overall knowledge towards latest advances in dentistry was average with positive attitude and practice was poor among dental practitioners.

**KEYWORDS:** Dental practitioners, KAP, Latest advances in dentistry

## INTRODUCTION

Every practitioner has the responsibility to offer his or her patients the latest advances in their profession. Dentistry has witnessed a paradigm shift over the past 5 decades from caries restoration and prosthetic replacement to preventive and aesthetic rejuvenation.<sup>1</sup> The present day patients have high expectations for the latest advances in health care delivery system. Fortunately, research has provided new approaches for delivering more effective treatments in an efficient and reproducible manner.<sup>2</sup> Hence, the proficient and successful practitioner must have a strong background and be knowledgeable about latest advances in dentistry.<sup>3</sup> Some of the latest advances in dentistry which improve the quality of patient care include chlorhexidine modified glass ionomer cement (GIC), ozone therapy, nano-composites, chitosan, stem cell therapy, laser doppler flowmetry, image guided implants, etc.

The incorporation of chlorhexidine into restorative materials such as glass ionomer cement (GIC) can be considered a valuable substitute especially in atraumatic restorative treatment and for general clinical usefulness in restorative dentistry.<sup>4</sup> Scientific studies have suggested that ozone therapy presents a potential for an atraumatic, biologically-based treatment for conditions encountered

in dental practice such as tooth decay, tooth discoloration, soft tissue infections, root canal therapy etc.<sup>5</sup> A variety of pit and fissure sealants are available with new advancements and one such being the evolution of nano-composites as pit and fissure sealants in paediatric patients.<sup>6</sup> Chitosan is a biodegradable material which has enhanced wound healing and antimicrobial properties. This could be potentially useful as a bioactive coating to improve osseointegration of craniofacial implant devices.<sup>7,8,9</sup> Dental stem cells (SCs) have also drawn attention in recent years because of their accessibility, plasticity, and high proliferative ability.<sup>10</sup> Doppler flowmetry is a useful device in the diagnosis, monitoring, prognosis and management of periodontal patients. This tool allows access to gingival blood flow as well as to pulpal microcirculation.<sup>11</sup> Image guided implantology has undergone revolutionary development in the last few years which helps in implant planning and guides to define the position and angulations of the implants to be placed, thus assists in avoiding the contact of inferior alveolar nerve or the intrusion into the maxillary sinus.<sup>12</sup>

These rapid, but steady, advances have long pointed to the need for the change within the dental profession, as the very essence of oral health care is in the process of

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transition. However, the oral health profession and its partners in other disciplines have been reluctant to modify either the educational process or the scope of practice.<sup>13</sup> Hence, the study was conducted with an aim to assess the knowledge, attitude and practice towards latest advances in dentistry by using a pretested questionnaire among dental practitioners of North Bangalore, India.

## MATERIALS AND METHODS

The present study was a questionnaire based, descriptive, cross sectional study. It was conducted among 161 dental practitioners of North Bangalore, and the list was obtained from Karnataka State Dental Directory. Sampling technique used in the study was convenience sampling. All the dental practitioners who agreed to participate in the survey were included in the study. Informed consent was obtained from the dental practitioners before the start of the study. The ethical clearance was obtained from Institutional Review Board of the dental institute. A pilot study was conducted on 30 dental practitioners for pre-testing the questionnaire and to determine feasibility of the study. Cronbach's Alpha was calculated for the questionnaire and was found to be 0.73.

The study involved self-administration of a pre-tested structured closed ended questionnaire to the dental practitioners. Questionnaire consisted of 22 multiple choice questions. The first section covered demographic data such as gender, qualification, and years of dental practice. The second section consisted of 9 questions to evaluate knowledge regarding advances in dentistry. In the third section, attitude was assessed by 4 questions which included the information regarding regular attendance of Continuing Dental Education programmes to learn about latest advances in dentistry and any advanced training programmes. The fourth section consisted of 5 questions to evaluate practice such as use of ozone therapy, use of image guided implantology, use of nano-composites in their practice, etc. The study was done during the working hours of the dental clinics. The dental practitioners were asked to fill the questionnaire and an average time of 15 minutes was taken to complete questionnaire. Anonymity of the respondents was assured. The duration of the study was two months, from December 2014 to January 2015.

The data collected was compiled using Microsoft excel sheet and was subjected to statistical analysis using SPSS version 20.0 and  $P < 0.05$  was considered statistically significant. One questionnaire was excluded from analysis as it was incomplete. Frequency distribution, number, percentages were calculated. The descriptive statistics and statistical significance of any difference was determined using Chi square test.

## RESULTS

Among 160 dental practitioners 80 were males and 80 were females (Figure 1) and 57 were in the age group of 21-29, 66 were in the age group of 30-39 and 37 were in

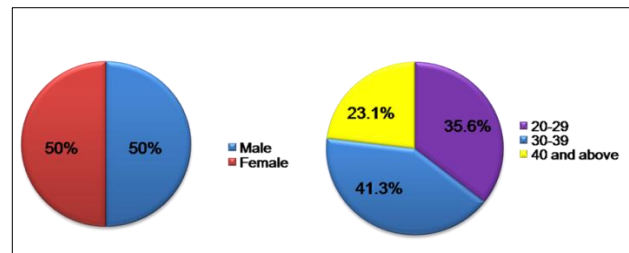


Figure 1: Age and Gender-wise distribution of dental practitioners

the age group of 40 and above (Figure 1). Qualification-wise distribution showed that 62.5% (n=100) were BDS dental practitioners and 37.5% (n=60) were MDS dental practitioners (Figure 2) and 74 were practicing for less than 5 years, 42 were practicing between 6-10 years, 19 between 11-15 years and 25 for more than 16 years (Figure 2).

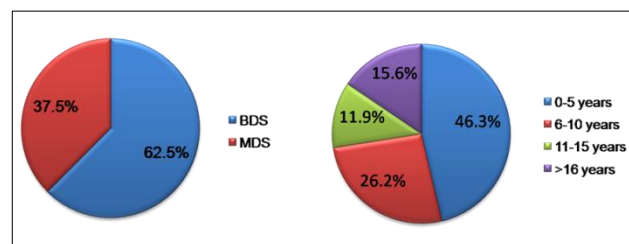


Figure 2: Distribution of dental practitioners according to their qualification and years of dental practice

The responses to knowledge and practice components of the KAP questionnaire were categorized into three for the purpose of analysis based on the scores obtained i.e. poor (< or = 50% score), average (51-75% score) and good (> or = 75% score). The attitude component had two categories i.e. negative and positive. Table 1 shows the percentage distribution of dental practitioners according to the knowledge, attitude and practice level which indicates that only 11.2% and 6.9% reported having good knowledge and practice level respectively. However, 85.7% of dental practitioners reported having positive attitude towards latest advances in dentistry.

No.	Components	Categories	Respondents	
			N	%
I	Knowledge	Poor	90	56.3
		Average	52	32.5
		Good	18	11.2
II	Attitude	Negative	23	14.3
		Positive	137	85.7
III	Practice	Poor	102	63.7
		Average	47	29.4
		Good	11	6.9

Table 1: Percentage distribution of dental practitioners according to knowledge, attitude and practice level

Table 2 reveals that the overall mean knowledge among dental practitioners was 53.6% (average), mean attitude was 81% (positive) and mean practice level was 43.6% (poor).

Table 3 shows the comparison of demographic variables related to knowledge among dental practitioners according to which females reported good knowledge as compared to males and the difference was statistically

No.	Components	Response			
		Mean	SD	Mean (%)	SD (%)
I	Knowledge	4.29	1.7	53.6	21.0
II	Attitude	3.24	0.7	81.0	17.5
III	Practice	6.54	2.8	43.6	18.5

Table 2: Overall mean knowledge, attitude and practice among dental practitioners(SD=Standard Deviation)

Variables	Category	Knowledge Level						χ <sup>2</sup> Value	P Value
		Poor		Average		Good			
		N	%	N	%	N	%		
Age group	21-29	36	53.2	13	2.8	8	14.0	4.26	0.372
	30-39	36	54.5	24	36.4	6	9.1		
	40 & above	18	48.7	15	40.5	4	10.8		
	Gen.	Male	45	56.3	31	38.7	4		
Female	45	56.3	21	26.2	14	17.5			
Qual.	BDS	72	72.0	25	25.0	3	3.0	32.51	P<0.001*
	MDS	18	30.0	27	45.0	15	25.0		
Dental prac. in years	0-5	44	59.5	20	27.0	10	13.5	6.9	0.329
	6-10	25	59.5	13	31.0	4	9.5		
	11-15	12	63.2	6	31.6	1	5.2		
	>15	9	36.0	13	52.0	3	12.0		
	Gen.	Male	58	72.5	19	23.8	3		
Female	44	55.0	28	35.0	8	10.0			
Qual.	BDS	74	74.0	21	21.0	5	5.0	12.13	0.002*
	MDS	28	46.7	26	43.3	6	10.0		
Duration of Dental prac (years)	0-5	54	73.0	15	20.3	5	6.7	9.3	0.154
	6-10	23	54.8	17	40.5	2	4.7		
	11-15	13	68.4	4	21.1	2	10.5		
	>15	12	48.0	11	44.0	2	8.0		

Table 3: Comparison of demographic variables related to knowledge of latest advances in dentistry among dental practitioners. (\* Statistically significant) Chi square test applied

significant with *P* value 0.024. Qualification-wise distribution showed that the dental practitioners with post graduation (MDS) were more knowledgeable as compared to BDS graduates and the difference was found to be statistically significant with *P* value < 0.001. Duration of dental practice and age of dental practitioners did not show any statistical significance.

Table 4 shows the comparison of demographic variables related to the attitude component of the KAP questionnaire among dental practitioners which revealed that the dental practitioners between the age group of 30-39 years reported positive attitude as compared to the other two age groups. However, the difference was not statistically significant. Gender, qualification, and years of dental practice also did not show any statistical significance.

Demographic Variables	Category	Attitude Level				χ <sup>2</sup> Value	P Value
		Negative		Positive			
		N	%	N	%		
Age group (years)	21-29	8	14.0	49	86.0	1.008	0.604
	30-39	8	11.9	59	88.1		
	40 & above	0	0.0	6	100.0		
Gender	Male	11	13.67	70	86.4	0.06	0.797
	Female	12	15.0	68	85.0		
Qualification	BDS	13	12.9	88	87.1	0.44	0.506
	MDS	10	16.7	50	83.3		
Duration of Dental practice (years)	0-5	10	13.3	65	86.7	0.87	0.832
	6-10	6	14.3	36	85.7		
	11-15	4	21.1	15	78.9		
	>15	3	12.0	22	88.0		

Table 4: Comparison of demographic variables related to attitude level among dental practitioners.(Chi square test applied)

Table 5 shows the comparison of demographic variables related to the practice component of KAP questionnaire among dental practitioners according to which females had good practice as compared to males and the difference was found to be significant with *P* value 0.042. In case of qualification, dental practitioners with MDS

qualification reported good practice as compared to BDS dental practitioners and the difference was statistically significant with *P* value 0.002. Years of dental practice and age of dental practitioners did not show any statistical significance.

Variables	Category	Practice Level						χ <sup>2</sup> Value	P Value
		Poor		Average		Good			
		N	%	N	%	N	%		
Age group (years)	21-29	39	68.4	13	22.8	5	8.8	3.3	0.498
	30-39	41	62.1	20	30.3	5	7.6		
	40 & above	22	59.5	14	37.8	1	2.7		
Gen.	Male	58	72.5	19	23.8	3	3.7	6.9	0.042*
	Female	44	55.0	28	35.0	8	10.0		
Qual.	BDS	74	74.0	21	21.0	5	5.0	12.13	0.002*
	MDS	28	46.7	26	43.3	6	10.0		
Duration of Dental prac (years)	0-5	54	73.0	15	20.3	5	6.7	9.3	0.154
	6-10	23	54.8	17	40.5	2	4.7		
	11-15	13	68.4	4	21.1	2	10.5		
	>15	12	48.0	11	44.0	2	8.0		

Table 5: Comparison of demographic variables related to practice level among dental practitioners. (\* Statistically significant Chi square test applied)

## DISCUSSION

This research work presented an overview of the knowledge, attitude, and practices towards latest advances in dentistry among dental practitioners of North Bangalore.

Most studies have confined only to individual specialities like Oral medicine and Radiology, Endodontics, etc. assessing knowledge, attitude and practice levels. This study is an effort to evaluate the knowledge, attitude and practices towards latest advances in general dentistry among dental practitioners.

In the present study, the knowledge among the dental practitioners towards latest advances in dentistry was good among practitioners with MDS qualification as compared to BDS graduates (Table 3), which was in accordance with the study conducted by Ruchi Gupta and Rochna Rai (2013)<sup>14</sup> which showed that those with a post graduation degree had more knowledge. However the overall knowledge was moderate which was in accordance with the study conducted by Elham FG (2012)<sup>15</sup> among Iranian dental practitioners.

In the present study, attitude level was positive amongst study population (Table 1) which was in accordance with the study conducted by Ruchi Gupta and Rochna Rai (2013)<sup>14</sup> wherein the general dental practitioners showed positive attitude towards performing dental treatments and adoption of new technologies in daily practice.

The practice of incorporating latest advances in dental practice was assessed among the dental practitioners. It was found that the practitioners with MDS qualification were more receptive to latest advances as compared to BDS graduates and it was statistically significant (Table 5). A similar finding was seen in the study conducted by Ruchi Gupta and Rochna Rai (2013).<sup>14</sup> However, the overall mean practice component of the KAP study was poor. This suggested that the implementation of these advances into the clinical practice seemed to be poor.

The present study has got certain limitations. The questionnaire used was limited to few advances in dentistry in order to increase compliance and hence could not cover all the latest advances.

## CONCLUSION

In the present study, overall knowledge towards latest advances in dentistry was average with positive attitude and practice was poor among dental practitioners. Continuing dental education programmes, training programs, seminars, and workshops are needed which are aimed at improving the knowledge and skills of dental practitioners. It is also important to improve the quality of existing courses of continuing education in dentistry in order to ensure the necessary competency in clinical practice.

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