



## **Inclination and Impediment towards Preventive Dentistry among Practising Dentists in Bangalore City- A Cross Sectional Study**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author NN designed the study and wrote the first draft of the manuscript. Author SP managed the literature searches, carried out the study and author NV wrote the protocol. Author GS managed the analyses of the study and author BC performed the statistical analysis. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Objective:** Despite the proven effectiveness of preventive dentistry, its acceptance and implementation is still far from being a success. The current study attempts to assess the inclination (attitudes) and impediment (perceived barriers) towards preventive dentistry of practising dentists attached to dental colleges, in Bangalore city.

**Materials and Methods:** A cross sectional study was conducted among clinicians attached to dental colleges in Bangalore city. A total of 176 practising dental faculty, completed a pretested and validated questionnaire. The questionnaire collected information regarding demographic details, characteristics, attitudes and perceived barriers towards preventive dental care. Data was analysed using SPSS version 19. Chi square test, ANOVA and Pearson's correlation was used.

**Results:** The attitude and barrier towards preventive dental care was compared among age, gender, years of practice, designation and specialization respectively. A significant result was obtained for attitude among specialization ( $p=.001$ ). Both attitude ( $p= 0.04$ ) and barriers ( $p= 0.002$ ) had a significant result when compared among designations. Attitude and perceived barriers towards preventive dental care were correlated with years of experience and it was seen that as the experience increases, attitude becomes positive and perceived barriers become low.

**Conclusion:** Dentists' have a positive attitude towards preventive dental care but their perception towards the barriers might have an impact on its implementation.

*Keywords: Attitude; perceived barriers; preventive dental care.*

## 1. INTRODUCTION

The value of preventive self-care oral health behaviours and of professional preventive interventions has been recognized by the profession as well as by much of the public for decades. Pierre Fauchard, the father of dentistry, promoted the value of oral hygiene in the prevention of disease and maintenance of oral health [1]. Preventive dentistry is the practice of caring for one's teeth to keep them healthy which helps in avoiding cavities, gum disease, enamel wear, and more. Prevention is the foundational principle of the practice of modern dentistry. Hence, education in prevention has become an integral component of the dental curriculum [2,3].

Despite the explosive growth in high-quality scientific evidence, it may be surprising to recognize the extent to which evidence-based preventive practices have yet to be successfully implemented. In some countries preventive dental care shows a favourable trend while in others, there is a meagre use of preventive resources. In a country like India, caries among 35-44 years was found to be 48% in Orissa and as high as 86% in Delhi and Maharashtra in a multi-centric study. A prevalence as high as 100% was reported for periodontal disease among 35-44 years and 65-74 years old in Orissa and Rajasthan [4]. The data indicates that apart from having a high disease burden, when a majority of the people cannot afford the basic treatment needs, prevention and preventive procedures would be a more practical approach to solve health, oral health and financial problems regarding health [5].

Shifting the focus from curative care to that of preventive, may assign a greater role for the

dental education community in technology transfer and implementation of new practice models. The Healthy People Curriculum Task Force has continued to work collaboratively towards implementing the educational objectives of Healthy People 2020, where education for health is the "Preventive approach in dental practice" and has been cited as a reason for caries decline in recent decades which is a predominant part of the service-mix of dental practices in the future [6].

The practice of preventive dentistry is extremely important to the prevention of oral disease as it nips the disease in the bud. Dentists affiliated to dental institutions, have a key role in promoting preventive practices within the boundaries of dental curriculum. Students' knowledge, attitude, and interest towards orienting their practices towards preventive dentistry is essential [7].

Effectiveness and successfulness of oral health promotion and preventive programs require existence of knowledgeable and positively oriented dental workforce. Promoting professional responsibility and positive attitudes to serve the community has been emphasized widely in dental undergraduate programs. For dental health professionals, their health beliefs and attitudes not only affect their oral self-care habits but may also potentially influence their ability to motivate patients to undertake preventive oral health measures [8,9].

Previous studies show that, despite having a knowledge on preventive dentistry, widespread implementation is still far from being feasible. Preventive dentistry is perceived to be difficult to practice and insignificant compared to the benefits of curative procedures [8,9,10]. Not many studies have been conducted in Bangalore

city to assess the knowledge and attitude of practising dentists towards preventive dentistry. Hence, the current study aimed to assess the inclination (attitudes) and impediment (perceived barriers) towards preventive dentistry of practising dentists attached to dental colleges in Bangalore city.

## 2. MATERIALS AND METHODS

A cross-sectional study was carried out to find the attitudes & perceived barriers towards preventive dental care among practising dentists, working in various dental colleges of Bangalore city. The study was carried out for duration of three months, from April 1<sup>st</sup>, 2014 to 30<sup>th</sup> June, 2014. Ethical clearance for conducting the study was obtained from the ethical board of the institution.

### 2.1 Inclusion Criteria

- All the dental colleges in Bangalore city, who permit to conduct the study.
- All the practising dentists working in dental colleges of Bangalore city.

### 2.2 Exclusion Criteria

- Dentists who were not present during the time of study.
- Dentists who do not wish to be the part of the study.

### 2.3 Source of Data

The sample size was calculated based on total of 600 dental faculties in 16 dental colleges in Bangalore city. With the prevalence of attitude (83%) from the pilot study, using confidence level of 95% and design effect 1, sample size was estimated to be of 160 participants. Considering 10% nonresponse rates 176 was taken as final sample size.

The permission to conduct the study in each college was obtained from the respective Principal/Dean. The purpose of the study was explained to the staff members in each department and only those who satisfied the inclusion & exclusion criteria were given the questionnaire.

A self-structured questionnaire was used to assess the inclination and impediment towards preventive dentistry. A total of 30 questions were structured which was tested for its validity and

reliability. Twenty five experts in the field of dentistry were given the questions to check for its reliability and validity. Only those questions which were essential were considered for the study. A total of 10 questions for attitudes and 12 questions regarding perceptions towards preventive care were finalised.

These questions were then tested on a pilot population of 15 members. The Cronbach's alpha value for the questionnaire was found to be 0.8 which indicated a very good reliability.

### 2.4 Questionnaire

The questionnaire consists of three parts. Part one consisted of demographic information of the dental faculty such as age, gender, department, and years of teaching experience. Part 2 consisted of questions to assess attitude, a set of 10 pairs of bipolar adjectives, which describe preventive dentistry, was designed. The respondents were asked to describe their attitudes by choosing one of the given options. Part 3 consisted of questions to assess perceived behaviours. It had 12 questions, enquiring about dentists' perceptions of barriers to implement preventive measures for their patients. The answers were given on a 5-point Likert scale ranging from 'very much' (indicating very strong impediment, scored as 1) to 'not at all' (indicating no impediment, scored as 5). While analysing, the perceived barrier scores were coded as '12- 24' very high, '25-36' high, '37-48' moderate and '49-60' low.

### 2.5 Statistical Analysis

Descriptive statistics included means and standard deviation of the respondent's knowledge and attitude scores. Statistical significances of the differences between the subgroups to be compared were evaluated using the Chi-square test for frequencies and ANOVA for mean values. Pearson's correlation was used to establish relationships between variables. The data was analysed using SPSS version 19 with 95% confidence interval and 0.05 significance value.

## 3. RESULTS

When the data was analysed, the results obtained were as described. In this study, 59.1% were males, 40.9% were females. 41.5% were in the age group of 25-30 years, 40.9% were in the age group of 31-36 years, 13.6%

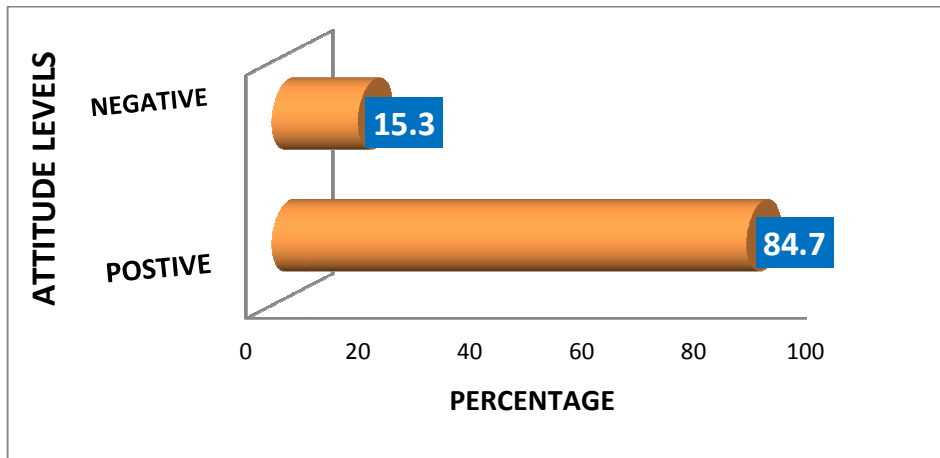
were in the age group of 36-41 years and 4% were in the age group 41 years and above. Majority (96%) were MDS and 4% were BDS. Among the study participants 55.7% participants had an experience of less than 3 years, 35.8% participants had an experience of more than 3 years, 6.8% participants had an experience of less than 7 years and 1.7% participants had an experience of more than 7 years. 10.2% of the total study participants were HODs, 6.8% were professors, 31.8% were readers, and 46% were senior lecturers, while only 5.2% were tutors.

73.3% gave a positive response while 26.7% did not practice preventive dentistry. When perceived barriers were compared amongst the different specialities the results were highly significant ( $p=0.01$ ). The study population was divided according to their designations of tutor, senior lecturer, reader, professor and head of the department (HOD). When attitude and perceived barriers were compared within designations, both of them had significant values of  $p=0.046$  and  $p=0.02$  respectively. It was seen that HODs had better attitude and low perceived barriers when compared with others (Table 1).

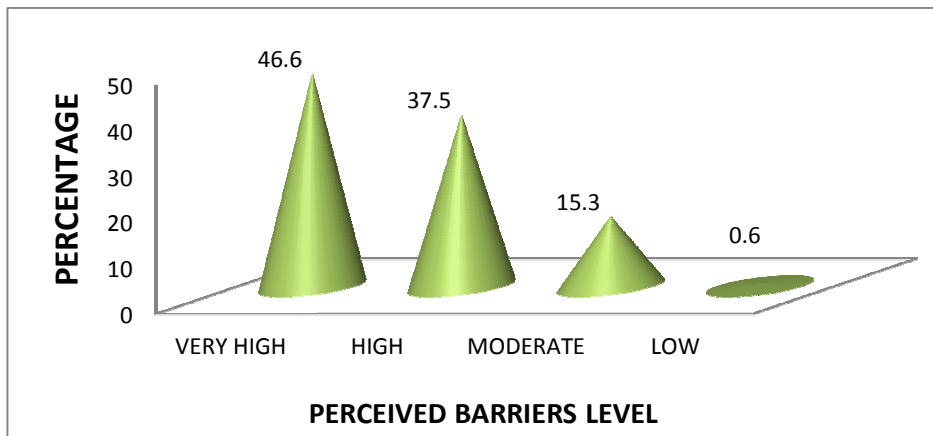
Graph 1 & 2 show the attitude and perceived barriers of the study participants towards preventive dental care.

When study participants were asked about their perception of patients willingness to pay for preventive care, 40.3% study participants found it to be very much poor, 23.8% study participants found it to be much poor, 18.8% study participants found it to be little poor, 10.8% study

When study participants were asked, whether they practice preventive dentistry in their clinics,



Graph 1. Assessment of attitude levels among study participants



Graph 2. Assessment of perceived barrier levels among study participants

**Table 1. Comparison of attitude and perceived barriers among designations**

	Degree of freedom	Mean square	F value	Sig.
Attitude	4	7.841	2.471	.046*
Barriers	4	380.462	4.306	.002**

\*p value significant at 0.05  
 \*\*p value highly significant at 0.05

participants found it to be very little poor while 6.3% study participants found it to be not poor at all (p= 0.057).

When study participants were asked about their perception of preventive dentistry having a low priority in the dental curriculum, 35.1% study participants found it to be very much low, 24.3% study participants found it to be much low, 22.5% study participants found it to be little low, 13.6% study participants found it to be very little low while 4.5% study participants found it not to be low (p=0.026).

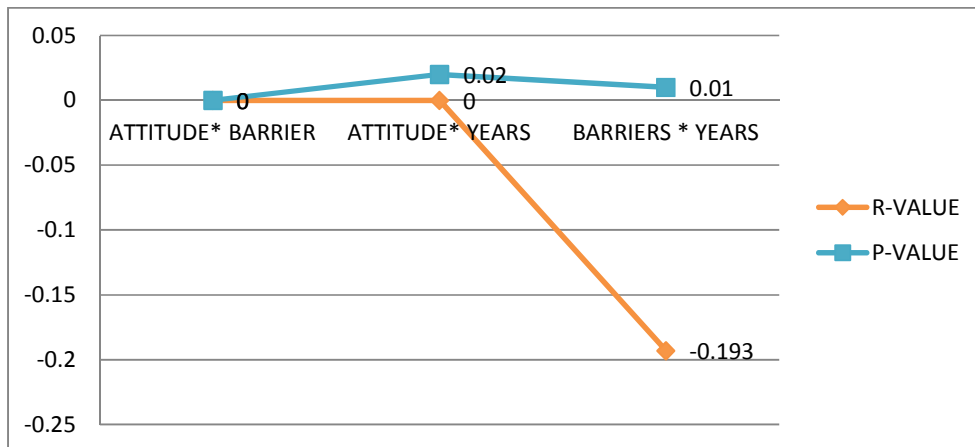
When perceived barriers and attitude were correlated with designation, it was seen that as we go up the ladder of designation, attitude becomes positive and perceived barriers become low. Attitude and perceived barriers were correlated with years of experience and it was seen that as the experience increases, attitude becomes positive and perceived barriers become low (Graph 3).

**4. DISCUSSION**

Preventive dentistry is still in its initial stages in India [10]. With about 93,332 dentists in 2012, the availability of dentists for the population of India is extremely short [11]. For a country like India, where time & affordability are important

hindrances towards treatment delivery, and prevention should be given importance. This study has used a modified questionnaire originally developed by Ghasemi et al. in 2007 [9]. When the study participants were asked about attendance of CDE program on preventive dentistry, it was seen that 55.1% of the dentists had attended CDE program within a year, while a total of 90.9% have attended CDE program within 5 years. Recent attendance of CDE program could increase their knowledge and help build a more positive attitude towards preventive dentistry. This is in accordance to a study done by Ghasemi et al., 2007 but in disagreement with a study done on Mongolian dentists [9,14].

Regular reading of journal allows the reader to be in touch with new development. In this study, 77.8% of the dentists kept in touch with journals, either national or international. The dentists show a positive attitude towards preventive dentistry, which is accordance to a study done by Ghasemi et al. [7]. This indicates a positive inclination of dentists towards preventive dentistry. 84.7% of participating dentists had positive attitude towards preventive dentistry but alarmingly 46.1% had very high perceived barriers towards preventive dentistry. Dentists quoted preventive dentistry to be a scientific subject and agreed that practice of preventive dentistry should be stressed on.



**Graph 3. Correlation among attitude, barrier and years of practice**

On the contrary, dentists found preventive dentistry not to be an efficient practice as there are no trained personnel to help them in it, despite preventive dentistry being relatively easy to practice, as the materials and time required were less. Majority of the dentists found preventive dentistry to be an unattractive practice as it does not attract patients' attention and most of the patients are not receptive of preventive care. Preventive dentistry is not a beneficial practice for dentists and this could be due to the fact the patients do not understand the importance of preventive care and consider it to be unnecessary. This attitude could be attributed to inadequate knowledge among patients, an unwillingness to pay, and little availability of dental insurance coverage [12,13,15,16].

Attitude of the dentists can be influenced by the place, type and trend of practice. It is also highly influenced by the patients' demands and their readiness to accept a new therapy. The questionnaire assessed the perceived barriers to preventive care of the patients as well as the dentists. The patient related barriers were more prominent compared to practice and dentist related barrier. Among the patient related barriers, dentists were of the opinion that, patients had poor knowledge on caries prevention and were unwilling to pay for preventive care which are similar to the findings of a study done in Libya [17]. Dentists in India and other countries rely more on treatment rather than prevention [18,19,20,21].

In this study we found that when years of practice were correlated with attitudes and perceived barriers towards preventive dentistry, it was interpreted that as the years of practice increased attitudes became more positive and perceived barriers decreased. This could be attributed to increase in experience. Similarly as the designation increases attitude becomes positive and perceived barriers decrease. This could be attributed to increased experience in both practice and teaching fields.

These findings give an insight into the factors affecting the practice of preventive dentistry. Future research on the barriers to preventive dental care as perceived by patients and dentists would help in developing an approach, which could include the public, dental practitioners and even the government in the best interest of the patients.

## 5. CONCLUSION

Participants of the study had a positive attitude towards preventive dentistry and were aware of its benefits. A majority of them practised preventive dentistry but, the perceived barriers towards preventive dentistry were high, which makes preventive dentistry look undesirable.

A major limitation of this study is the low number of respondents. The outcome of which might not be the true representative of attitudes and barriers towards preventive dentistry. A bigger sample could have been taken by including all the private practitioners but couldn't be done so due to time constraint. From this study it can be recommended that clinics should have posters or hand-outs about the importance and benefits of preventive dentistry and all the visiting patients should be educated about the benefits of preventive dentistry. It is essential to inculcate preventive care procedures as mandatory for children. It is of utmost importance to educate patients and parents about the importance of preventive procedures and their long term benefits.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the author.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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