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Perceived barriers to preventive dental care among practicing dentists of Bangalore city

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Abstract

Introduction : The reorientation of oral health servicestowards prevention and health promotion is oneof WHO’s priority actions for the continuous development of oral health. Barriers of various types may hinder dentists from applying preventive measures.

Aim: The main aim of this study was to identify the patient, dentist and practice related barriers to preventive dental care among practicing dentists of Bangalore city.

Methodology : A cross-sectional, questionnaire-based study was conducted among 400 practicing dentists of Bangalore city. The questionnaire collected information on practicing dentist’s demographic and professional characteristics as well as the patient-, dentist- and practice -related barriers in providing preventive dental care. Statistical methods used were t-test, ANOVA and Pearson’s correlation coefficient.

Results : Among 400 practicing dentists the majority were males (53.7%) aged between 35-44 years and with a BDS degree (52.3%) in a private practice(99%) and majority of them had ≤ 5yrs of experience .Patient-related barriers were scored the highest with a mean value of 16.33±2.81, followed by practice- and dentist-related barriers with a mean value of 14.71±4.09 and11.88±3.08 respectively. Practice related barriers was found to be moderately correlated with the patient and dentist related barriers. Patient, dentist and practice related barriers was found to

be not statistically significant with gender, age, qualification, practice sector and years of experience.

Conclusion: In spite of dental practitioners being aware of the barriers to preventive dental care, the dentistsperceived thebarriers as being more related to their patients than to their practices or themselves. Also, dentist's attitude towards health promotion and disease prevention needs a drastic transformation.

Keywords: oral health, dentists, health promotion

Introduction

Oral health is a significant but an unseen component of overall health and well-being among children and adults. Oral health problems such as dental caries, periodontitis, and oral cancers are global health problems, in both developed and developing countries.

Dental disease restrict activities in school, work, and home and often considerably diminishes the quality of life for many children and adults, especially those who are low-income or uninsured.[1]

The reorientation of oral health services towards prevention and health promotion is one of WHO's priority action areas for the uninterrupted development of oral health.[2]

Traditional restorative dentistry has had a strong impact on dental education and practice in many parts of the world, and invasive restorative treatment has tended to take priority over non-invasive preventive measures.[3]

In recent years, preventive approach in dental practice has been cited as a reason for decline in caries.[4]

There exists a huge dissimilarities in health status including oral health between urban and rural population in India and other developing countries. While there have been remarkable advances in both dental technology and in the scientific understanding of oral diseases, considerable differences remain in both the rates of dental disease and access to dental care among sub-groups of the population.[5]

Regardless of the fact that the majority of oral diseases are preventable, dental services in India currently focuses primarily on the traditional conservative management of existing diseases rather than preventive care.[4]

Various studies have shown that patient related barriers are the major obstacles in providing preventive dental care.[3,4,5]

Since oral diseases reduce quality of life, it is a priority to utilize preventive dental services. Therefore, in order to improve oral health, barriers to providing preventive dental care should be investigated, identified and addressed. Many barriers exists which comes in the way of dentists in providing preventive care, however, these barriers can be broadly classified into practice related barriers, dentist related barriers and patient related barriers.[3]

Therefore, the main aim of this study was to identify the patient, dentist and practice related barriers to preventive dental care among practicing dentists of Bangalore city.

Materials and Methods

A descriptive cross sectional study was conducted to identify the patient, dentist and practice related barriers to preventive dental care among practicing dentists of Bangalore city registered with Indian dental association Bangalore chapter. Practicing dentists who had given the written consent were included in the study and the Practicing dentists who were not willing to take part in the study were excluded. The settings for the present study were dental clinics of Bangalore city and the ethical clearance was obtained from The oxford dental college and hospital, Bangalore. Data was collected in the month of July and August 2015. Open Epi version 3 was used to generate sample size, the values were computed in the following formula:

Sample size[6,]

n = [DEFF X Np (1-p)]/ [$(d^2/Z^2)_{1-\alpha/2}$ X (N-1)+p X (1-p)]

where,

N=738 (Registered practicing dentists of Indian dental association Bangalore chapter,)

p = Hypothesized frequency of outcome factor in the population = 50%

CI= 95%

DEFF = Design effect = 1.5[6]

With the confidence interval of 95%, the sample size estimated to be 380. Considering the non-response rate of 10%, hence the sample size was increased to 400.

A pilot study was conducted among 10% of the study population. The data was collected by using a questionnaire. The pilot study served as a preliminary study to identify any problems with the questionnaire and hence results of the pilot study were not included in the main study.

A proportionate stratified simple random sampling was done, the Bangalore city was divided into five zones: North, South, East, West and Central zones. The practicing dentists from all the five zones i.e, from north (81), South (139), Central (76), East (37), West (67) were randomly selected. The data was collected from the dental practitioners by using the questionnaire. A questionnaire used in the study by Arheiam et al[3] was given to the dentists who participated in the study, the questionnaire consisted of the demographic details and 12 statements which were divided into 3 categories: Practice Related barriers (4 statements), Dentist Related barriers (4 statements) and Patient Related barriers (4 statements). For each statement, dentists answered the following question: 'How much does this item stop

you from carrying out preventive measures for patients?' The answers were given on a 5-point Likert scale ranging from 'not at all' (indicating no barrier, scored as 1) to'very much' (indicating a very strong barrier, scored as 5). The study was done in the working hours of the dental clinics so as to get the maximum response. Consequently, if the dental clinic was closed or dentists were not available then the clinic was revisited. The practicing dentists were informed about the aim of the study as well as the fact that participation in the questionnaire survey was totally voluntary.

Statistical analysis

Microsoft Excel (2007) was used for data entry. The Statistical software namely Statistical Package for the Social Sciences (SPSS) version 20was used for the analysis of the data. The mean, standard deviation, and minimum and maximum values to describe scores of practice-, dentist-, and patient-related barriers.Level of significance was set at 0.05 The scores for each type of barrier were compared with gender and qualification using the t-test for independent sample. The scores for each type of barrier were compared by age groups (23-34, 35-44, and 45-56 years), practice sector (public, private, or mixed), and years of service (5, 6-10, and 10 years) using one-way Analysis of Variance (ANOVA). Correlation between the barriers was assessed by Pearson's correlation coefficients

Results

Among 400 practicing dentists majority 171 (42.8%) belonged to the age group of 35-44 years, & 215(53.7%) were males & BDS qualified 209 (52.3%) and maximum number of dentists 396 (99%) had private practice with majority 186 (46.5%) of them having an experience ≤ 5years. (Table 1)

The mean scores for the patient related barriers ranged from 3.86±1.06 to 4.31±0.89 with an overall sums of mean scores of 16.33±2.81.Similarly, for the dentist related barriers the mean scores ranged from 2.51±1.49 to

3.30±1.27 with an overall sums of mean scores of 11.88±3.08. For the practice related barriers the mean scores ranged from 3.39±1.51 to 3.96±1.31 with an overall sums of mean scores of 14.71±4.09 (Table 2).Among the 4 patient related barriers majority of the dentists say that 'Patients ignore regular dental visits' is very much a barrier to seek preventive care. Whereas for the dentist related barriers most of the dentists say that 'Preventive dentistry has low priority in the dental curriculum' and is very much a barrier. For the practice related barriers, the highest barrier was found to be that 'dentistry relies on treatment, not on prevention'. Patient-, dentist and practice related barriers were found to be not statistically significant with gender, age, qualification, practice sector and years of experience (Table/fig 3-7). Practice related barrierswas found to be moderately correlated with the patient and dentist related barriers (Table/fig 8).

Table 1: Distribution of practicing dentists based on age .gender, qualification, practice sector, years of experience.

Age (years)	N	%
<35	154	38.5
35 -44	171	42.8
≥45	75	18.7
Total	400	100.0
Gender		
Male	215	53.7
Female	185	46.3
Total	400	100.0
Qualification		
BDS	209	52.3
MDS	191	47.7
Total	400	100.0
Practice sector		
Private	396	99.0
government	0	0
Mixed	4	1.0
Total	400	100.0
Years of experience		
≤5yrs	186	46.50
6-10yrs	110	27.50
≥11yrs	104	26.00
Total	400	100.0

Table 2: Distribution of practicing dentists for the patient, dentist and practice related barriers to preventive dental care

Patient related barriers	Mean±SD
Patients have poor knowledge of the potential of caries prevention	4.13±1.05
Patients are unwilling to pay for preventive care	4.05±0.96
Patients ignore regular dental visits	4.31±0.89
Patient's poor oral health is an obstacle to preventive care.	3.86±1.06
Total mean	16.33±2.81
Dentist related barriers	
Preventive care gives dentists no/minor esteem.	2.51±1.49
Preventive care is not profitable for dentists.	2.77±1.15
Preventive dentistry has low priority in the dental curriculum.	3.30±1.27
There are no dental auxiliaries available to provide preventive care.	3.29±1.38
Total mean	11.88±3.08
Practice related barriers	
Dental insurance covers no preventive measures.	3.70±1.49
Materials needed for preventive dentistry are not easily available	3.39±1.51
Printed material for dental health education is scarce	3.66±1.24
Traditionally, dentistry relies on treatment, not on prevention.	3.96±1.31
Total mean	14.71±4.09

Table 3: Mean of score sums of patient, dentist and practice related barriers according to gender.

	Gender	N	Mean±SD	P value
Patient related barriers	Male	215	16.23±2.86	0.433
	Female	185	16.45±2.76	
Dentist related barriers	Male	215	11.98±3.04	0.45
	Female	185	11.75±3.14	
Practice related barriers	Male	215	14.65±4.08	0.756
	Female	185	14.78±4.11	

t-test

Table 4: Mean of score sums of patient, dentist and practice related barriers according to age .

	Age (years)	N	Mean±SD	P value
Patient related barriers	<35	154	16.45±3.10	0.205
	35 -44	171	16.45±2.49	
	≥45	75	15.81±2.83	
Dentist related barriers	<35	154	11.98±2.96	0.649
	35 -44	171	11.91±3.07	
	≥45	75	11.58±3.36	
Practice related barriers	<35	154	14.50±4.07	0.096
	35 -44	171	15.19±3.93	
	≥45	75	14.05±4.41	

ANOVA

Table 5: Mean of score sums of patient, dentist and practice related barriers according to qualification .

	Qualification	N	Mean±SD	P value
Patient related barriers	BDS	209	16.11±3.07	0.094
	MDS	191	16.58±2.48	
Dentist related barriers	BDS	209	11.95±2.90	0.625
	MDS	191	11.80±3.28	
Practice related barriers	BDS	209	14.82±3.93	0.565
	MDS	191	14.59±4.27	

t-test

Table 6: Mean of score sums of patient, dentist and practice related barriers according to practice sector .

	Practice sector	N	Mean±SD	P value
Patient related barriers	private	396	16.33±2.82	0.767
	mixed	4	16.75±2.21	
Dentist related barriers	private	396	11.86±3.08	0.467
	mixed	4	13.0±3.55	
Practice related barriers	private	396	14.70±4.09	0.700
	mixed	4	15.50±4.79	

t-test

Table 7: Mean of score sums of patient, dentist and practice related barriers according to years of experience .

	Years of experience	N	Mean±SD	P value
Patient related barriers	≤5	186	16.55±2.78	0.341
	6-10	110	16.10±2.93	
	>10	104	16.19±2.72	
Dentist related barriers	≤5	186	12.11±3.00	0.353
	6-10	110	11.74±3.17	
	>10	104	11.60±3.13	
Practice related barriers	≤5	186	14.66±3.96	0.124
	6-10	110	15.30±3.91	
	>10	104	14.17±4.44	

ANOVA

Table 8: Relationship between mean patient,dentist and practice related barriers

		Patient related barriers	Dentist related barriers	Practice related barriers
Patient related barriers	Correlation coefficient	--------	0.204	0.422
	P value	-------	0.001*	0.001*
Dentist related barriers	Correlation coefficient	0.204	-------	0.354
	P value	0.001*	-------	0.001*
Practice related barriers	Correlation coefficient	0.422	0.354	--------
	P value	0.001*	0.001*	--------

Pearson's correlation coefficient

Discussion

A descriptive cross sectional study was conducted to assess the patient, practice and dentist related barriers among practicing dentists of Bangalore city. In this study, majority 171 (42.8%) practicing dentists were in the age group of 35-44 years ,which is Similar to the study done by Nagarajappa R et al.[4] Whereas, in a study done by Arheiam A et al[3]85% were in the age group of < 35 years . In this study, majority 215 (53.7%) were males which is similar to the studies done by Nagarajappa R et al[4], KikwiluEN et al, [8]Ghasemi H et al.[5]Whereas,in the studies done by Arheiam A et al,[3]Tseveenjav B et al,[7]majority were females .In the present study majority 209 (52.3%) of the practicing dentists had BDS degree and 191 (47.7%) has MDS degree. Whereas, in the study done by Nagarajappa R et al[4]majority of the practicing dentists has MDS degree.

With respect to practice sector, in the present study, majority of the practicing dentists has private practice .Whereas, in the studies done by Arheiam A et al,[3] Tseveenjav B et al,[7] majority of the practicing dentists works in a government sector.

In the current study, majority 186 (46.50%) has ≤ 5 years of experience, Similar to the distribution in the studies

done by Arheiam A et al[3] and Nagarajappa R et al[4] Whereas, in the study done by Kikwilu.EN et al[8] majority had ≥11 years of experience.

This study shows that practicing dentists of Bangalore city perceived patient-related barriers as the most prominent barrier to the provision of preventive dental care. This finding is similar in the studies done by Arheiam A et al[3] , Ghasemi H et al [5],Nagarajappa R et al [4] Kikwilu.EN et al[8]and Tseveenjav B et al.[7]

In the present study, among the 4 patient related barriers ,patient's ignorance of regular dental visits were ranked high by practicing dentists Whereas, in the study done by Arheiam A et al[3] the highest ranked patient related barrier was found to be patient's poor knowledge of the potential of caries prevention. The possible inference for the patient's ignorance of regular dental visits could be time, financial factors, psycho social factors such as dental anxiety, lifestyle and other reasons.With respect to the 4 dentist related barriers ,in the present study ,preventive dentistry has low priority in the dental curriculum was found to be the highest barrier , Whereas, in the study done by Arheiam A et al[3] no availability of dental auxiliaries to provide preventive care was found to be highest barrier.The possible inference for the preventive dentistry has low priority because the current undergraduate dental curriculum do not effectively prepare dentists for prevention oriented treatment.Among 4 practice related barriers, in the present study, the highest ranked barrier was found to be that traditionally, dentistry relies on treatment not on prevention, this finding is similar in the study done by Arheiam A et al [3] this could be that dentists appear unwilling to adopt strategies of preventive approach, despite the fact that majority of the oral diseases are preventable.

In the present study, females have reported higher mean scores than males for patient and practice related barriers .However, the patient, dentist and practice related barriers are not significantly associated with gender. This finding is similar to the study done by Arheiam A et al[3]Whereas,in the study done by Nagarajappa R et al[4] the association was found to be statistically significant with patient and practice related barriers and females have reported highest mean scores for all the three barriers. In the study done by Ghasemi H et al[5] the association of gender was found to be statistically significant with practice and dentist related barriers and the highest mean scores for all the three barriers was reported by males than females.

Females reporting higher mean scores for the patient and practice related barriers than males could be because females are more positive and interested in providing preventive dental care, which sequentially could lead to more awareness of barriers to preventive dentistry.In the present study, there was no significant association of patient, dentist and practice related barriers with qualification, however, the BDS qualified dentists have reported the higher mean scores for the dentist and practice related barriers. Whereas, in the study conducted by Nagarajappa R et al[4] there was a significant association of qualification with patient and practice related barriers .The possible reason for BDS qualified dentists reporting higher scores could be lack of education about the benefits of health promotion and also the lack of necessary information to provide appropriate advice to their patients.

In this study, there was no significant association of all the three barriers with the practice sector, however dentists with mixed practice reported the higher mean scores for all the three barriers. Whereas, in the study done by Arheiam A et al[3] the association was found to be significant with patient and practice related barriers and dentists having private practice have reported higher mean scores for the patient and practice related barriers. In the study done by Ghasemi H et al[5] dentist and practice related

barrier was found to be significantly associated with the practice sector, and the dentists having mixed practice reported the higher mean scores for dentist and practice related barriers. Similarly, in the study done by Tseveenjav B et al[7] showed a significant association.

The possible inference for the dentists with mixed practice reporting the higher mean scores for all the three barriers could be nature of their working environment, their working hours and their duties in the sector.

Based on years of experience all the three barriers are not found to be statistically significant. However, practicing dentists with ≤ 5 years of experience have reported the higher mean scores for the patient and dentist related barriers. This finding is similar to the studies done by Arheiam A et al[3] and Kikwilu.EN et al[8] Whereas, in the study done by Nagarajappa R et al[4] there was a significant association of dentist and patient related barriers with years of experience and the dentists having ≥ 5 years of experience has reported the higher mean scores for patient and practice related barriers. Similarly, in the study done by Tseveenjav B et al[7] there was a significant association.

In this study, a positive correlation was found between the patient practice and dentist related barriers. In the study done by Nagarajappa R et al[4] the barriers correlated strongly with each other. Whereas in the study done by Tseveenjav B et al[7] dentist's years of work experience were positively, but preventive knowledge score negatively associated with their agreeing about barriers to oral health education activities.The possible inference for the correlation could be that the barriers to the provision of preventive care relate to patient's attitudes which includes their level of education and awareness, patient's affordability status as well as the traditional treatment oriented approach among dentists.The possible limitations of the study could be Use of quantitative methods for data collection. The recommendations of this study include further research on the barriers to preventive dental care as perceived by patients would help to validate dentist's views and identify areas of mutual concern, thereby, providing a foundation for the better implementation of preventive care. Greater emphasis should be given on dental health education and public health programmes to increase patient's awareness of the importance and value of preventive dentistry. Budget allocation for the promotion of preventive aspects and to conduct CDE programmes for dentists.With the exponential growth of dental science, dentists need to keep informed their practices according to the best available scientific evidences [9].

Conclusion

To conclude, this study has found that the main barriers to the provision of preventive dental careis related to patients attitudes, affordability to preventive care and traditional/ conservative treatment oriented practice among dentists. However, these barriers had been perceived by dentists. Therefore, to validate this research, further studies on patients perceived barriers to preventive dental care should be conducted. Greater emphasison dental health education and public health programmes to increase patient's awareness of the significance and value of preventive dentistry should be made. Provision of Budget and time for the promotion of preventive aspects and CDE programmes to be conducted for dentists.

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