WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 11, 1430-1440. Research Article ISSN 2277– 7105

ASSESSMENT OF PRACTICE OF PREVENTIVE DENTISTRY AMONG ORAL HEALTH CARE PROFESSIONALS IN CHENNAI – A CROSS-SECTIONAL SURVEY

[1*]Dr. Janak Harish Kumar, [2]Dr. A. Leena Selvamary, MDS, [3]Dr. M. B. Aswath Narayanan, B.Sc., MDS, [4]Dr. S. G. Ramesh Kumar, MDS and [5]Dr. A. Sujatha, MDS

[1]Intern, Department of Public Health Dentistry, Tamilnadu Government Dental College and Hospital, Chennai.

[2,4,5]Assistant Professor, Department of Public Health Dentisty, Tamilnadu Government Dental College and Hospital, Chennai.

[3]Professor & Head, Department of Public Health Dentistry, Tamilnadu Government Dental College and Hospital, Chennai.

Article Received on
17 April 2018,

Revised on 07 May 2018,
Accepted on 28 May 2018,

DOI: 10.20959/wjpr201811-12577

***Corresponding Author**
Dr. Janak Harish Kumar
Intern, Department of Public Health Dentistry, Tamilnadu Government Dental College and Hospital, Chennai.

ABSTRACT

Introduction: Oral diseases continue to be one of the major problems in our society. Most of the oral diseases such as Dental caries, Periodontal disease, Malocclusion and Oral cancer have effects which are generally irreversible, yet they are mostly preventable. Despite this most of the dental services currently focus on the treatment of the existing disease. This study aims to assess the practice of Preventive Dentistry among Dental Practitioners in Chennai city. **Methods:** A cross sectional questionnaire survey was designed to assess the practice of Preventive Dentistry among the Dental Practitioners of Chennai city selected by stratified random sampling. Chennai corporation was divided into 15 zones and from each zone 6 Dental Practitioners were randomly selected arriving at a total sample size of 90. A pretested validated questionnaire was self-administered, and the results were analysed using SPS version 22. **Results:** On assessment of what lacked in practicing Preventive Dentistry, it revealed most of the dentists rarely provided diet counselling, educated regarding flossing, practiced topical fluoride application, applied pit and fissure sealants, educated regarding safe water source, educated regarding timetable of shedding, educated regarding space maintainers, or educated regarding pre-orthodontic trainers. The results showed that 22.2%

Dental Practitioners had a below average practice of Preventive Dentistry. **Conclusion:** Preventive Dentistry has long been incorporated into routine practice and this study highlights that still there is lacunae that exist in its practice even though there is sound knowledge of the subject among the Dental Practitioners.

KEYWORDS: Preventive Dentistry, Health Education, Oral Hygiene, Pit and fissure sealants.

INTRODUCTION

Bright and beautiful teeth are an attractive asset as they not only provide self-confidence and improve our value of life but also help in performing valuable functions of mastication and speech.[1] Dental diseases are not directly lethal but have a negative effect on quality of life.[2] A good oral health is pivotal for a good overall health. It is the goal of the dental profession to help the individuals attain and uphold maximum oral health and hygiene throughout their lives. Though most of the oral diseases are preventable, most of the dental services currently provide a treatment oriented approach than a preventive approach.[3]

In the last few decades a shifting trend towards evidence based Preventive Dentistry has been widely appreciated. Though prevention of oral diseases has been recognised as a combined effort of the dentist, patient and the community, the Dental Practitioners play a vital role in lowering the disease burden of the society. Hence the education and training of Dental Practitioners regarding preventive aspects of dentistry has become an essential part of the dental curriculum[4] thereby creating a positive attitude and awareness of the Dental Practitioners regarding Preventive Dentistry.[5] So Dental Practitioners have the role of not only educating the people on preventive dental measures but also provide early assessment of oral health problems and provision of simple and comprehensive chair side preventive measures.[6] Preventive Dentistry has been widely acclaimed as the reason for declining oral health problems in the society[7] and an important component of future dental services.[8]

One of WHO's priority action areas is the reorientation of the oral health services towards prevention and health promotion.[9] The knowledge, attitude and practices of the Dental Practitioners have to follow this reorientation. Assessing the Dental Practitioners' treatment decisions as influenced by their knowledge and attitude towards Preventive Dentistry has been proven worthwhile.[10] Untold millions of research hours and money have been invested in reaching our present capability to prevent various oral health diseases, but they are not

completely implemented. The study by Saeed et al (2016)[6] reveals that the attitude and practice of the Dental Practitioners regarding Preventive Dentistry is quiet encouraging, whereas the studies by Ghasemi et al (2007),[11] Ahuja et al (2014),[12] Arrheiam et al (2015),[13] Sushanth et al (2015),[14] Premnath et al (2015)[15] and Patil et al (2016)[16] shows even though there is good attitude and knowledge regarding Preventive Dentistry when it comes to practical application there is a void. Although various studies have been made throughout the world regarding the knowledge and attitude of Dental Practitioners towards Preventive Dentistry, very few studies have focussed on practice of Preventive Dentistry. With this background, the present study aims to assess the practice of Preventive Dentistry among Dental Practitioners in Chennai in relation to their gender, qualification and clinical experience.

METHODS

A cross sectional questionnaire survey was designed to assess the practice of Preventive Dentistry among the Dental Practitioners of Chennai city selected by stratified random sampling. Chennai corporation was divided into 15 zones and from each zone 6 Dental Practitioners were randomly selected arriving at a total sample size of 90.

Ethical clearance was obtained from the Institutional Review Board. Information sheet was provided and written informed consent was obtained from the participants. All Dental Practitioners who consented to participate in the survey were included into the study.

The questionnaire used for the study was pretested validated customised questionnaire consisting of 2 sections. The first section included the demographic data. The second section included 30 questions which assessed the practice of Preventive Dentistry about prevention of dental caries, periodontal disease, malocclusion, temporomandibular joint disorder, dental fluorosis, oral cancer and on oral health education. The study was done over a period of 3 months (from July 2017 to September 2017). The questionnaire was self-administered, the data was collected and analysed using SPS version 22.

RESULTS

The study sample consisted of 90 Dental Practitioners of which 47.7% were males and 52.2% were females. (Table 1) On assessment of the questionnaire, it revealed that almost all Dental Practitioners (97.8%) not only attended to the chief complaint of their patients but also educated regarding various other diagnoses in the oral cavity. Majority of the Dental

Practitioners (ranging from 83% to 100%) practised prevention such as health education, oral hygiene instructions regarding brushing techniques, tobacco cessation counselling, prophylactic scaling, habit breaking appliance. (Table 2).

On assessment of what lacked in practicing Preventive Dentistry, it revealed 21.1% rarely or never provided diet counselling, 24.5% seldom educated regarding flossing, 56.6% hardly practiced topical fluoride application, 28.9% rarely applied pit and fissure sealants, 62.2% infrequently educated regarding safe water source, 77.8% never educated regarding timetable of shedding and eruption for children of mixed dentition age, 57.8% never educated regarding space maintainer or space regainers and 78.9% never educated regarding pre-orthodontic trainers. (Table 2) All the Dental Practitioners in the present study used health education aids in their clinics with the most common aid being used as models (75.6%) and least common being magazines (24.4%). (Table 3)

Of the 90 participating Dental Practitioners, 65.6% had completed under-graduation while 34.4% had completed post-graduation. Forty nine percent of Dental Practitioners had less than 5 years of clinical experience whereas 51% Dental Practitioners had clinical experience of more than 5 years. (Table 1) A comparative analysis was done to determine the influence of qualification and years of clinical experience over the practice of Preventive Dentistry. Chi square test revealed that there was no significant influence of qualification or years of clinical experience over practice of Preventive Dentistry ($p>0.05$).

A model was formed to assess the correct practice of Preventive Dentistry for various clinical scenarios by addition of score 1 for every right preventive practice. With 18 clinical scenarios among the questionnaire provided, the lowest score obtainable is 0 and highest is 18. The scores of the participants ranged from 1 to 16 with mean score being 11.1 and median and mode being 12. Considering the mean of highest and lowest score (9), 22.2% participants had a below average practice of Preventive Dentistry.

Table 1: Demographic Data.

Demographic Data	N	%
Males	43	47.7%
Females	47	52.2%
BDS graduates	59	65.6%
MDS graduates	31	34.4%
Clinical experience <5 years	44	49%
Clinical experience >5 years	46	51%

Table 2: Assessment Of Practice Of Preventive Dentistry.

S.No.	Questions	Choices	Total	
			N	%
1	How often do your patients receive diet counselling?	Default for all patients	26	28.9
		Only for special cases	45	50.0
		Rarely / occasionally	17	18.9
		Never	2	2.2
2	When a patient comes to you with one complaint and you find various other diagnoses in oral cavity that can be prevented	Attend to the complaint and yourself educate the patients	88	97.8
		Ask hygienist or others to educate regarding dental diseases	2	2.2
3	How often do you teach flossing to your patients?	Default for all patients	28	31.1
		Only for special cases	40	44.4
		Rarely / occasionally	14	15.6
		Never	8	8.9
4	How often do you advise the timetable for shedding and eruption of teeth?	Default for all children	20	22.2
		Only for special cases	50	55.6
		Rarely / occasionally	17	18.9
		Never	3	3.3
5	Do you advise habit breaking appliances in your clinic?	Yes	69	76.7
		No	21	23.3
6	Appliance do you advise for Mouth breathing	Yes	41	45.6
		No	46	51.1
		Refer to specialist	3	3.3
7	Appliance do you advise for Tongue thrusting	Yes	57	63.3
		No	30	33.3
		Refer to specialist	3	3.3
8	Appliance do you advise for Thumb sucking	Yes	58	64.4
		No	29	32.2
		Refer to specialist	3	3.3
9	Appliance do you advise for Lip biting	Yes	26	28.9
		No	61	67.8
		Refer to specialist	3	3.3
10	How often do you provide mouth guards in your clinic?	Only for special cases	39	43.3
		Rarely / occasionally	31	34.4
		Never	20	22.2
11	After completion of comprehensive treatment procedures how often do you call your patients for follow up visits?	3 months	29	32.2
		6 months	53	58.9
		1 year	6	6.7
		Never	2	2.2

Table 3: Percentage Of Health Education Aids Used.

Health Education Aids	Total	%
Posters / Charts	56	62.2
Audios/ Videos	42	46.7
Pamphlets	35	38.9
Counselling	56	62.2
Models	68	75.6
Magazines	22	24.4

DISCUSSION

Previously, a trend towards the implementation of preventive methods in dentistry was considered discernible, but in the recent years, there has been a noticeable change in the attitude and acceptance by the professionals and the public. In India, the concept of importance of early diagnosis and proper treatment as a method of preventing the extension of disease is now well-established, and still there is more attention given to rehabilitation.

The primary objective of patient education is to motivate each patient to assume positive and responsible attitudes towards establishing good dental health. Health education aids are designed to impart information about health in such a way that the recipient is motivated to use that information for the protection or advancement of his own, his family's or his community's health. In the present study, all the Dental Practitioners used some form of health education aids in their clinics with models being most common. In the present study, 54.72% Dental Practitioners provided oral hygiene instructions to all patients on a regular basis. This is comparatively lesser when compared to studies by Ramya R et al,[5] Saeed et al,[6] and Arheiam and Bernabe.[13] Although majority of the Dental Practitioners in the study provided regular oral hygiene instructions, 24.5% of Dental Practitioners seldom taught flossing to their patients. This might be because of low usage of flossing techniques by the Indian population. Similar results were seen in a study by Jamjoum H[17] where in 93.8% of the population did not floss. Prevention of oral cancer mainly focuses on modifying habits associated with the use of tobacco. In the present, study around 68.3% of the Dental Practitioners provided Tobacco Cessation Counselling to susceptible patients in their clinics. This is similar to the studies by Ramya R et al,[5] Saeed et al,[6] and Arheiam and Bernabe.[13] These results were higher compared to the studies by Warnakulasuriya KAAS and Johnson NW,[18] and Chestnut and Binnie.[19]

Malocclusions caused by environmental factors can be minimised by preventive orthodontics. Early or interceptive orthodontics cannot be recommended for all orthodontic problems since

in many instances early treatment may complicate or make more difficult treatment at a later age. In the present study, 76.7% of the Dental Practitioners administered habit breaking appliances in their clinics. This is considerably better when compared with the study by Patil et al.[16] The most common habit breaking appliance was for thumb sucking (64.4%) and the least common was for lip biting (28.9%). 72.2% Dental Practitioners preferred to wait and watch during the ugly duckling stage in a child. 58.9% Dental Practitioners administered functional appliances in their clinics for patients with skeletal malocclusion. But only 10% of Dental Practitioners administered preorthodontic trainers in conditions which warranted it. This is in contrast to the study by Patil et al[16] where only 28.9% Dental Practitioners provided myofunctional appliances in their clinics. On an average only 30.6% Dental Practitioners administered space maintainer and space regainers in their clinics. This is similar to study by Patil et al.[16]

The recognition of nutritional problems, the evaluation of diets, and the design of appropriate recommendations for nutritional improvement are among the most important phases of professional preventive care that a dentist can provide for his patients. In the current study 21.1% of the Dental Practitioners rarely provided diet counselling on a regular basis. A study by Franki et al (2014)[20] showed that many Dental Practitioners provided either limited dietary advice or nothing at all contrary to which studies by Ramya R et al,[5] Saeed et al,[6] and Arheiam and Bernabe[13] showed diet counselling was better implemented. In the present study, 44.4% of the Dental Practitioners used pit and fissure sealants in their clinics when warranted. This is similar to studies by Arheiam and Bernabe[13] and Patil et al[16] but comparatively less to studies by Premnath et al[15] and Riley et al.[21] In the current study, 36.7% of the Dental Practitioners administered topical fluoride application to their patients. This is in line with studies by Arheiam and Bernabe[13] and Patil et al[16] but lower when compared to studies by Saeed et al,[6] Premnath et al[15] and Riley et al.[21] The reduced usage of pit and fissure sealants and topical fluoride application as evident in this study might be because these procedures require specialised equipment and materials and the patient's unwillingness to pay for the services. Majority of the Dental Practitioners have not paid enough attention to the importance of fluorides in caries prevention as evident in many studies.[11, 13, 16, 22, 23, 24]

Fluorosis is a major health problem in India with over 65 million people at risk and 6 million children seriously affected.[25] Hence the dentist in practice has an important role in assessing

the patient's connection with high levels of fluorides in community water. In the present study only 37.8% of the Dental Practitioners provided patient education for safe water service. Traumatic injuries are very common in children who play sports, especially contact sports. In a study conducted by McNutt et al,[26] 56% of all concussions were suffered when mouth guards were not worn revealing that trauma related to sports is more prevalent. In the present study, only 43.3% Dental Practitioners suggested mouth guards in clinics for high risk patients such as those involved in boxing, rugby, hockey and other contact sports. Regular dental visits allow the Dental Practitioners to prevent, diagnose and treat problems early. In the present study, almost 58.9% Dental Practitioners regularly recalled their patients every 6 months. A study by Giannobile et al[27] recommends regular dental visits, at intervals determined by a dentist.

The limitation of this study is the possibility of Dental Practitioners giving favourable responses than the actual clinical practices as seen in many questionnaire-based surveys leading to social desirability bias. The study group was selected from one city only. It is recommended that further studies assessing the practice of Preventive Dentistry could be conducted in other urban and rural areas to provide visualisation of the scenario at large which could specifically delineate the need of the hour.

CONCLUSION

Preventive approach can reduce the burden of oral health problems, as cited by WHO. Dental Practitioners are the persons who can convey evidence-based knowledge of oral healthcare to public, hence they influence majorly their patients' oral health‐related behaviour. Preventive Dentistry has long been incorporated into routine practice and this study done in a metropolitan city like Chennai highlights that still there is lacunae that exist in its practice even though there is sound knowledge of the subject among the Dental Practitioners. Dental surgeons may be motivated to improve Preventive Dental services by improving focus on Preventive Dentistry in Dental curriculum, continuing education programs on Preventive Dentistry and increased support for Prevention-related researches.

REFERENCES

1. Saintrain MVdL, de Souza EHA. Impact of tooth loss on the quality of life. Gerodontology. 2012; 29(2): 632-36. doi: 10.1111/j.1741-2358.2011.00535.x

2. Joshipura KJ, Willett WC, Douglass CW. The impact of edentulousness on food and nutrient intake. J Am Dent Assoc., 1996; 127: 459-67. doi: 10.14219/jada.archive.1996.0237
3. Nuca CI, Amariei CI, Paris SD. Preventive Dentistry: Current working practices of Dental Practitioners from the south‐eastern region of Romania. Oral Health Dent Manag, 2011; 10: 131‐42.
4. Garcia RI, Sohn W. The paradigm shift to prevention and its relationship to dental education. Journal of dental education, 2012; 76(1): 36-45.
5. Ramya R, Ajithkrishnan CG, Thanveer K. Knowledge, Attitude and Practice of Preventive Dentistry Among Private Dental Practitioners in Vadodara, India. J Oral Health Comm Dent., 2015; 9(2): 69-80.
6. Saeed A, Suhaib F, Gul H, Kaleem M. Assessment Of Dentist's Attitude And Practice Regarding Preventive Dentistry In Teaching Hospitals Of Rawalpindi, Pak Oral Dental J. 2016 Dec 1; 36(4).
7. Petersson HG, Bratthall D. The caries decline: a review of reviews. Eur J Oral Sci., 1996; 104: 436-443. doi: 10.1111/j.1600-0722.1996.tb00110.x
8. Eklund SA. Changing treatment patterns. J Amer Dent Assoc., 1999; 1 30: 1707-1712. doi: 10.14219/jada.archive.1999.0126
9. Petersen PE, Estupinan-Day S, Ndiaye C. WHO's action for continuous improvement in oral health. Bull World Health Organ, 2005; 83: 642.
10. Brown G., Manogue M. and Rohlin M. Assessing attitudes in dental education: is it worthwhile? Br Dent J, 2002; 193: 703-707. doi: 10.1038/sj.bdj.4801665
11. Ghasemi H, Murtomma H, Torabzadeh H, Vehkalahti MM. Knowledge of and attitude towards preventive dental care among Iranian Dental Practitioners. Eur J Dent., 2007; 1: 222‐9.
12. Ahuja N, Pramila M, Krishnamurthy A, Umashankar GK, Sharma N. Knowledge and attitude towards preventive dental care among dental faculties in Bangalore city. J Indian Assoc Public Health Dent., 2014 Apr 1; 12(2): 93. doi: 10.4103/2319-5932.140261
13. Arheiam A, Bernabé E. Attitudes and practices regarding Preventive Dentistry among Libyan Dental Practitioners. Community Dent Health, 2015 Sep 1; 32: 174-9. doi: 10.1922/CDH_3520Arheiam06
14. Sushanth VH, Kalra DD, Kumar NP, Prashant GM, Bhate P, Imranulla M. Assessment of knowledge, attitude, and practice regarding preventive options in oral care among Dental

Practitioners in Davangere city, Karnataka: A cross-sectional study. Dent Med Res., 2015; 3: 20-5. doi: 10.4103/2348-1471.149582

15. Premnath P, John J. Knowledge attitude and practice toward preventive dental care among dental professionals in Chennai. J Educ Ethics Dent., 2015; 5: 20-4. doi: 10.4103/0974-7761.178023
16. Patil RU, Sahu A, Kambalimath HV, Panchakshari BK, Jain M. Knowledge, Attitude and Practice among Dental Practitioners Pertaining to Preventive Measures in Paediatric Patients. J Clin Diagn Res: JCDR, 2016 Dec; 10(12): ZC71. doi: 10.7860/jcdr/2016/22300.9122
17. Jamjoom HM. Preventive Oral Health Knowledge and Practice in Jeddah, Saudi Arabia. J KAU: Med Sci., 2001; 9: 17–25. doi: 10.4197/med.9-1.3
18. Warnakulasuriya KAAS, Johnson NW. Dental Practitioners and oral cancer prevention in the UK: opinions, attitudes and practices to screening for mucosal lesions and to counselling patients on tobacco and alcohol use: baseline data from 1991. Oral Dis., 1999; 5: 10-4. doi: 10.1111/j.1601-0825.1999.tb00057.x
19. Chestnut IG, Binnie VI. Smoking cessation counselling; a role for the dental profession? Br Dent J., 1995; 179: 411–415. doi: 10.1038/sj.bdj.4808944
20. Franki J, Hayes MJ, Taylor JA. The provision of dietary advice by Dental Practitioners: A review of the literature. Community Dent Health, 2014 Mar 1; 31(1): 9-14. doi: 10.1922/CDH_3297Hayes06
21. Riley JL 3rd, Gordan VV, Rindal DB, et al; Dental PBRN Collaborative Group. Preferences for caries prevention agents in adult patients: findings from the dental practice–based research network. Community Dent Oral Epidemiol. 2010; 38(4): 360-370. doi: 10.1111/j.1600-0528.2010.00547.x
22. Al Shalaan TA, Wyne AH. Practices and attitude of general Dental Practitioners in Saudi Arabia towards various caries prevention methods. Pak Oral Dental J. 2002; (22): 175-80.
23. Tseveenjav B, Vehkalahti M, Murtomaa H. Oral health and its determinants among Mongolian Dental Practitioners. Acta Odontol Scand 2004; 62: 1-6. doi: 10.1080/00016350310008003
24. Moon H, Paik D, Horowitz AM, Kim J. National survey of Korean Dental Practitioners' knowledge and opinions: dental caries etiology and prevention. J Public Health Dent., 1998; 58: 51-56. doi: 10.1111/j.1752-7325.1998.tb02990.x
25. Susheela AK. A Treatise on Fluorosis. 3rd ed. New Delhi: Fluorosis Research & Rural Development Foundation; 2007.

26. McNutt T, Shannon SW, Wright JT, Feinstein RA. Oral trauma in adolescent athletes: a study of mouth protectors. Pediatr Dent., 1989 Sep; 11(3): 209-13.
27. Giannobile WV, Braun TM, Caplis AK, Doucette-Stamm L, Duff GW, Kornman KS. Patient stratification for preventive care in dentistry. J Dent Res., 2013 Aug; 92(8): 694-701. doi: 10.1177/0022034513492336