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Assessment of Knowledge and Attitudes towards Preventive Dentistry amongst the Dentists of Prayagraj City, India

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Abstract: ***Introduction: The knowledge and attitude of the dentist towards oral health care can provide a framework for their professional work. Since dentists are the people who convey evidence- based knowledge of oral health care to the public, they also influence their patient's oral health related behaviour. Objective: To assess the knowledge and attitude towards preventive dentistry amongst the dentists of Prayagraj city, India. Methods: A cross- sectional study was conducted amongst 90 dental practitioners of Allahabad city. The data was collected by means of a self-structured questionnaire, which consisted of 28 questions relating to knowledge and attitude regarding preventive dental care. Results: The results revealed that 24.4% dentists performed diet counselling. Almost 75.6% respondents believed that regular dental check-ups are important in preventing oral diseases and 48.9% dentists had an opinion that application of topical fluoride prevents dental caries in the future. Conclusion: The results of this study demonstrated unsatisfactory knowledge and awareness regarding preventive dentistry amongst the dental practitioners.***

Keywords: Attitudes, Dentistry, Preventive, Practitioners

1. Introduction

Dental caries is one of the most common childhood diseases which can have a great impact on the quality of life. However, the progression and consequences of dental caries can be reduced or eliminated by applying preventive dental practices and early intervention strategies at public and individual levels. Epidemiological data has shown that the widespread use of fluorides has accounted for the declining trends of dental caries in developed countries at the end of the 20th century[1] On the other hand, the prevalence of dental caries in developing countries remained high which might be explained by less preventive oriented dental services and adoption of a modernised life style.[2]

Preventive dentistry is recognized as an integral part of modern dental services and an essential component of dental curriculum.[1,3] Effectiveness and successfulness of oral health promotion programs requires 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.[4-6] This has been one of the central themes of curricula revisions.[7-10]

An attitude can be defined as "a mixture of beliefs, thoughts and feelings that predispose a person to respond in a positive or negative way to objects, people, processes or institutions."[11] Dentists' attitudes towards care options influence their clinical decision making[12] and vary according to their background and professional factors.[13]

Moreover, the relationship between knowledge, attitude and practice seems to be stronger among professionals than among the common population, supporting the potential to train a prevention-oriented workforce.[14,15]

Nevertheless, to our knowledge, no study has been conducted in Prayagraj City, that assess the knowledge and attitude towards preventive dentistry amongst the clinicians. Thus, the present study was done to assess the knowledge and attitudes of dental practitioners towards preventive dentistry based on their self-perceived competency in providing preventive care.

2. Materials and Methods

Study design and study population

The present study is a descriptive, cross-sectional survey which comprised of 90 dental practitioners of Prayagraj city. A pretested, self-administered, close-ended questionnaire consisting of 24 knowledge related questions. Attitude related questions were taken on semantic differential scale.

Using the semantic differential method, a pre-designed set of 6 pairs of bipolar adjectives, which describe preventive

dentistry was taken. The respondents were asked to describe their attitudes by choosing one option; the higher the score, the more positive the attitude.

Inclusion and exclusion criteria

Inclusion criteria was that all the practitioners who agreed to participate in the study were included. The practitioners who did not responded after three repeated attempts, who did not completely filled the questionnaire and who did not gave written informed consent to participate were excluded from the study.

Pilot study and pretesting of the questionnaire

Pilot study was conducted among 10 students to determine the feasibility of the study. These participants were excluded from the final sample. Cronbach's coefficient was found to be 0.78 which signifies an acceptable internal reliability of the questionnaire. For testing the validity, the content validity ratio was also calculated by using item-rated content validity indices. This was achieved by taking the responses on the dichotomous scales where the academician indicated whether an item is favorable (score of + 1) or unfavorable (score of 0). The content validity ratio was found to be as 0.88 by the panel of four academicians. In addition, there were no changes required in the questionnaire as a result of pretest.

Ethical approval and informed consent

The study protocol was approved by the Institutional Review Board and ethical approval was granted for the same. A written informed consent form was also obtained from all the participants.

Data collection

The data was collected in 2 parts: Firstly, the list of dental practitioners was obtained from the local branch of Indian Dental Association (IDA) in Prayagraj city. Secondly, a pre-tested questionnaire was administered to the dental practitioners through emails. In case of any queries, which the respondents had, were clarified by the investigator. All questionnaires were collected from the dental practitioners through emails. However, if any respondent did not reply back after 2-3 successive follow-ups were not contacted again for the study. Finally, after receiving the questionnaires, they were checked carefully for their completeness.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics-version 21 (IBMCorp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.) Descriptive statistics included calculation of mean and standard deviation. Data distribution was assessed for normality using the Shapiro-Wilk test. Categorical data were compared using the Chi-square test. All values were considered statistically significant for a value of $p \leq 0.05$.

3. Results

Table 1 Shows the socio demographic profile of the participants

Age in years	Mean age	Standard Deviation
A. 20- 35 years B. 36- 50 years C. 51- 65 years D. 66-80 years E. 81-95 years	33.21	10.72

Table 2 Shows the mean scores related to the knowledge of the participants

Knowledge aspects of the dentist	All (n= 90)		Men (n= 39)		Women (n=51)	SD	P value*
	Mean	SD	Mean	SD	Mean		
Caries related Q1.The frequency of sugar consumption plays a greater role in producing caries than does the total amount of sugar consumed.	3.31	1.07	3.31	1.15	3.31	1.02	0.97
Q2. Sealant is effective in the prevention of pit and fissure caries in newly erupted molars.	3.26	0.931	3.13	0.95	3.35	0.91	0.25
Q3.A restored tooth is more likely to be lost than is a sound one.	1.98	1.54	1.77	1.38	2.14	1.64	0.26
Q4. Examining a newly-erupted tooth with a sharp explorer will damage enamel rods and predispose the tooth to caries.	2.54	1.51	2.26	1.51	2.76	1.49	0.11
Q5. A white- or brown-spot lesion that is visible on a wet tooth surface has penetrated all the way through the enamel.	2.72	1.37	2.69	1.36	2.75	1.39	0.85
Fluoride related Q6.Fluoridation of drinking water in regions with low fluoride is an effective, safe, and efficient way to prevent dental caries.	3.08	1.20	2.62	1.29	3.43	1.00	**0.001**
Q7.Rinsing teeth with less water after tooth brushing will increase the effect of fluoride that is in the toothpaste.	1.64	1.44	1.10	1.07	2.06	1.55	**0.001**
Q8.The use of fluoride toothpaste is more important than brushing technique in preventing caries.	1.56	1.47	1.29	0.20	1.84	1.54	**0.033**
Relations of general and oral health Q9.Having dental problems can lead to general health problems	3.52	0.89	3.23	1.13	3.75	0.56	**0.006**
Periodontal disease Q10.Bleeding on probing is the most indicating sign than gingival swelling of periodontal disease	3.54	0.76	3.36	0.93	3.69	0.58	**0.044**
Q11.Using toothbrush and dental floss is the most effective measure to prevent periodontal disease	3.43	0.72	3.31	0.73	3.53	0.70	0.149
Q12.Fluoride is helpful in preventing dental caries and promoting periodontal health	2.96	1.14	2.67	1.26	3.18	0.99	**0.035**
Q13.Periodontal disease is associated with cardiovascular disease, low birth weight and also problems in diabetes control	2.94	1.19	2.62	1.22	3.20	1.11	**0.021**

Q14.Rinsing after food with water is important in the prevention of periodontal disease	3.01	0.90	2.87	0.97	3.12	0.84	0.20
Oral cancer related Q15.Majority of oral cancer are diagnosed at 60 years of age or older	1.53	1.30	1.38	1.35	1.65	1.27	0.34
Q16.Early diagnosis of oral cancer improves the oral recovery	3.16	0.73	3.23	0.70	3.10	0.75	0.39
Q17.Oral cancer screening is an inexpensive, safe, and non invasive method for early detection of oral cancer	3.18	0.71	3.21	0.69	3.16	0.73	0.75
Q18.Tobacco, alcohol, and lower consumption of fruits and vegetables are the real risk factors for oral cancer	2.89	1.07	3.03	0.90	2.78	1.18	0.29
Q19.Best way to prevent oral cancer is by health education rather than surgery or medicine	2.72	1.28	2.59	1.27	2.82	1.29	0.39
Malocclusion related Q20.Care of deciduous dentition and timely restoration of carious teeth are important to prevent malocclusion in permanent teeth	3.97	4.20	3.36	0.74	4.43	5.53	0.23
Q21.Prolonged retention of deciduous teeth is a risk factor for malocclusion	3.36	0.79	3.15	0.87	3.51	0.70	**0.035**
Q22.Thumb sucking, nail biting, lip biting have an adverse effect on the future alignment of permanent teeth	2.99	1.12	2.64	1.36	3.25	0.82	**0.010**
Q23.Space maintainer is a device used to maintain the space created by the premature loss of deciduous tooth	2.40	1.48	2.00	1.52	2.71	1.39	**0.024**
Dental visit related Q24.Regular dental check-ups are important in preventing oral diseases	3.74	0.46	3.85	0.36	3.67	0.51	0.068

*Chi-Square Test

Table 3: Shows frequency distribution of the participants knowledge levels

Knowledge aspects of the dentist	Fully Disagree (%)	Disagree (%)	Don't know (%)	Agree (%)	Fully Agree (%)
Caries related Q1.The frequency of sugar consumption plays a greater role in producing caries than does the total amount of sugar consumed.	4.4	4.4	6.7	24.4	60.0
Q2. Sealant is effective in the prevention of pit and fissure caries in newly- erupted molars.	0.0	11.1	0.0	41.1	47.8
Q3.A restored tooth is more likely to be lost than is a sound one.	24.4	24.4	1.1	28.9	21.1
Q4. Examining a newly- erupted tooth with a sharp explorer will damage enamel rods and predispose the tooth to caries.	15.6	17.8	0.0	30.0	36.7
Q5. A white- or brown-spot lesion that is visible on a wet tooth surface has penetrated all the way through the enamel.	8.9	17.8	4.4	30.0	38.9
Fluoride related Q6.Fluoridation of drinking water in regions with low fluoride is an effective, safe, and efficient way to prevent dental caries.	4.4	13.3	1.1	32.2	48.9
Q7.Rinsing teeth with less water after tooth brushing will increase the effect of fluoride that is in the toothpaste.	24.4	36.7	5.6	16.7	16.7
Q8.The use of fluoride toothpaste is more important than brushing technique in preventing caries.	28.9	35.6	3.3	15.6	16.7
Relations of general and oral health Q9.Having dental problems can lead to general health problems	2.2	4.4	0.0	25.6	67.8
Periodontal disease Q10.Bleeding on probing is the most indicating sign than gingival swelling of periodontal disease	0.0	5.6	0.0	28.9	65.6
Q11.Using toothbrush and dental floss is the most effective measure to prevent periodontal disease	0.0	4.4	0.0	43.3	52.2
Q12.Fluoride is helpful in preventing dental caries and promoting periodontal health	2.2	17.8	0.0	42.2	37.8
Q13.Periodontal disease is associated with cardiovascular disease, low birth weight and also problems in diabetes control	2.2	20.2	0.0	36.7	41.1
Q14.Rinsing after food with water is important in the prevention of periodontal disease	0.0	13.3	0.0	58.9	27.8
Oral cancer related Q15.Majority of oral cancer are diagnosed at 60 years of age or older	22.2	42.2	5.6	20.0	10.0
Q16.Early diagnosis of oral cancer improves the oral recovery	0.0	6.7	0.0	64.4	28.9
Q17.Oral cancer screening is an inexpensive, safe, and non invasive method for early detection of oral cancer	0.0	5.6	1.1	63.3	30.0
Q18.Tobacco, alcohol, and lower consumption of fruits and vegetables are the real risk factors for oral cancer	2.2	16.7	0.0	52.2	28.9
Q19.Best way to prevent oral cancer is by health education rather than surgery or medicine	4.4	23.3	2.2	35.6	34.4
Malocclusion related Q20.Care of deciduous dentition and timely restoration of carious teeth are important to prevent malocclusion in permanent teeth	2.2	1.1	37.8	57.8	1.1
Q21.Prolonged retention of deciduous teeth is a risk factor for malocclusion	0.0	6.7	0.0	44.4	48.9
Q22.Thumb sucking, nail biting, lip biting have an adverse effect on the future alignment of permanent teeth	2.2	16.7	0.0	42.2	38.9
Q23.Space maintainer is a device used to maintain the space created by the premature loss of	13.3	24.4	3.3	26.7	32.2

deciduous tooth					
Dental visit related Q24.Regular dental check- ups are important in preventing oral diseases	0.0	0.0	1.1	23.3	75.6

Table 4 Shows the mean scores of the attitude levels of the participants

Attitude levels	All (n= 90)		Men (n= 39)		Women (n=51)		P value*
	Mean	SD	Mean	SD	Mean	SD	
Useful	2.78	0.46	2.77	0.53	2.78	0.41	0.88
Valuable	2.60	0.57	2.49	0.64	2.69	0.51	0.10
Essential	2.59	0.53	2.46	0.60	2.69	0.46	0.049
Scientific	2.04	0.79	1.92	0.73	2.14	0.82	0.205
Efficient	2.20	0.69	2.15	0.67	2.24	0.71	0.582
Easy	2.30	0.74	2.18	0.72	2.39	0.75	0.179
Attractive	2.16	0.83	2.10	0.78	2.20	0.87	0.601
Beneficial	2.28	0.75	2.18	0.75	2.35	0.74	0.279
Reputable	2.0	0.83	1.85	0.77	2.12	0.86	0.127

*Chi-Square Test

4. Discussion

This study shows that the currently implemented training programme in Public Health Dentistry in Dental colleges does not adequately prepare dentists to fulfill their role in providing prevention oriented dental service. The majority of participants declared incompetence in mastering the practical skills of preventive dentistry. In addition, they do not conceive preventive dentistry as beneficial to dentists. The findings of this study are in accordance with other studies regarding the role of dental education in preventive dentistry, all of which have blamed undergraduate curricula for inadequate preparation of dentists. [16,17]

The attitude of dental practitioners towards preventive dentistry is an important factor that can influence their decision to apply preventive dental care[12] and may potentially affect their ability to motivate patients to receive preventive care measures.[13] In our study, although the majority of dental practitioners appreciated the merits of preventive dentistry at the community level, it was considered less reputable, attractive, and beneficial to the dentists. These results mirror previous finding among Iranian senior dental students and dental practitioners.[13] There are several possible explanations for this result. They might be attributed to the low monetary income from the provision of preventive dental care which may reduce the practitioners' interest in providing such care. Previous research has shown that dentists refrain from providing preventive care because of insufficient payment.[18-19]

Apart from oral hygiene instructions, the majority of the participants in this study do not feel themselves competent in applying preventive dental care. These findings are inconsistent with previous reports in this field. According to American Dental Education Association (ADEA) in 2008, most of the senior students consider themselves prepared to provide preventive dental care.[20] Holmes et al. surveyed the graduated alumina and found them particularly competent in treatment and prevention of dental caries.[21] Another study among Mongolian dental students has reported that 68-94% were at least quite competent in practicing preventive dentistry.[15] Further research is needed to explore in depth opinions of dental practitioners regarding the facilitators and barriers of training in preventive dentistry as well as their view of future careers. A qualitative approach using observation of clinical training as well as content analysis of dental curriculum and its goals and structure could inform stakeholders to develop appropriate action plans to implement preventive strategies.

5. Conclusion

The results of this study demonstrated unsatisfactory knowledge and awareness regarding preventive dentistry amongst the dental practitioners. The currently implemented undergraduate education programme in dental colleges does not provide dentists with the required attitude and skills to fulfil their role in providing preventive oriented health services. More efforts are required to tackle this problem and to provide more effective undergraduate education, as well as continuing dental education programmes so that practitioners while starting their practice can be benefited.

References

[1] Eklund SA. Changing treatment patterns. J Am Dent Assoc. 1999; 130: 1707-12.
[2] Moynihan P, Petersen PE. Diet, nutrition and the prevention of dental diseases. Public Health Nutr. 2004; 7: 201-26.
[3] Garcia RI, Sohn W. The paradigm shift to prevention and its relationship to dental education. J Dent Educ. 2012; 76: 36-45.
[4] Rubin RW. Developing cultural competence and social responsibility in preclinical dental students. J Dent Educ. 2004 Apr; 68(4): 460-7.
[5] Crossley ML, Mubarik A. A comparative investigation of dental and medical student's motivation towards career choice. Br Dent J. 2002; 193(8): 471-3.
[6] Waldman HB. Becoming a socially sensitive dentist, a review of some trends. J Public Health Dent. 1970 Spring; 30(2): 109-22.
[7] Sanders RM, Ferrillo PJ Jr. A new school's perspective on clinical curriculum. J Dent Educ. 2003 Dec; 67(12): 1316-9.
[8] Klineberg I, Massey W, Thomas M, Cockrell D. A new era of dental education at the University of Sydney, Australia. Aust Dent J. 2002; 47(3): 194- 201.
[9] Kerosuo E, Ruotoistenmäki J, Murtomaa H. Report on the development of a new dental curriculum at Helsinki. Eur J Dent Educ. 2001; 5(1): 23-30.
[10] Walsh LJ, Seymour GJ. Dental education in Queensland: II. Principles of curriculum de- sign. SADJ 2001; 56(3): 140-6.
[11] Brown G, Manogue M, Rohlin M. Assessing attitudes in dental education: is it worth- while? Br Dent J. 2002 Dec; 193(12): 703-7.
[12] McGlone P, Watt R, Sheiham A. Evidence-based dentistry: an overview of the challenges in changing professional practice. Br Dent J. 2001 Jun; 190(12): 636-9.
[13] Ghasemi H, Murtomaa H, Torabzadeh H, Vehkalahti

MM. Knowledge of and Attitudes towards Preventive Dental Care among Iranian Dentists. Eur J Dent. 2007 Oct; 1(4): 222-9.
[14] Frank E, Hedgecock J, Elon LK. Personal health promotion at US medical schools: a quantitative study and qualitative description of deans' and students' perceptions. BMC Med Educ. 2004 Dec;4(1): 29.
[15] Tseveenjav B, Vehkalahti M, Murtomaa H. Oral health and its determinants among Mongolian dentists. Acta Odontol Scand. 2004 Feb; 62(1): 1-6.
[16] Melbye ML, Armfield JM. The dentist's role in promoting community water fluoridation A call to action for dentists and educators. J Am Dent Assoc. 2013; 144: 65-75.
[17] Macy Study Team, Formicola AJ, Bailit HL, Beazoglou TJ, Tedesco LA. Introduction to the Macy study report. J Dent Educ. 2008; 72: 5-9.
[18] McCann M, Macpherson LM, Binnie VI, Stephen KW. A survey of Scottish primary care dental practitioners' oral cancer-related practices and training requirements. Community Dent Health. 2000; 17: 24-30.
[19] Tomlinson P, Treasure E. Provision of prevention to adults in NHS dental practices and attitudes to prevention. Br Dent J. 2006; 200: 393-7.
[20] Okwuje I, Anderson E, Valachovic RW. Annual ADEA survey of dental school seniors: 2008graduating class. J Dent Educ. 2009; 73: 1009-32.
[21] Holmes D, Diaz-Arnold A, Williams V. Alumni self-perception of competence at time of dental school graduation. J Dent Educ. 1997; 61: 465-72.