

Oral Health Knowledge, Attitude and Practices amongst Health Professionals in Ludhiana, India

Simranpreet Kaur^{1*}, Balpreet Kaur² and Sunny Singh Ahluwalia³

¹Department of Oral Medicine and Radiology, National Dental College and Hospital, Dera Bassi, S.A.S Nagar- 140507, Punjab, India

²Department of Endodontics, UCLA School of Dentistry, California, USA

³Consultant Implantologist, Shivalik Hospital, S.A.S Nagar, Punjab, India

Abstract

Objective: To assess oral health knowledge, attitude towards dental treatment and oral hygiene practices amongst the health care professionals in private hospitals of Ludhiana city.

Methodology: A cross-sectional study of oral health knowledge, attitude towards dental treatment and practices of health professionals (doctors, nurses, technicians and pharmacists) was carried out using self-administered questionnaire. For attitude of health professionals toward dental treatment and oral hygiene practices of health professionals, chi-square test was used.

Results: Males had a higher oral health knowledge score than the females. The doctors had a highest score knowledge followed by pharmacists, nurses and technicians. Attitude towards dental treatment varied. All participants believed that regular visits to the dentist were necessary. The driving factor for their last visit was dental caries. The most common reason mentioned by the health professionals for not visiting the dentists was busy schedule. More than 50% of health professionals brushed their teeth more than 3 minutes. Flossing was more common in females as compared to males and mouthwash was more frequently than floss.

Conclusion: Despite high literacy rate for health care professionals, oral health knowledge was average. They showed a positive attitude towards dental treatment. Oral health knowledge should be inculcated in the curriculum for all health care professionals. This will improve their oral health status and provide knowledge relevant to importance of oral health and its maintenance, as well. If they have an adequate knowledge, they can further teach the masses.

Keywords: Oral health knowledge; Oral hygiene practice; Community program

Introduction

Oral hygiene is the practice of keeping the mouth healthy and clean by brushing and flossing to prevent tooth decay and gum disease [1]. Oral health means more than healthy teeth. The World Health Organization (WHO) has a definition of good oral health: "Oral health means being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the mouth and oral cavity" [2]. Several oral diseases have important side effects on general health, while systemic conditions may show a mutual influence on oral health. Therefore, oral health care needs to be addressed by a multi-professional approach and should be integrated into comprehensive health-promoting strategies and practices [3]. Optimally, total health care requires the combined efforts of the medical and dental professions [4]. Oral health promotion is needed within health care practices of physicians and nurses. In primary care, physicians meet children and their families regularly in child-health clinics, with excellent opportunities to promote oral health [3]. Raising public awareness about dental check-up may assist in early diagnosis [1]. The affected population needs to receive information on oral diseases, risk factors and measures that can be adopted to prevent them. The change from an unhealthy attitude to a healthy attitude will occur when adequate information and motivation are provided; and adequate practice of the measures is adopted by the subject [5]. Undoubtedly, one of the methods for prevention is to improve the knowledge of the community regarding promotion of health behavior and influence of self-effective methods on preventing diseases [6].

Obstacles to physicians' attending to oral health prevention can relate to their knowledge, work environment, and attitudes [3]. This can be overcome by expanding the oral health work force by training

physicians, nurses, and other nondental professionals to recognize risk for oral diseases. Health care professionals are far more likely to encounter underserved and vulnerable populations than dental professionals, particularly family health and community nurses. Increasing their awareness and knowledge about oral health in general can increase their knowledge and skills in oral health care. Having the ability to identify potential health risk factors such as lifestyle, ethnicity, health status, and social determinants associated with oral health status risk, health care providers can take an active role in health screening to discover any need for clinical preventive services, including dental preventive services, and can detect health problems [7].

During the past 20 years, there has been a reduction in the prevalence of dental caries and periodontal diseases among the population of industrialized countries. In contrast, dental caries and periodontal diseases are increasing in some developing countries especially, where preventive programs have not been implemented properly [8]. With proper knowledge and oral health behavior, health care professionals can play an important role in the oral health education of individuals and groups and act as role models for patients, friends, families and the community at large. Before health professionals are trained as oral

***Corresponding author:** Dr. Simranpreet Kaur, BDS, MDS, Assistant Professor, Department of Oral Medicine and Radiology, National Dental College and Hospital, Dera Bassi, S.A.S Nagar-40507, Punjab, India, Tel: +91 9878880463; E-mail: simransaini2@yahoo.co.in

Received May 27, 2015; Accepted June 24, 2015; Published June 29, 2015

Citation: Kaur S, Kaur B, Ahluwalia SS (2015) Oral Health Knowledge, Attitude and Practices amongst Health Professionals in Ludhiana, India. Dentistry 5: 315. doi:10.4172/2161-1122.1000315

Copyright: © 2015 Kaur S, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

health educators, there is a need to determine the status of their own oral health knowledge and behaviours [4].

So, the present study was done to assess oral health knowledge, attitude towards dental treatment and oral hygiene practices amongst the health care professionals.

Methodology

A cross-sectional study of oral health knowledge, attitude towards dental treatment and practices of health professionals (doctors, nurses, technicians and pharmacists) was designed. Ethical clearance was taken from the institutional ethical committee. It was carried out in Ludhiana city in India. Verbal informed consent was taken from the health professionals and responses from those who agreed to participate in the study were considered. A self-administered questionnaire was designed and distributed among 250 health professionals, out of which 219 were considered because they had filled in the questionnaire completely.

The questionnaire, which was used in the study, consisted of four parts. However, the health professionals were provided with a questionnaire which did not have any clear demarcation between any parts. One question was followed by another without segregation into parts. This was done so as to prevent false positive response from the professionals. The first part comprised of questions relating to demographic data of professionals including age, gender, education and type of health professionals. The second part consisted of nine questions to assess oral health knowledge which included meaning of gingival bleeding, how to prevent gingivitis, what is dental plaque, what dental plaque causes, do sweets affect dental health, do soft drinks dental health, does dental caries affect aesthetics, does total health have any relationship with dental health, is the treatment of toothache as important as any organ of body. The third part included eight questions to evaluate the attitude of health professional towards the dental treatment (have you ever visited the dentist, is regular visit to dentist necessary, what dental treatment was sought during last visit, what was driving factor for last visit, what was the reason for not visiting the dentist, did the dentist explained the procedure before treatment, did the dentist care about the patient properly, did the dentist cared only for the treatment but not the prevention). The fourth part comprised of

three questions related to oral hygiene practices amongst the healthcare professionals, which included what oral hygiene method do you use, what is your brushing frequency and for how much time do you brush your teeth.

Statistical analysis

The oral health knowledge score was calculated by giving a score 'zero' for every wrong answer and score 'one' for every right answer. The individual scores were totalled to yield a final score. The highest score that was possible with this technique was 9, if the health professional answered all the questions correctly, and lowest was zero, if all the answers were wrong. Mean percentage scores were calculated for the oral health knowledge by applying z-test. For attitude of health professionals toward dental treatment and oral hygiene practices of health professionals, chi-square test was used. A P-value of less than 0.05 was considered statistically significant. The data was analyzed by using the SPSS version 17.0 software.

Results

Based on demographic data (Figure 1)

Out of 219 health professionals who responded positively, 79 (36.07%) were male and 140 (63.92%) were female. Most of health professionals were in the age group of 21-40 years (n=186; 84.93%), 13 subjects (5.93%) were below 20 years of age, 18 subjects (8.21%) in the age group of 41-60 years and only 1 subject (0.45%) out of all, was above 60 years of age. Further, diving the data based on profession of health care provider, following results were obtained-83 (37.89%) were doctors, 96 (43.83%) nurses, 15 (6.84%) pharmacists and 25 (11.4%) were technicians.

Oral health knowledge score (Table 1)

Oral health knowledge was calculated by evaluating the response of subjects to various questions in the questionnaire and adding it to give a cumulative score. The responses were considered accurate if they answered according to the following- gingival bleeding indicates gingivitis, gingivitis can be prevented by toothbrushing and flossing, dental plaque refers to soft deposits and it causes inflammation of the

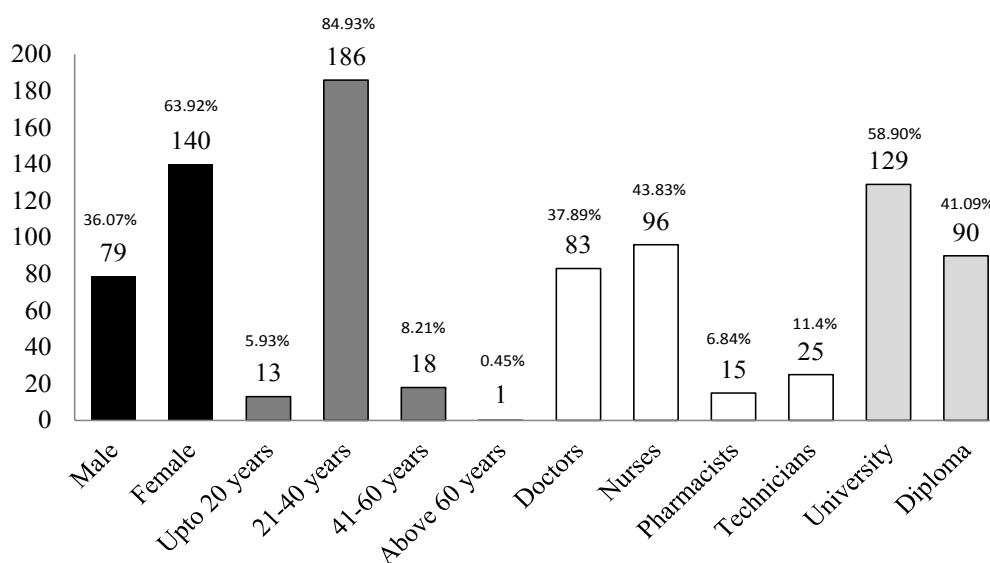


Figure 1: Demographic data.

Characteristics		Mean	N	Std. Dev	P value
Gender	Male	6.35	79	1.441	0.440
	Female	6.16	140	1.542	
Type of Health professional	Doctor	6.93	83	1.276	<0.001
	Nurse	5.71	96	1.391	
	Pharmacist	6.13	15	1.598	
	Technician	5.96	25	1.744	
Education	University	6.66	129	1.338	<0.001
	Diploma	5.61	90	1.527	

Table 1: Oral health knowledge score.

gums, sweets and soft drinks affect dental health negatively, dental caries does affects aesthetics, oral health is related to overall health and treatment of toothache is as important as any organ of the body.

Based on gender, it was observed that the males had a mean score of 6.35 while the females had a score of 6.16. However, the difference was not statistically significant. Based on type of health professional, it was observed that the doctors had a highest score of 6.93 followed by pharmacists with a mean score of 6.13. The nurses had an average score of 5.71 while technicians had an average score of 5.96. There was a statistically significant difference ($p < 0.001$) between the groups. Based on the level of education, it was observed that people who had an University education had a mean score of 5.61 while the diploma holders had an average score of 6.66. There was a statistically significant difference between the groups ($p < 0.001$).

Attitude of subjects toward professional dental care

Attitude of Health professionals towards dental care yielded mixed response. Out of the data collected and analysed, it was observed that the maximum number of technicians had not visited the dentist ever (72%) while almost 50% of doctors had visited the dentist for some treatment or consultation. Nurses and pharmacists equalled in their response (33.3%) regarding likeliness for visiting the dentist. There was no significant difference ($p > 0.001$) between males and females regarding their response to visiting the dentist. However, there was significance difference between opinion amongst diploma holders or university education ($p < 0.001$), with university graduates more likely to visit the dentist. Almost everyone who participated in the study believed that regular visit to the dentist is necessary and it was statistically significant amongst the groups ($p < 0.001$).

Health professionals visited the dentist for many reasons (consultation, extraction, restoration, root canal treatment, scaling, etc.). But the most common reason which they mentioned was scaling (16.4% females and 15.2% males) followed by restoration and root canal treatment. The commonest driving factor for visiting the dentist is

caries in 20% pharmacists followed by 18.1% doctors. Apart from caries; pain, plaque and sensitivity were other common factors for visiting the dentist. Gender, education and type of health professional did not show any statistically significant difference with respect to visiting the dentist. As far as reason for not visiting the dentist is concerned, the most common reason was busy schedule in 15.2% males and 7.9% females. Other reasons for not visiting the dentist were negligence, fear and not having any pain in the tooth. This could be interpreted as- pain is the most important factor for visiting the dentist. Health professionals in all the groups confirmed that the dentist explained the complete procedure before starting the treatment and cared properly for them during the entire length of treatment.

Oral hygiene practices among the health professionals (Table 2)

In all the groups, health professionals used toothbrush and toothpaste for cleaning their teeth (100%). The frequency and duration for which they use toothbrush and toothpaste varied. Flossing was more common in females (9.3%) as compared to males (6.3%). Amongst the type of health professional, it was more frequent in doctors (19.3%). Mouthwash was more frequently used as compared to floss. 33.3% of pharmacists, 31.3% of doctors, 24% of technicians and 16.7% of nurses used mouthwash along with tooth brushing as a cleaning aid. University graduates were more likely to use dental floss (12.4%) and mouthwash (30.2%) as compared to diploma holders where only 2.2% flossed their teeth and 15.6% used mouthwash.

Approximately 50% of health professionals brushed their teeth once a day. However, amongst the various groups females brushed more frequently than the males. Doctors and nurses brushed more frequently than the pharmacists and technicians where 66.3% of doctors and 52.1% of nurses brushed their teeth twice a day. University holders were more likely to brush their teeth in the noon also as compared to diploma holders. However, the results were statistically not significant ($p > 0.001$). More than 50% of health professionals brushed their teeth more than 3 minutes. Males were less likely to brush their teeth for more than 3 minutes as compared to females.

Discussion

Today, medical field has become a joint venture of various healthcare care workers. Doctors, nurses, pharmacists, technicians work in collaboration to provide complete medical care to the patient and society. In the developing nations, there is a high prevalence of oral disease in the society. This can be due to neglect, scarcity of resources, illiteracy, etc. The population at large in such nations consider dental treatment as their least priority. Henceforth, health care workers deal with several patients daily, much more than those dealt by the dentists.

Groups		Methods used (%)						Brushing Frequency (%)			Duration of Brushing (%)	
		Brush		Floss		Mouthwash		Once	Twice	Thrice	Upto 3 mins.	>=3 mins.
		Yes	No	Yes	No	Yes	No					
Gender	Male	100	0	6.3	93.7	22.8	77.2	49.4	48.1	2.5	30.4	69.6
	Female	100	0	9.3	90.7	25	75	40.7	57.1	2.1	25.7	74.3
Type of health professional	Doctor	100	0	19.3	80.7	31.3	68.7	32.5	66.3	1.2	27.7	72.3
	Nurse	100	0	1	99	16.7	83.3	44.8	52.1	3.1	20.8	79.2
	Pharmacist	100	0	0	100	33.3	66.7	60	40	0	33.3	66.7
	Technician	100	0	4	96	24	76	68	28	4	48	52
Education	University	100	0	12.4	87.6	30.2	69.8	36.4	60.5	3.1	29.5	70.5
	Diploma	100	0	2.2	97.8	15.6	84.4	54.4	44.4	1.1	24.4	75.6

Table 2: Oral hygiene practices amongst health professionals.

Due to this reason, we felt the need to assess the oral health related knowledge, attitude and practices of various health professionals in Ludhiana, India.

The questionnaire for the study was adopted from a study conducted by Baseer et al. [4] and it was written in English. The questionnaire was used only in English language because all the participants of the study were high school graduates and could read, write and speak English. It was first of its kind study which was conducted in Ludhiana. The results were based on self-reported data.

In the present study, it was observed that the males had a higher oral health knowledge score than the females. Though, the difference was not statistically significant. Similarly, in study conducted by Rabiei et al. [3], Baseer et al. [4] and Khami et al. [9], analogous results were reported where gender differences were not found. However, several other studies reported contrasting results, such as Ostberg et al. [10], Fukai et al. [11], in which females showed significantly higher oral health knowledge than males.

Further, it was observed that the doctors had a highest score followed by pharmacists, nurses and technicians. There was a statistically significant difference between the groups. This could be due to the fact that doctors have much more personal involvement with the dental patients and have dental department postings before graduation. Henceforth, doctors have higher oral health knowledge score as compare to other health professionals. It was also observed that people who had a university education had a higher score than the diploma holders. There was a statistically significant difference between the groups.

Attitude of health professionals towards dental care was diverse. Out of all the groups, the highest percentage of health professionals who had visited the dentist was the technicians. There was no significant difference between males and females regarding their response to visiting the dentist. However, everyone who participated in the study believed that regular visit to the dentist is necessary and it was statistically significant amongst the groups. This was in accordance to previously reported studies done by Baseer et al. [4] and Timmerman et al. [12]. This may be attributed to more favourable conditions like hospital with proximity of dental centre, discounted fee or free dental treatment as member of health care team and socioeconomic and educational factors.

The most common reason for visiting the dentists is scaling and the commonest driving factor was caries. This was in contrast to the previous studies, Baseer et al. [4] and Doshi et al. [13], where the most common driving factor reported was toothache. This could be due to the fact that people now-a-days are more conscious about their looks.

The most common reason mentioned by the health professionals for not visiting the dentists was busy schedule. Health professionals in all the groups confirmed that the dentist explained the complete procedure before starting the treatment and cared properly for them during the entire length of treatment.

In all the groups, health professionals used toothbrush and toothpaste for cleaning their teeth (100%). Approximately 50% of health professionals brushed their teeth once a day; females brushed more frequently than the males. This was in accordance to study done by Doshi et al. [13] who reported a percentage of 100%. More than 50% of health professionals brushed their teeth more than 3 minutes. Males were less likely to brush their teeth for more than 3 minutes as compared to females.

In the present study, flossing was more common in females as compared to males. Amongst the type of health professional, a higher percentage of doctors used floss. Mouthwash was more frequently used as compared to floss. This was in accordance to study conducted by Baseer et al. [4].

The scientific literature is generally conflicting when it comes to oral health knowledge, attitude and oral health behaviour. Collection of data on this topic will help plan community and preventive oral health care programmes, which could be aimed at teaching the population by the health care workers regarding the oral health. This will help in prevention of the dental diseases. The present study had its limitation in terms of small sample size. Larger studies with larger sample size will help us give a better picture regarding attitude of health care professionals towards oral health knowledge and its care.

Conclusion

There is scarcity of data in scientific literature about oral health knowledge, attitude and oral health behaviour amongst various healthcare professionals. The present study was conducted with an aim to assess oral health knowledge for health professionals. If they have adequate knowledge, they can further teach the masses. Also, we suggest that knowledge regarding oral health care and its importance should be incorporated into the teaching curriculum of all medical and para-medical staff members. This will increase the awareness amongst them regarding oral health care and they could be an asset in community programs at large. Further studies need to be done in various hospitals and private medical centers so as to assess oral health knowledge and steps should be taken to improve it.

References

1. Emmanuel A, Chang'endo E (2010) Oral health related behaviour, knowledge, attitudes and beliefs among secondary school students in Iringa municipality. *DMSJ* 17: 24-30.
2. Håkansson S, Sturesson A (2010) Oral hygiene experience, knowledge of oral health and oral diseases and attitudes about oral health care- A questionnaire study among students of nursing in Zambia.
3. Rabiei S, Mohebbi SZ, Patja K, Virtanen JI (2012) Physicians' knowledge of and adherence to improving oral health. *BMC Public Health* 12: 855.
4. Baseer MA, Alenazy MS, AlAsqah M, AlGabbani M, Mehkari A (2012) Oral health knowledge, attitude and practices among health professionals in King Fahad Medical City, Riyadh. *Dent Res J (Isfahan)* 9: 386-392.
5. Attaullah, Khan M, Ali Khan A (2010) Oral health related knowledge, attitude and practices among patients – a study. *Pakistan Oral & Dental Journal* 30: 186-19.
6. Neamatollahi H, Ebrahimi M, Talebi M, Mana H, Ardabili, et al. (2011) Major differences in oral health knowledge and behaviour in a group of Iranian pre-university students: a cross-sectional study. *Journal of Oral Science* 53: 177-184.
7. Hahn JE, Leah FitzGerald, KeeMarkham Y, Glassman P, Guenther N (2012) Infusing Oral Health Care into Nursing Curriculum: Addressing Preventive Health in Aging and Disability. Hindawi Publishing Corporation, Nursing Research and Practice.
8. Ahmad MS, Bhayat A, Al-Samadani KH, Abuong Z (2013) Oral health knowledge and practice among administrative staff at Taibah university, Madina, KSA. *Eur J Gen Dent* 2: 308-311.
9. Khami MR, Virtanen JI, Jafarian M, Murtomaa H (2007) Prevention-oriented practice of Iranian senior dental students. *Eur J Dent Educ* 11: 48-53.
10. Ostberg AL, Halling A, Lindblad U (1999) Gender differences in knowledge, attitude, behavior and perceived oral health among adolescents. *Acta Odontol Scand* 57: 231-236.
11. Fukai K, Takaesu Y, Maki Y (1999) Gender differences in oral health behavior and general health habits in an adult population. *Bull Tokyo Dent Coll* 40: 187-193.

-
12. Timmerman EM, Hoogstraten J, Meijer K, Nauta M, Eijkman MA (1997) On the assessment of dental health care attitudes in 1986 and 1995, using the dental attitude questionnaire. *Community Dent Health* 14: 161-165.
13. Doshi D, Baldava P, Anup N, Sequeira PS (2007) A comparative evaluation of self-reported oral hygiene practices among medical and engineering university students with access to health-promotive dental care. *J Contemp Dent Pract* 8: 68-75.