

# Knowledge and Attitudes towards Preventive Dental Care among Dental Students

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**Abstract:** *Objectives:* To assess dental students knowledge and attitudes towards preventive dental care. *Methods:* A questionnaire survey was conducted among dental students and level of knowledge was assessed. Higher scores indicated more accurate knowledge. Dentist students' attitudes towards preventive dental care were rated based on responses on a Likert scale (1–7) to nine pairs of bipolar adjectives. The respondents were to choose the response which best described their opinion. Higher scores indicated more positive attitudes. Of 500 responding dentists, 447 (64% men) were deemed eligible for this study. Statistical evaluation was by t-test and the Chi-square test. *Results:* Highest ratings were obtained for knowledge of the role of sugar consumption (Mean±SD: 3.73±0.60), sealants (3.58±0.68), and water fluoridation (3.35±0.81) in caries prevention; the lowest for their knowledge of the superiority of the use of fluoride toothpaste over technique of brushing (1.11±1.09). Dentists' attitudes towards preventive dental care appeared most positive regarding its usefulness (Useful — Useless; 6.67±0.94), value (Valuable — Worthless; 6.59±0.98) to the community and for its status as a scientific (Scientific — Unscientific; 6.47±1.06) subject. Overall, female dentists had more favourable attitudes towards preventive dental care than male colleagues. *Conclusions:* Preventive dentistry should be emphasised in dental education in order to update dentists' knowledge and attitudes regarding preventive dental care.

**Keywords:** Preventive dentistry, Dental care, Dental students, Dental Education

## 1. Introduction

Dental students' knowledge of and attitudes towards oral health care provide the framework for their professional work. Since dentists are the persons who convey evidence-based knowledge of oral health care to public,<sup>1</sup> they also influence their patients' oral health-related behaviour. With the exponential growth of dental science, dentists need to update their practices according to the best available scientific evidences. Dentists' treatment decisions are influenced by their knowledge of and attitudes towards care options,<sup>2</sup> and assessing these is worthwhile.<sup>3</sup>

Preventive approach in dental practice has been cited as a reason for caries decline in recent decades<sup>4</sup> and as a predominant part of the service-mix of dental practices in the future.<sup>5</sup>

## 2. Materials and Methods

The present data were gathered by means of a self-administered questionnaire distributed to Iranian general dental practitioners (GDP) who attended in a major nationwide dental congress in Tehran, Iran, in December 2004 or in July 2005. The respondents filled in the questionnaire, which was included in the congress documents, and returned it anonymously before its conclusion. The survey method is described in greater detail elsewhere.<sup>6</sup> Background information covered dentist's year of birth, gender, work-related factors, and activity in continuing education.

## 3. Assessment of Students Knowledge of Preventive Dental Care

Nine statements (Table 1) on the prevention of dental caries were drawn from a recent text book.<sup>7</sup> Responses were given on a 5-point Likert-scale, later scored on a scale ranging

from Fully agree=4 to Fully disagree=0; higher scores were for more accurate knowledge. The sum of the scores described the respondent's knowledge of preventive dental care. Those respondents with three or more missing answers were excluded (n=23); otherwise, missing answers earned a score of two (midpoint). Based on the distribution of the sum of these scores, three categories were formed: Low (<21), Medium (21–26), and High (27–36).

Aspects of dentists' knowledge	All <sup>1</sup> (n=447)	Men (n=429)	Women (n=201)	P value <sup>2</sup>
	Mean (SD)	Mean (SD)	Mean (SD)	
Caries-related				
The frequency of sugar consumption plays a greater role in producing caries than does the total amount of sugar consumed.	3.73 (0.60)	3.68 (0.65)	3.82 (0.45)	<0.001
Sealant is effective in the prevention of pit and fissure caries in newly-erupted teeth.	3.58 (0.68)	3.56 (0.69)	3.60 (0.64)	0.26
Fluoride toothpaste is more likely to be lost than brushing.	2.45	2.42	2.52	0.25

Table 1

Level of knowledge of preventive dental care among Iranian dentists, assessed by nine statements on a 5-point Likert-scale, later scored as: 0=Fully disagree, 1=Disagree, 2=Don't know, 3=Agree, and 4=Fully agree; the greater scores being for higher level of knowledge

## 4. Assessment of Students Attitudes Toward Preventive Dental Care

Using the differential method,<sup>8</sup> a set of nine pairs of bipolar adjectives which describe preventive dentistry (Table 2) was designed to assess dentists' attitudes towards preventive

dental care. The respondents were asked to describe their attitudes towards aspects of preventive dentistry by choosing one option from a Likert-scale, ranging from 1 to 7; the higher the score, the more positive the attitudes. The sum of all scores, with a theoretical range of 9–63, served as an indicator of respondents' attitudes towards preventive dental care. Those respondents with three or more missing answers were excluded (n=117); otherwise, missing answers earned a score of four (midpoint). Based on the distribution of the sum of these scores, three categories were defined: Low (<46), Medium (46–54), and High (55–63).

Pairs of bipolar adjectives to describe preventive dentistry	All <sup>2</sup> (n=982)		Men (n=429)	Women (n=351)	P value <sup>3</sup>
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
<b>Community-related attitudes</b>					
Useful — Useless to the community	6.67 (0.94)	6.60 (1.01)	6.76 (0.78)	6.47 (0.83)	0.004
Valuable — Worthless to the community	6.59 (0.98)	6.52 (1.05)	6.72 (0.83)	6.47 (0.83)	0.003
Essential — Not essential to the community	6.21 (1.23)	6.16 (1.22)	6.30 (1.23)	6.12 (1.23)	0.12
<b>Dentist-related attitudes</b>					

**Table 2**

Levels of attitudes among dental students, assessed by nine pairs<sup>1</sup> of bipolar adjectives, scored from 1 (indicating the least positive attitude) to 7 (indicating the most positive attitude). Dentists were to choose from the scale the point which best described preventive dentistry.

## 5. Results

Scores for each of the nine statements on preventive dental care are characterised in Table 1. Dentists' knowledge was most accurate regarding the role of sugar consumption (3.82 for females compared to 3.68 for males;  $P < .001$ ) and sealants (no gender difference) in caries prevention, followed by the role of water fluoridation in preventing dental caries (no gender difference). The least accurate knowledge concerned the superiority of the use of fluoride toothpaste over brushing technique in dental caries prevention (1.18 for males compared to 1.00 for females;  $P = .002$ ).

Regarding caries-related knowledge, female dentists scored higher than their male colleagues based on age, practice-related factors and activity in continuing education, while male scored higher on fluoride-related knowledge. Male dentists from cities other than the capital scored higher on caries-related knowledge (2.78) than those in the capital (2.68) ( $P = .05$ ). No other statistically significant differences regarding knowledge scores emerged.

Scores of the dentists' attitudes based on the nine pairs of bipolar adjectives describing preventive dentistry are shown in Table 2. The dentists' attitudes towards preventive dental care were most positive regarding its usefulness (6.67) and value (6.59) to the community, and its status as a scientific subject (6.47). The least positive attitudes were found for some dentist-related aspects, indicating that preventive dentistry was considered to be less economically beneficial (4.24) and less reputable for dentists (3.90). On five of the nine aspects, female dentists demonstrated significantly more positive attitudes than those of the male dentists.

As to the categories of their level of knowledge of preventive dental care, 22% of the respondents fell into the high category, 54% medium and 23% low. The percentages of the dentists demonstrating a high level of knowledge ranged from 19 to 25, with no statistically significant difference based on personal and professional background (Table 3).

Dentists' characteristics	All	High level of knowledge <sup>3</sup>		High level of positive attitudes <sup>3</sup>	
		n	P value <sup>4</sup>	n	P value <sup>4</sup>
Gender	Men	22	0.55	27	0.001
	Women	24		29	
Age in years	<35	23	0.58	32	0.6
	35–44	23		29	
	≥45	20		25	
Practice location	Capital	20	0.14	24	0.23
	Non-capital	25		28	
	Private	27	0.7	31	0.9

**Table 3**

## 6. Conclusions

Dentists' knowledge of and attitudes towards prevention should be improved and updated to enable and encourage them to provide their patients with preventive care.

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