

Attitude Towards Preventive Dentistry Among Iranian Senior Dental Students

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Abstract

Objective: To investigate attitudes of Iranian senior dental students towards preventive dentistry in relation to their background factors and self-perceived competency in providing preventive care.

Materials and Methods: In spring 2008, a questionnaire survey was conducted with all the senior dental students of seven randomly selected state dental schools in Iran. In addition to the respondents' age and gender, the voluntary questionnaire assessed the students' attitudes towards preventive dentistry by means of a seven-point semantic differential scale of nine qualities and their opposites, and their self-perceived competency in providing preventive care by five separate questions. To identify the underlying dimensions for attitude, a factor analysis with principle component method and varimax rotation was applied. Independent sample t-test served for statistical analysis. Of the 242 students receiving the questionnaire, 182 students (75%) responded. The mean age of the participants was 26 years and 42% of them were men.

Results: Based on the factor analysis, which explained 60% of the total variance, two attitude dimensions were identified; the *profession-related* dimension and the *health service-related* dimension. Competency in giving preventive care in all the five specified areas was reported by 44% of the students with no significant gender differences. The mean for the *dentist-related* dimension was significantly higher among the students who reported competency in giving preventive care ($P=0.005$).

Conclusion: There is room for improvement in senior dental students' attitudes towards preventive dentistry. In order to create more positive attitudes for future dental professionals, there should be an early and sufficient exposure to preventive aspects of dentistry in the dental curricula.

Key Words: Dental Education; Prevention; Attitude; Dental Students

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INTRODUCTION

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 com-

munity has been emphasized widely in dental undergraduate programs [1-3]. This has been one of the central themes of curricula revisions [4-7]. Our previous studies have shown that some deficiencies in preventive orientation of Iranian dental students and dental school educators exist. For example, only 57% of the students [8] and 67% of the educators [9] reported twice a day tooth brushing, and the students underestimated the effectiveness of fluoride even for high-risk cases [10]. Some aspects of the attitude of the Iranian dental educators [9] and dentists [11] towards prevention have been reported previously. According to these studies attitude towards prevention seems to be a pivotal factor for preventive-orientated practice of Iranian oral health professionals.

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" [12].

Dentists' attitudes towards care options influence their clinical decision making [13] and vary according to their background and professional factors [11]. Moreover, the relationship between knowledge, attitude and practice seems to be stronger among professionals than among the lay population [14, 15], supporting the potential to train a prevention-oriented workforce. The objectives of the present study were to investigate the attitudes of Iranian senior dental students towards preventive dentistry based on their background factors and self-perceived competency in providing preventive care.

MATERIALS AND METHODS

Subjects and data collection

In spring 2008, a questionnaire survey was conducted for all the senior dental students of seven randomly selected state dental schools. The questionnaires were posted to one of the faculties selected as the coordinator. Participation in the study was voluntary and the coordi-

nators distributed the self-administered questionnaires to the participants during compulsory teaching sessions. The questionnaires were individually filled and collected immediately and returned to one of the investigators (MK).

Of the 242 students receiving the questionnaire, 182 students (75%) responded. The mean age of the participants was 26 years (range, 22 to 48 years) and 42% of them were men. Ten students had attended a dental hygienist course before entering dentistry. These students were excluded from the analyses.

Questionnaire and variables

In addition to the respondents' age and gender, the questionnaire requested information in the following areas:

Attitudes towards preventive dentistry

A seven-point semantic differential scale of nine qualities and their opposites was used to record the respondents' attitudes towards preventive dentistry.

The qualities were: Costly for the dentist/Beneficial to the dentist, Useless for the community/Useful for the community, Non-prestigious/Prestigious, Not efficient/Efficient, Non-essential/Essential, Unscientific/Scientific, not attractive/Attractive, Difficult/Simple, and Worthless/Valuable. The responses were then scored from one to seven, with the higher scores for the more favorable attitudes.

Parents' education

In two separate questions, the respondents were asked to report the level of their father's and mother's education.

The alternatives were: Illiterate, Able to read and write. Primary or secondary school education, High school or vocational school education, Associate degree, Bachelor degree, Master degree, Doctorate. To dichotomize the variable, the students whose parents both had academic education were put in one group and the others in another group.

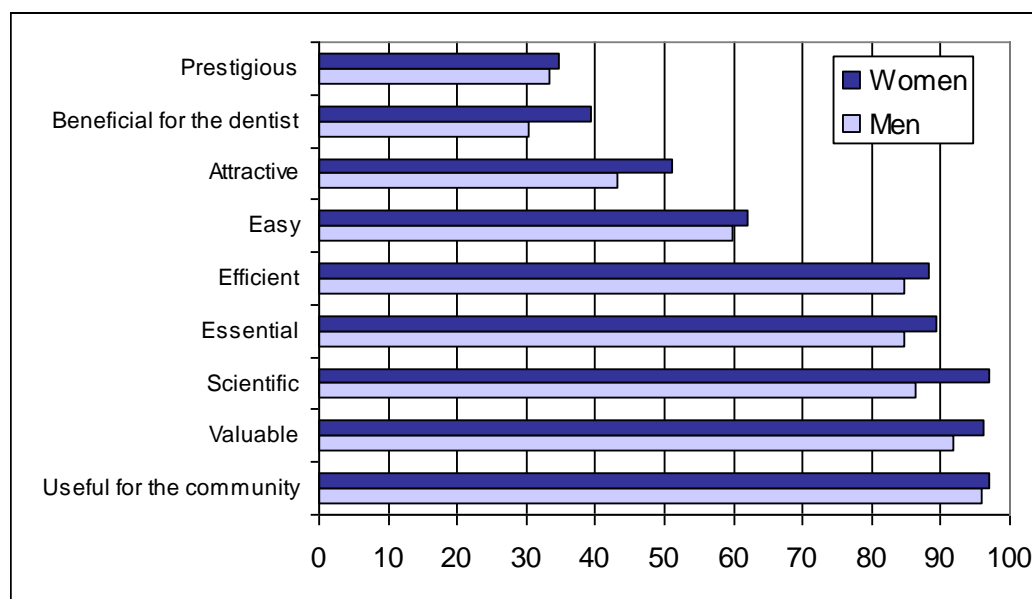


Fig1. Distribution of conceptions (%) of Iranian dental students (n=172) characterizing preventive dentistry as favorable based on given qualities in the semantic differential scale

Self-perceived competency in providing preventive care

In five separate questions, students were requested to assess their self-perceived competency in giving oral hygiene instructions, dietary counselling, applying topical fluoride, applying fissure sealants and managing patients at high risk of developing caries. Alternatives were Very competent, Quite competent, Not very competent, Not at all competent and I have never done that. In order to dichotomize the variable, those who chose Very competent or Quite competent were considered as competent and others as not competent. With the aim of increasing the validity and reliability of the questionnaire, a pilot study was performed in two stages. In order to revise the contents of the primarily structured questionnaires, a study with five educators and ten students was performed in the first stage.

The questionnaires were finalized through further discussions with these groups. In the second stage, the feasibility of the study method was tested by conducting a study in one of the

excluded private schools. In the final questionnaire, Cronbach's alpha coefficient for attitude questions was 0.8 and 0.7 for competency questions.

Statistical analyses

Chi-square test was used to evaluate the statistical significance of differences in frequencies between the subgroups. To identify the underlying dimensions for attitude towards preventive dentistry a factor analysis with the principle component method and varimax rotation was applied. Each item that loaded at 0.50 or greater on only one factor was included as an item for a certain factor.

According to the factor analyses, new variables vis-à-vis each factor were formed by summing up the values of the original variables with the highest loadings in that factor. These sum variables were then standardized by dividing the sum by the number of variables included. An independent sample t-test served for examination of the differences in the computed sum variables.

RESULT

As shown in Figure 1, more than 90% of the students characterized preventive dentistry as scientific, valuable, or useful for the community. On the other hand, less than half of them described it as attractive, prestigious or beneficial for the dentist. Women were more likely to characterize preventive dentistry as scientific compared to men (97.1% vs. 86.3%, $P=0.007$). No other differences related to gender or parents' education were found. Regarding competency in providing preventive care, more than 90% of the respondents perceived that they were competent in giving oral hygiene instructions or in applying fissure sealants. The corresponding figures for applying topical fluoride, managing patients at high risk of developing caries, and dietary counselling were 81.3%, 76.6% and 70.7%, respectively. Competency in giving preventive care in all the five specified areas was reported by 44% of the students with no statistically significant differences based on gender or parent's education. Two factors for attitudes towards preventive dentistry were obtained and identified according to the strongest loadings in the factor analysis, which explained 60% of the total variance. According to the computed sum variables (Table 1), two attitude dimensions were identified; namely, the profession-related dimension and the health system-related dimension.

DISCUSSION

Oral health promotion seeks to improve and protect health through various complementary strategies. The mean for the dentist-related dimension was significantly higher among the students who reported competency in providing preventive care ($P=0.005$) (Table 1). Positive attitudes towards health promotion and preventive dentistry among the professionals are to all intents and purposes highly desirable. According to the results of the present study, attitudes of dental students towards preventive dentistry are influenced by their background characteristics as well as self-perceived competency in giving preventive care. The target population of the study was all the senior students in the 15 Iranian state dental schools. Despite the fact that the educational curriculum is similar in state and private schools [16], there are separate entrance examinations and different backgrounds of the students in private schools. Furthermore, students in private dental schools pay for their educational expenses. Due to these differences the private schools were excluded from this study. The participants of the study represent one profession. This homogeneity reduces the probability of biases related to misconception and errors [17], and to non-response and incorrect answers [18] which have been reported to exist in studies using self-administered questionnaires with the lay population.

Table 1. The Mean of the Identified Dimensions in Different Subgroups Based on Gender, Parents' Education, and Self-Perceived Competency

		Profession-related dimension	P*	Health system-related dimension	P*
Gender	Men (n=75)	4.14±1.39	0.41	6.13±0.92	0.08
	Women (n=104)	4.31±1.32		6.36±0.87	
Parents' education	Academic (n=85)	4.11±1.33	0.17	6.27±0.99	0.98
	Non-academic (n=95)	4.37±1.37		6.27±0.81	
Competency in prevention	Yes (n=81)	4.56±1.15	0.005	6.28±0.83	0.83
	No (n=96)	4.0±1.42		6.25±0.96	

* Independent sample t- test was used to evaluate statistical differences based on gender, parents' education, and self-perceived competency in giving preventive care

However, like any other questionnaire survey, the tendency among the participants to give favorable responses, which is referred to as social desirability [19], might affect the responses. Although efforts were made to reduce this effect by emphasizing the participants that the returned questionnaires would be analyzed anonymously, the results most probably represent an optimistic estimation of the real situation. Using a semantic differential scale has been reported as a valid and reliable method to assess attitudes [20]. It has been used to measure attitudes of dental students towards dental public health as a career [21], to assess the attitudes of male dental students and faculty members towards female dental students [20,22], to evaluate the dental students' perception of a course in community dentistry [23], and to measure satisfaction outcomes of endodontic treatments [24].

The qualities presented in our scale covered various aspects of preventive dentistry to produce a clear picture of the concept. Previous application of the same scale for dentists enables comparisons [11].

While most of the respondents characterized preventive dentistry as "valuable", "essential" and "useful for the community", less than half of them believed that it is "attractive", "prestigious" or "beneficial for the dentist". The results of the factor analysis also identified two different dimensions for attitudes towards preventive dentistry; profession-related and health system-related. These findings, which are consistent with findings among British [25] and Iranian dentists [11], can be attributed to some of the barriers perceived by dentists to apply preventive measures. For example, inadequate reimbursement for prevention [26], time limitations due to the great demand for curative care [27], and perceived unwillingness of patients to pay for prevention [28] have been reported. The fact that in the current national curriculum of Iranian dental schools, learning preventive dentistry does not start

from the first years may also partly explain these findings.

In the present study women reported more positive attitudes towards prevention compared to men. This is in line with previous findings among Iranian dentists [11] and dental educators [9]. This difference might be attributed to background differences between the two genders, since women has been shown to run a more conservative style of dental practice compared to men [29]. This finding indicates the complex nature of attitude and interaction of various factors in shaping it [12]. However, sufficient emphasis on prevention during undergraduate dental training may reduce these background-related differences.

As expected, and previously reported for Mongolian dental students [30, 31], self-perceived competency in providing preventive care was another influential factor with respect to the students' attitudes. Better preventive-oriented practices among the students competent in providing preventive care has also been shown [10]. These findings are consistent with the models and theories considering knowledge and attitudes as predispositions to act [12, 32]. They also show that training a prevention-oriented workforce in dental schools requires setting distinct educational objectives to cover the cognitive, affective and psychomotor domains involved.

CONCLUSION

Improving the senior dental students' attitudes towards preventive dentistry is a challenge for dental education in Iran. In order to create more positive attitudes for future dental professionals, there should be an early and sufficient exposure to preventive aspects of dentistry in the dental curricula.

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