



Impact of Awareness Obtained from Studying Dentistry on Oral Health-Related Quality of Life at Shahid Beheshti University

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Abstract

Background: Today, the impact of oral health on indicators of quality of life is of great importance. As few studies have evaluated dental students who are future dentists of a society, this study was performed to assess the impact of awareness on oral health-related quality of life on first, third- and sixth-year Shahid Beheshti dental students in 2017-2018.

Methods: This descriptive cross-sectional and analytical study was conducted on 220 Shahid Beheshti dental students. The required data was collected by using a sociodemographic questionnaire (including gender, academic year indicating level of awareness, and GPA) and Persian version of oral health-related quality of life questionnaire, OHIP-14. The questionnaires' scores were compared by one-way analysis of variance (ANOVA) or Welch's t-test.

Results: The average total score of OHIP-14 questionnaire in dental students was 8.26 (SD=7.41). A significant relationship between the academic year and oral health-related quality of life was not noticed except in "Psychological Discomfort" domain where oral health-related quality of life deteriorated with an increase in the academic year ($p=0.0001$).

Conclusion: Oral health-related quality of life in dental students did not change significantly with an increase in the academic year except in "Psychological Discomfort" domain.

Keywords: Dental students, Oral health-related quality of life, OHIP-14

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Introduction

Aristotle was the first person who talked about quality of life. He explained good quality of life equal to happiness and believed happiness is different not only among different individuals, but also in an individual in different situations (1). Today quality of life is a multidimensional and relative concept which is affected by time, location, and personal and social values (2). Quality of life is based on an individual's satisfaction with his current health status and in regard to his future goals in life and is defined by his physical, professional, functional, and emotional well-being, expectations and satisfaction with care, and his self-image (3).

Based on this definition, health is a part of quality of life, but not equal to it. World Health Organization defines health as complete physical, mental, and social well-being while quality of life is defined by an individual's satisfaction regardless of being healthy or not (4).

Contemporary concepts of health describe oral health in general physical, psychological, and social well-being terms in relation to oral status which influences how a person grows, enjoys life, looks, speaks, and socializes (5). Therefore, oral health-related quality of life is associated with functional, psychological, and social factors, and experience of pain or discomfort with respect to one's oral status (6).

To express oral health-related quality of life, a few indices have been designed to quantify one's subjective evaluation of the impact of his oral condition on his social well-being (7). Oral Health Impact Profile (OHIP) is one of the most well-known and valid indices used to assess different domains of oral health-related quality of life. The new OHIP-14 is a 14-item questionnaire used to evaluate seven domains of quality of life including: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and overall handicap (8,9).

Despite the growing number of studies addressing oral health-related quality of life, few studies have been performed in dental students whose self-perception of oral health-related quality of life and awareness, can contribute to the development of strategies aimed at improving the dental curriculum and education (10). In some of the studies, it was

observed that oral health attitudes and behaviors of dental students showed an improvement during their academic course, but the same result was not found in all studies (11-14).

Considering the lack of similar studies among Iranian dental students, the difference of dental academic system in Iran compared with other countries where similar studies were conducted and the difference in perception of quality of life in different cultures, it was important to perform this study. This research and its findings can be utilized to evaluate the efficiency of dental academic system in Iran in enhancing dental students' awareness and improve the role of dentists as the main professionals in providing dental care in the society.

Materials and Methods

This descriptive cross-sectional and analytical study was approved by Ethics Committee of Shahid Beheshti University of Medical Sciences, Dental School (No IR.SBMU.REC.1395, 354). As the participants in the study were informed of their right (not) to be part of the study when the questionnaires were distributed and their identities were kept anonymous and no procedures were done on them, the ethical issues are solved.

Data collection

To collect data, the sociodemographic questionnaire (including gender, academic year, and GPA) and the Persian version of OHIP-14 questionnaire were used. The validity and reliability of these questionnaires were evaluated and confirmed in Iranian Society (15,16).

OHIP-14 was used with 14 questions in seven domains of oral health-related quality of life (two questions per each domain including functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and overall handicap). Each question had five options which were scored as zero for never, one for rarely, two for occasionally, three for frequently and four for always. This questionnaire's total score ranged from 0 to 56 where the lower score indicated better oral health-related quality of life, and higher score demonstrated worse oral health-related quality of life.

Sample size and sampling method

The students were divided into six grades based on their academic year. To avoid high number of participants and facilitate data analysis, students in first, third and sixth academic year were selected as they were in the beginning, middle and end of their course of studies. 220 of the students who were willing to participate in the study, were chosen and categorized in three groups. The sampling method was Quota Sampling which is defined as a non-probability sampling method in which the created sample involves individuals that represent a population.

The questionnaires were distributed among the students when they were present in the school's classrooms to fill them up.

Statistical analysis method

The collected data were analyzed by SPSS-22. To compare the scores in each domain among the three groups, Test of Homogeneity of Variance was utilized. Based on the results of test of homogeneity of variance, if the variances were not equal ($p < 0.05$), Welch's t- test was used to evaluate the difference among the scores in three groups. If this difference was significant, Games-Howell Post-Hoc test was applied to separate the comparisons. If the variances were equal ($P > 0.05$), One-way ANOVA was utilized to evaluate the difference among the scores in three groups. If this difference was significant, Turkey's test was applied to separate comparisons.

Results

Out of 220 students attending this study, 114 were female (%48) and 106 were male (%52) with an age distribution from 18 to 32 year and average age of 21.91 year (SD=2.65). The number of students in the first group (first year) was 72 individuals (32 males and 40 females), in the second group (third year) was 75 persons (36 males and 39 females) and in the third group (sixth year) was 73 persons (37 males and 36 females).

OHIP_14 average total score was 8.26 (SD=7.41). The average score in each domain was 0.65 (SD=1.23) for the first domain, 2.08 (SD=1.41) for the second domain, 2.1 (SD=1.62) for the third domain, 1.05 (SD=1.39) for fourth domain, 1.00 (SD=1.26) for the fifth domain, 0.88 (SD=1.29) for the sixth domain

and 0.47 (SD=1.09) for the seventh domain (Table 1). The average total score of OHIP-14 was 8.81 (SD=8.83) in the first group, 6.74 (SD=5.20) in the second group and 9.27 (SD=8.13) in the third group. Average total score was reported 7.99(SD=6.40) in females and 8.55(SD=8.37) in males. The relationship was not significant among the three groups ($p=0.08$) and between males and females ($p=0.57$) (Table 2).

In the first domain (functional limitation), average score of first and second questions was 0.90 (SD=1.56) in the first group, 0.54(SD=1.54) in the second group and 0.53(SD=1.00) in the third group. Average score of this domain was calculated 0.71(SD=1.35) in males and 0.60 (SD=1.11) in females. No significant relationship was noticed in this domain among three groups ($p=0.12$) and between males and females ($p=0.050$) (Table 3).

In the second domain (physical pain), average score of third and fourth questions was 2.25(SD=1.48) in the first group, 1.80 (SD=1.25) in the second group and 2.21 (SD=1.48) in the third group. Average score of this domain was calculated 2.05 (SD=1.53) in males and 2.11 (SD=1.31) in females. No significant relationship was noticed in this domain among three groups ($p=0.1$) and between males and females ($p=0.76$) (Table 3).

In the third domain (psychological discomfort), average score of fifth and sixth questions was 1.77(SD=1.68) in the first group, 1.86(SD=1.20) in the second group and 2.86 (SD=1.77) in the third group. Average score of this domain was calculated 2.06 (SD=1.62) in males and 2.14 (SD=1.61) in females. The relationship was significant in this domain among three groups, but not between males and females (Table 3).

In the fourth domain (physical disability), average score of seventh and eighth questions was 1.22 (SD=1.44) in the first group, 0.77 (SD=1.12) in the second group and 1.17 (SD=1.54) in the third group. Average score of this domain was calculated 1.13 (SD=1.49) in males and 0.98 (SD=1.28) in females. No significant relationship was noticed in this domain among three groups ($p=0.06$) and between males and females ($p=0.43$) (Table 3).

In the fifth domain (psychological disability), average score of ninth and tenth questions was 1.08 (SD=1.39) in the first group, 0.85 (SD=0.92) in the

Table 1. The average total score of OHIP-14 in each domain

OHIP-14 Domain	Average score	Standard deviation
Domain 1- Functional Limitation	0.65	1.23
Domain 2- Physical Pain	2.08	1.41
Domain 3- Psychological Discomfort	2.11	1.62
Domain 4- Physical Disability	1.05	1.39
Domain 5- Psychological Disability	1	1.26
Domain 6- Social Disability	0.88	1.29
Domain 7- Overall Handicap	0.47	1.09

Table 2. Central tendency indices of OHIP-14 total score according to gender and academic year

OHIP-14 Total		Average (SD)	Median	First quartile	Third quartile	p-value
Gender	Male	8.55(8.37)	6	3.75	12	0.571
	Female	7.99(6.40)	6	3.75	12	
Group	First	8.81(8.38)	6	4	13	0.079
	Second	6.74(5.20)	5	4	9	
	Third	9.27(8.13)	7	3	12	

Table 3. Central tendency indices of seven domains of OHIP-14 scores according to gender and academic year

OHIP Domains		First	Second	Third	Fourth	Fifth	Sixth	Seventh
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
		Median	Median	Median	Median	Median	Median	Median
Gender	Male	0.72 (1.35)	2.05 (1.53)	2.06 (1.62)	1.31 (1.49)	1.07 (1.41)	0.92 (1.34)	0.58 (1.26)
	Female	0.60 (1.12)	2.11 (1.31)	2.14 (1.61)	0.98 (1.28)	0.93 (1.09)	0.84 (1.23)	0.35 (0.88)
	P-Value	0.502	0.761	0.738	0.429	0.422	0.641	0.052
Group	First	0.90 (1.56)	2.25 (1.48)	1.77 (1.68)	1.22 (1.44)	1.08 (1.39)	1.02 (1.43)	0.55 (1.16)
	Second	0.54 (1.04)	1.80 (1.25)	1.86 (1.20)	0.77 (1.12)	0.85 (0.92)	0.62 (0.98)	0.28 (0.74)
	Third	0.53 (1.00)	2.21 (1.48)	2.68 (1.77)	1.17 (1.54)	1.08 (1.42)	1.00 (1.38)	0.57 (1.27)
	P-Value	0.124	0.102	0.001	0.006	0.437	0.109	0.101

second group and 1.08 (SD=1.42) in the third group. Average score of this domain was calculated 1.07 (SD=1.41) in males and 0.93 (SD=1.09) in females. No significant relationship was found in this domain

among three groups (p=0.44) and between males and females (p=0.42) (Table 3). In the sixth domain (social disability), average score of eleventh and twelfth questions was 1.02 (SD=1.43)

in the first group, 0.62 (SD=0.98) in the second group and 1.00 (SD=1.38) in the third group. Average score of this domain was calculated 0.92 (SD=1.34) in males and 0.84 (SD=1.23) in females. No significant relationship was noticed in this domain among three groups ($p=0.11$) and between males and females ($p=0.64$) (Table 3).

In the seventh domain (overall handicap), average score of thirteenth and fourteenth questions was 0.55 (SD=1.16) in the first group, 0.28 (SD=0.74) in the second group and 0.57 (SD=1.27) in the third group. Average score of this domain was calculated 0.58 (SD=1.26) in males and 0.35 (SD=0.88) in females. The relationship was significant in this domain between males and females ($p=0.05$), but not among three groups ($p=0.10$) (Table 3).

Discussion

This study was performed to assess oral health-related quality of life at Shahid Beheshti dental students. As these students impact the society's oral and dental health and few similar studies have been conducted in this population, this study is of great importance and its results can contrive more studies to improve these future dentists' statuses and their academic curriculum. The results showed that even though it was not expected, with an increase in the academic year of the students, their oral health-related quality of life not only did not improve significantly, but also decreased "psychological discomfort" domain. Average age and age range of the participants in this study was like similar studies which was predictable as average age of dental students in most of the countries is in the same range. Gender distribution in this study, like similar studies, showed equal number of males and females while in the studies conducted by Acharya *et al* and Gonzalles-Sullcahuaman *et al*, the number of females was much higher than males (30-70%) (10,17).

In this study, gender had no impact on oral health-related quality of life and OHIP-14 total score. This finding is like the study done by Gonzalles-Sullcahuaman *et al* while in the study conducted by Drachev *et al*, females had worse oral health-related quality of life compared to males (10,18). In other similar studies, the impact of gender was not assessed in each domain of OHIP-14 while in this study, males

had higher scores in "overall handicap" presenting worse oral health-treated quality of life.

The average total score of OHIP-14 in this study demonstrated a great difference compared to the similar studies. This figure was twice of what was reported by Gonzalles-Sullcahuaman *et al*, Manapoti *et al* and Drachev *et al* (implying worse oral health-related quality of life) while was less than what was reported by Acharya *et al* and Bullappa *et al* (implying better oral health-related quality of life) (10,18,19). This finding can be due to the different culture, lifestyle, academic system, and the university entrance criteria in the studied countries.

Considering each domain of OHIP-14, "psychological discomfort" and "physical pain" domains have the highest scores, indicating more problems in these domains and their greater impact on lowering oral health-related quality of life. This finding is like similar studies except the one conducted by Drachev *et al* where the impact of "physical pain" domain is more than "psychological discomfort" domain (18). This similarity indicates that social level and class differences have more impacts on oral health-related quality of life compared to other variables.

"Overall handicap" and "functional limitation" domains had the lowest scores which is like similar studies. But in the study done by Manapoti *et al*, "psychological disability" and "overall handicap" domains had the least impact and in the one done by Bullappa *et al* "functional limitation" and "psychological disability" domains had the least impact (19,20).

In this study, with an increase in the academic year, an increase in the score of OHIP-14 was observed only in "psychological discomfort" domain and this relationship was significant. In the studies of Manapoti *et al* and Drachev *et al*, this relationship was not evaluated (18,19). This relationship was evaluated in the study done by Bullappa *et al*, but was not significant (20).

In this study, it seems that with an increase in the academic year, the level of stress and psychological discomfort increases. However, in the study performed by Acharya *et al*, it was noticed that the scores of "overall handicap" and "social disability" domains improved with an increase in the academic year which indicates a better oral health-related quality of

life (17). This difference can be due to the differences of dental academic systems in these two populations. In the study performed by Gonzales-Sullcahuaman *et al*, no relationship was found between the academic year and oral health-related quality of life (10).

Conclusion

Based on the findings of the present study, oral health-related quality of life in Iranian dental students not only did not improve with an increase

in the academic year but also deteriorated in some domains. Considering that not all students were willing to participate in the study and some of them may have provided imprecise information along with the challenges faced to interpret OHIP-14 scores, it is recommended that similar studies are conducted in other dental and non-dental universities. It is also proposed to take advantage of some independent variables as DMFT to assess their impact on Oral Health-Related Quality of Life.

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