

## Oral Health Behavior and Its Relationship with Quality of Life among 12 Year-old Children of Rafsanjan in 2017-18

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### Abstract

**Background:** Oral Health related Quality of Life (OHQoL) as a multi-dimensional concept indicates person's satisfaction with his/her oral health in terms of various dimensions. This study was carried out to examine impact of oral health on the quality of life of 12 year-old children in Rafsanjan and its relationship with their oral health behaviors.

**Methods:** This descriptive-longitudinal study was conducted on 571 sixth grade elementary students from 8 selected schools of Rafsanjan/ Iran in 2017-18. A three-part questionnaire including demographic characteristics, oral health behaviors and 35 items taken from the standard 35-item OHQoL questionnaire was employed as data collecting tools. Data were analyzed using SPSS-16 Software, one-way ANOVA, independent t- test, and Chi-square at significance level of 0.05.

**Results:** The mean score of OHQoL index was  $30.43 \pm 18.1$  and there was a significant relationship between the OHQoL index and tooth brushing behavior ( $P=0.03$ ), tooth brushing duration ( $P<0.001$ ), using toothpaste ( $P<0.001$ ), daily and regular snacks consumption ( $P=0.01$ ), and regular dentist visit ( $P=0.04$ ); however, this relationship was not significant in terms of dental floss use and frequency of tooth brushing ( $P>0.05$ ). The highest impact of oral health on children's quality of life was in terms of oral symptoms, functional impairment and emotional health dimensions, respectively.

**Conclusion:** Despite the optimum mean score associated to oral health-related quality of life, students' health had been affected in terms of oral symptoms, functional impairment and emotional health and this variable was itself affected by oral health behaviors such as tooth brushing and regular dentist visiting to receive services. Accordingly, planning, implementing and evaluating interventions for other stakeholders, such as families and school authorities, are recommended.

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### Introduction

Oral health includes the health of oral cavity and related tissues, which prepares the person for eating, speaking and

social interactions without active illness, discomfort and dissatisfaction; oral health is a factor affecting quality of life (1, 2). According to the estimation of global burden of disease

study in 2016, oral diseases affected half of the world's population (3), and have been the most common diseases among American adolescences (14-17 years old) and more than 20% of elementary students (2-5 years old) have been affected by them (4). In European countries, tooth decay varies between 20 and 90% among 6-year-old children (5). In Iran, average DMFT (Decayed, Missing and Filled Tooth) index has been 3.3-4.8% among 9-year-old children and 0.9-1.5% among 12-year-old children (6). Pain, infection, limited chewing system, and annoying appearance of face and mouth are not only negative outcomes of oral problems but also they can affect social relationships, emotional health, learning concentration, school absence and disease control (7, 8).

One significant public health aspect is individuals' oral health conditions and its effect on their quality of life, which in addition to medical diagnosis should be considered in other dimensions (9). Oral Health Related Quality of Life (OHQoL) as a multi-dimensional concept indicates individual's satisfaction with his/her oral health in terms of various dimensions (10); this index is used to evaluate treatment needs and determine oral health planning priorities to the extent that some organizations enacted rules emphasizing on patients survey in this case and oral health promotion (11, 12).

OHQoL is a crucial index among children, since oral diseases are prevalent among them causing some problems such as dental pains or apparent problems as well as negative effects on their present and future quality of life and daily activities including playing, sleeping, feeding, social participation, and academic achievement (10). Accordingly, Child Perception Questionnaire [CPQ11-14] in relation to oral-health related quality of life has been selected as an applicable tool assessing this index among Iranian children (10).

Various variables, such as predisposing factors, subjective norms, peer education, observational learning, perceived vulnerability and severity can affect oral health behaviors and studies have shown that good oral and dental behaviors are led to less caries and subsequently increase the oral health-related quality of life (13-16).

The most important behaviors that promote oral hygiene are tooth brushing, flossing, regular dental care and avoiding sweets and snacks (17, 18). Considering the importance of the issue and lack of such study on 12-year-old children in Rafsanjan, this study was conducted to analyze oral health-related quality of life and its relationship with oral health behaviors among 12 years old children of Rafsanjan (Southern Iran).

## Materials and Method

This descriptive- longitudinal study was carried out on 571 sixth grade students of Rafsanjan in 2017-18. Because the city of Rafsanjan has not divided to different zones, simple random sampling was used and the selected schools comprised 8 male and female public schools.

Data collecting tool was a three-part questionnaire including demographic characteristics (4 items: gender, oral health conditions, family income level and parents' education level), oral health behaviors appraisal covering 10 items adopted from Jabbarifar et al. (15) with Cronbach's alpha coefficient of 0.72. Some behaviors such as regular tooth brushing (at least two times a day and each for 3 minutes), regular dental floss use, no snack consumption, and regular dentist visiting to receive care services were considered as oral health behaviors and each item was analyzed separately. The third part of the questionnaire was consisted of 35 items for

students' oral health-related quality of life adopted from Jabbarifar et al. (10).

This part of the questionnaire evaluated quality of life in terms of 4 scopes including oral symptoms and functional impairment with 14 items (score range: 0-56), emotional health with 9 items (score range: 0-36), school and class affairs with 4 items (score range: 0-16), social health and communication with 8 items (score range: 0-32). Scores were obtained based on 5-point scale from never (0) to almost every day (4) and through self-report method. Total score domain of this tool was 0-140; lower score indicated higher oral health-related quality of life. Cronbach's alpha coefficient of the third part of the applied questionnaire was obtained as 0.91.

After selecting schools randomly, we referred to the sixth grade classes and asked the students to fill out the questionnaire after expressing the goals of study. Inclusion criterion was students' consent to participate in the research. The most important codes of ethics considered in the present study were keeping confidentiality, presenting the results to the stakeholders, observing the material and intellectual rights of the research team. This research was approved by the Vice Chancellor for Research and Technology of Rafsanjan University of Medical Sciences (IR.RUMS.REC.1395.42). Data were inserted into SPSS-16 Software then analyzed at significance level of 0.05. After evaluating the normality of the data and based on the type and role of the variables, One-Way

ANOVA, independent t-test, and Chi-square test were used for comparison of a quantitative variable among several groups, between the two groups and to compare the qualitative variables, respectively.

## Results

571 participants [305 girls (53.4%) and 266 boys (46.6%)] involved in this research. Fathers of 146 (24.4%) students and mothers of 149 (26.8%) students had academic education. Majority of parents (50%) had diploma. According to students, 99 students (17.5%) had excellent and 30 students (5.3%) had poor oral health conditions. About half of the participants [293 ones (51.7%)] described their family income in high level. There was not any significant relationship between oral health-related quality of life of students and variables including gender, parents' education and income ( $P>0.05$ ), while oral health-related quality of life of students had significant relationship with students' self-report about their oral health conditions ( $P<0.001$ ); mean score and standard deviation of oral health-related quality of life was  $23.9\pm 15.8$  and  $57.9\pm 20.5$  among students who had excellent description and poor description, respectively.

According to the results, 97.5% used to brush their teeth, 24.5% brushed their teeth three times a day, 83.5% used toothpaste, and about 30% had regular referring to dentistry every 6 months to receive dental examinations (Table 1).

**Table 1.** Frequency distribution of Oral health behaviors among studied children

Variables	Frequency distribution number (percentage)		
	yes	no	
<b>tooth brushing</b>	551 (97.5)	14 (2.5)	
<b>frequency of brushing</b>	rarely 50(8.9)	sometimes 257 (45.4)	always and regular 258 (45.7)
<b>number of brushing during the day</b>	once 224 (45.9)	twice 163 (29.5)	three times and more 135 (24.5)
<b>Brushing duration</b>	1-2 minutes 202 (36)		3 minutes and more 358 (64)
<b>Brushing the tongue</b>	yes and regular 79 (14)	yes and rarely 110 (19.5)	no 375 (66.5)
<b>use of toothpaste</b>	yes 501 (83.5)		no 59 (9.8)
<b>type of toothpaste</b>	with fluoride 421 (74.8)		without fluoride 80 (25.2)
<b>dental flossing</b>	yes and regularly 83 (14.7)	Yes and rarely 260 (45.9)	No 223 (39.4)
<b>Regular visits by dentist</b>	yes 163 (29.1)		no 398 (70.9)
<b>taking snacks</b>	yes, every day 83 (14.7)	yes and rarely 422 (74.6)	no 61 (10.8)

Mean score of oral health-related quality of life was  $30.43 \pm 18.1$  (girls:  $29.8 \pm 16.03$  and boys:  $31.1 \pm 20.2$ ); although boys obtained higher mean score, there was not any significant difference between girls and boys based on independent t- test ( $P=0.09$ ).

Mean score of oral health-related quality of life and its relationship with oral health behavior are reported in table 2.

Accordingly, there was a significant relationship between the studied index and oral health behaviors of tooth brushing ( $P=0.03$ ), brushing conditions ( $P=0.03$ ), brushing duration ( $P<0.001$ ), using toothpaste ( $P<0.001$ ), daily and regular snacks consumption ( $P=0.01$ ), and regular dentist visit ( $P=0.04$ ); however, this relationship was not significant in terms of dental floss use and frequency of brushing ( $P>0.05$ ).

**Table 2.** The relationship between Oral health-related quality of life and oral health behaviors

Variables	oral health-related quality of life score (mean±SD)			P-Value
	Yes		No	
<b>tooth brushing</b>	31.53±27.2		34.6±12.3	=0.03
<b>frequency of tooth brushing</b>	rarely	sometimes	always and regularly	=0.03
	34.4±18.7	32.4±19.4	27.8±16.5	
<b>number of brushing during the day</b>	once	twice	three times and more	=0.69
	31.4±18.9	30.2±18.4	29.6±16.1	
<b>brushing duration</b>	1-2 minutes		3 minutes and more	<0.001
	36.1±19.2		28.3±16.4	
<b>brushing the tongue</b>	yes and regularly	yes and rarely	no	=0.82
	29.3±19.5	30.4±17.1	30.6±18.1	
<b>use of toothpaste</b>	yes		no	<0.001
	30.2±17.6		64±35.7	
<b>type of toothpaste</b>	with fluoride		without fluoride	=0.02
	26.8±18.8		32.5±16.7	
<b>dental flossing</b>	yes and regularly	yes and rarely	no	=0.14
	30.05±17.1	28.8±16.6	32.6±19.9	
<b>regular visits by dentist</b>	yes		no	=0.04
	32.1±26.4		35.1±13.7	
<b>taking snacks</b>	yes, every day	yes and rarely	no	=0.01
	35.9±22.5	29.8±17.3	27.6±15.5	

Mean score and standard deviation of Oral health-related quality of life dimensions (oral symptoms and functional impairment, emotional health, school and class affairs, social health and communications) according to the toothbrush behavior (the most important factor in causing decay) has been reported in Table 3. According to this table, the highest effect

of oral health on quality of life of children was observed respectively in oral symptoms and functional impairment, emotional health, social health and communications, school and class affairs. There was not any significant relation ( $P>0.05$ ) between brushing behavior and 4 oral health-related quality of life scopes among the studied children.

**Table 3.** The relationship between Mean score of Oral health-related quality of life dimensions and brushing behavior

Variables	Mean (SD)	brushing behavior M±S.D		P-Value
		Yes	No	
<b>total quality of life</b>	30.43±18.1	31.5±18.2	34.6±12.3	=0.03
<b>oral symptoms and functional impairment</b>	13.1±7.2	10.8±6.6	13.5±7.4	=0.11
<b>emotional health</b>	9.9±7.5	8.5±7.1	10.4±7.3	=0.36
<b>school and class affairs</b>	30.01±2.7	2±1.7	2.8±1.1	=0.052
<b>social health and communication</b>	4.6±4.9	5.6±4.5	4.5±4.6	=0.34

## Discussion

According to the health definition presented by WHO and other studies, oral health has important impacts on quality of life (3, 19). Eye is the window to the soul and mouth is a window into the body; therefore, oral health can affect quality of life and public health. This study aimed to examine oral health-related quality of life and its relationship with oral health behaviors among 12- year- old children in Rafsanjan.

The results of this study showed no significant relationship between oral health-related quality of life of students and variables including gender, parents' education and income; this finding was not in line with the results of a study conducted by Bianco et al. on school children in Italy (19) and Van-den Branden et al. study on parents of preschool children in Flanders, Belgium (20). In another study, this relationship was significant in case of students' self-reports about their oral health condition indicating importance of children's personal attitude (21). Bekiroglu et al. (2017) emphasized on vital role of children's attitude and explained that 11-12 year-old children see health as a multidimensional implication and at the age of 11-14 years, they can evaluate their quality of life considering its impact on their daily performance that indicates increasing and changing perception of children (22). Therefore, the use of specific tools for each target group seems to be necessary (23).

Frequency distribution of students' oral health behaviors such as tooth brushing behavior and toothpaste use was optimal. The results of a systematic review and a meta-analysis have also shown positive effects of oral health behaviors (24, 25), but the result was reverse in case of frequent brushing behavior, tongue brushing, dental floss use and regular dentist visit; hence, it is required to study and change individuals' attitude and belief in other oral health-related determinants. Suvarna et al. have emphasized on the above-mentioned topics (26). They reported that parents' awareness of their children's oral and dental health was desirable, but their attitudes were not satisfactory (26). Therefore, designing, implementing and evaluating educational interventions based on theories of attitudinal change among parents of children are suggested. One of the most important strategies for increasing the sensitivity of families is to express the negative consequences of inappropriate oral health in different aspects of quality of life (physical, mental, economic, etc.).

There was not any significant difference in oral health-related quality of life between girls and boys. There was a significant relationship between OHQoL and oral health behaviors including brushing behavior, brushing behavior condition, brushing duration, toothpaste use, regular daily snacks consumption and regular dentist visit, but this

relationship was not significant in case of behaviors including dental floss use and frequency of brushing. It seems that many factors are effective in the adoption of oral hygiene behaviors (27-29). Agostini et al. reported that psychosocial factors were more predictive than other factors in adopting oral health behaviors in Brazilian preschool children (28).

The highest effect of children's oral health-related quality of life was respectively observed in dimensions of oral symptoms, functional impairments, emotional health, social health and communications and school and classroom affairs. Ruff et al. (2018) in their systematic review and meta-analysis reported a significant relationship between oral health behaviors and oral health-related quality of life among children (30). Tooth decay has a significant relationship with the absence from school and the reduction of academic achievement (31). In this study, there was no significant relationship between the brushing behavior and the four aspect of quality of life associated with oral health. Accordingly, the design of community-based interventions with the aim of increasing the community's sensitivity to the social consequences of oral hygiene seems to be necessary.

## References

1. Bianco A, Fortunato L, Nobile CG, Pavia M. Prevalence and determinants of oral impacts on daily performance: results from a survey among school children in Italy. *Eur J Public Health* 2010; 20(5):595-600.
2. Montero-Martin J, Bravo-Perez M, Albaladejo-Martinez A, Hernandez-Martin LA, Rosel-Gallardo EM. Validation the oral health impact profile (OHIP-14sp) for adults in Spain. *Med Oral Patol Oral Cir Bucal* 2009; 14(1):44-50.
3. World Health Organization. Oral health. [cited 2018 Sep 20] Available from: <https://www.who.int/news-room/fact-sheets/detail/oral-health>.

## Conclusion

Although the studied students obtained optimal mean score in oral health-related quality of life, this score affected their health in terms of oral symptoms, functional impairment and emotional health that is, itself, affected by oral health behaviors such as tooth brushing and regular dentist visit to receive services.

Since there is a large number of students in Iran, it is essential to provide a solution and health plans to prevent oral diseases in this group. In this regard, it is recommended to hold health-training courses for students, health trainers and teachers in schools, teach oral health to families in the society, and distribute health facilities such as toothbrush, toothpaste, and dental floss.

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4. Bright MA, Alford SM, Hinojosa MS, Knapp C, Fernandez-Baca DE. Adverse childhood experiences and dental health in children and adolescents. *Community Dent Oral Epidemiol* 2015; 43(3):193-9.
5. World Health Organization (Regional Office for Europe). Oral health. [cited 2017 Mar 25] Available from: <http://www.euro.who.int/en/health-topics/disease-prevention/oral-health>.
6. Bayat-Movahed S, Samadzadeh H, Ziyarati L, Memary N, Khosravi R, Sadr-Eshkevari PS. Oral health of Iranian children in 2004 :a national pathfinder survey of dental caries and treatment needs. *East Mediterr Health J* 2011; 17(3):243-9.
7. Tomson WM, Broder HL. Oral-health-related quality of life in children and adolescents. *Pediatr Clin North Am* 2018; 65(5):1073-84.
8. Agbaje HO, Kolawole KA, Otuyemi OD. Evaluation of early changes in oral health-related quality of life amongst Nigerian patients undergoing fixed orthodontic appliance therapy. *Int Orthod* 2018; 16(3):571-85.
9. Daly B, Newton T, Batchelor P, Jones K. Oral health care needs and oral health-related quality of life (OHIP-14) in homeless people. *Community Dent Oral Epidemiol* 2010; 38(2):136-44.
10. Khadem P, Hajiahmadi M, Jabarifar SE, Mirani K. Validity and reliability of Persian translation of the Child Perception Questionnaire (CPQ11-14) in 11–14 year-old children in Isfahan. *Journal of Isfahan Dental School* 2012; Specia Issue 7(5):777-84. [In Persian].
11. U.S. Food And Drug Administration. Patient-reported outcomes measures: use in medical products development to support labeling claims. [cited 2017 Mar 25] Available from: <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/patient-reported-outcome-measures-use-medical-product-development-support-labeling-claims>.
12. Reflection Paper on the Regulatory Guidance for the Use of Health-Related Quality of Life (HRQL) Measures in the Evaluation of Medicinal Products. London: European Medicines Agency Pre-authorisation Evaluation of Medicines for Human Use, EMEA, 2006. Available from: [https://www.ema.europa.eu/en/documents/scientific-guideline/reflection-paper-regulatory-guidance-use-healthrelated-quality-life-hrql-measures-evaluation\\_en.pdf](https://www.ema.europa.eu/en/documents/scientific-guideline/reflection-paper-regulatory-guidance-use-healthrelated-quality-life-hrql-measures-evaluation_en.pdf)
13. Ghaffari M, Nasirzadeh M, Rakhshanderou S, Ramezankhani A. Unacceptable status of oral and dental health-related knowledge among Iranian primary school students. *Bioscience Biotechnology Research Communications* 2017; Special Issue(1):260-6.
14. Ghaffari M, Nasirzadeh M, Rakhshanderou S, Ramezankhani A. Some of the strongest predisposing factors on the behavior of tooth brushing among Iranian school age children. *International Journal of Pediatrics* 2017; 5(4):4783-91.
15. Jabarifar SE, Birjandi N, Khadem P, Farsam T, Falinezhad F, Moshref Javadi F. Relationship between quality of life and oral health in 18-45 year-old subjects referring to Khorasgan School of Dentistry in 2010-11. *Journal of Isfahan Dental School* 2012; 8(1):68-74. [In Persian].
16. Ghaffari M, Rakhshanderou S, Ramezankhani A, Noroozi M, Armoon B. Exploration of brushing behavior among university students in



- Iran: a qualitative research. *Int J Adolesc Med Health* 2018.
17. Duijster D, de Jong-Lenters M, Verrips E, van Loveren C. Establishing oral health promoting behaviours in children—parents' views on barriers, facilitators and professional support: a qualitative study. *BMC Oral Health* 2015; 15:157.
  18. American Dental Association (ADA). American Dental Association statement on regular brushing and flossing to help prevent oral infections. [cited 2018 Aug 22] Available From: <https://www.ada.org/en/press-room/news-releases/2013-archive/august/american-dental-association-statement-on-regular-brushing-and-flossing-to-help-prevent-oral>.
  19. Bianco A, Fortunato L, Nobile CG, Pavia M. Prevalence and determinants of oral impacts on daily performance: results from a survey among school children in Italy. *Eur J Public Health* 2010; 20(5):595-600.
  20. Van den Branden S, Van den Broucke S, Leroy R, Declerck D, Hoppenbrouwers K. Effects of time and socio-economic status on the determinants of oral health-related behaviors of parents of preschool children. *Eur J Oral Sci* 2012; 120(2):153-60.
  21. Ravera E, Sanchez GA, Squassi AF, Bordoni N. Relationship between dental status and family, school and socioeconomic level. *Acta Odontol Latinoam* 2012; 25(1):140-9.
  22. Bekiroglu N, Bakkal M, Ozbay G, Karadeniz PG, Kargul B. Validity and reliability of Child Perception Questionnaire (CPQ11–14) by Rasch Analysis in Turkish children. *Pediatric Dental Journal* 2017; 27(1):14-20.
  23. Zaror C, Pardo Y, Espinoza-Espinoza G, Pont À, Muñoz-Millán P, Martínez-Zapata MJ, et al. Assessing oral health-related quality of life in children and adolescents: a systematic review and standardized comparison of available instruments. *Clin Oral Investig* 2019; 23(1):65-79.
  24. Ghaffari M, Rakhshanderou S, Ramezankhani A, Buunk-Werkhoven Y, Noroozi M, Armoon B. Are educating and promoting interventions effective in oral health? a systematic review. *Int J Dent Hyg* 2018; 16(1):48-58.
  25. Ghaffari M, Rakhshanderou S, Ramezankhani A, Noroozi M, Armoon B. Oral health education and promotion programmes: meta-analysis of 17-year intervention. *Int J Dent Hyg* 2018; 16(1):59-67.
  26. Suvarna R, Rai K, Hegde AM. Knowledge and oral health attitudes among parents of children with congenital heart disease. *Int J Clin Pediatr Dent* 2011; 4(1):25-28.
  27. Khanduri N, Singhal N, Mitra M, Rohatgi S. Knowledge, attitude, and practices of parents toward their children's oral health: a questionnaire survey in Bhairahawa (Nepal). *International Journal of Pedodontic Rehabilitation* 2018; 3(2):59-61.
  28. Agostini BA, Machry RV, Teixeira CR, Piovesan C, Oliveira MD, Bresolin CR, et al. Self-perceived oral health influences tooth brushing in preschool children. *Braz Dent J* 2014; 25(3):248-52.
  29. Vernon LT, Da Silva AP, Seacat JD. In defense of flossing: part ii-can we agree it's premature to claim flossing is ineffective to help prevent periodontal diseases? *J Evid Based Dent Pract* 2017; 17(3):149-58.

30. Ruff RR, Senthil S, Susser SR, Tsutsui A. Oral health, academic performance, and school absenteeism in children and adolescents: a systematic review and meta-analysis. *J Am Dent Assoc* 2019; 150(2):111-21.
31. Dhawan P, Singh A, Agarwal A, Aeran H. Psychometric properties of Hindi version of child oral impact on daily performances (C-OIDP) index amongst school children in North India. *J Oral Biol Craniofac Res* 2019; 9(1):10-3.