

Socio-Economic Statuses and Oral Health Behaviours in a Sample of Iranian Students

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Abstract

Aim: Oral health is one of the most important parts of public health which significantly affects on quality of life. The purpose of this study is to assess the socio-economic statuses as well as oral health behaviors among a sample of Iranian students studying in elementary level.

Methods: This was a cross-sectional study which was conducted from April 2012 to November 2012. Data obtained from a face-to-face interviews with students studying in elementary schools of Chahbahar, Iran. Considering inclusion criteria, 300 eligible students were selected through a two - stage random cluster sampling. Data were analyzed through descriptive statistics using SPSS version 11.5.

Finding: Totally 300 students who studying in grade four or five of elementary schools took part in the study. The mean age of subjects was (11± 2.81). Of all students, 11/7% (n = 35) never brush their teeth, 18% (n=54) never floss and 20% (n= 62) never used mouth wash. Furthermore, 94 students (31%) of students had no dental visits regularly. As the results showed, there were significant relationship between lower parents' educational level (P=0.02), not to access to dental caries services (P=0.04) and lower income (P=0.03) and reasons for not doing oral health behaviour.

Conclusion: According the results of this study the students who were in lower socio economic levels, doing less dental healthy behaviors.

Key words: Oral healthy behavior, Socio-economic, Elementary students, Cross sectional study, Iran

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Introduction

Oral health plays an important role in the overall health of the body and the quality of life of individuals [1-3]. Previous studies showed that a large number of school-aged students in developing countries are suffering from tooth decay and have limited access to oral health care services [4, 5]. Crowdly and co-workers found that the increased hours of absence from the school is due to oral health problems [5].

Despite attempts to improve this health problem in children, the evidences show that the mean DMFT (Decayed, Missing, Filled Tooth) has been increased due to poor oral health as well as lack of regularly visits, tooth and tongue brushing, and daily flossing [6]. The studies conducted between 1990 to 2010 show the rate of DMFT among students has been increased from less than 2 teeth to more than 4 teeth [7, 8]. According to the WHO (World Health Organization) reports, the mean DMFT index for 12 - year old children in America, Europe, Africa and the Eastern Mediterranean Region are 2.8, 2.6, 1.3 and 1.7 respectively [9].

It has been argued that the effective techniques for preventing dental decay and periodontal diseases include oral health self-care such as using dental floss and brushing as well as fluoride therapy [10]. The existed evidences

recommend more health promotion programs to reduce dental decays and periodontal diseases [11].

The studies revealed that the regular use of the tooth brush and oral health self-care behavior could reduce the tooth plaque [12, 13] and prevent from periodontal disease [14, 15]. However, studies show that usage of these preventive techniques are still limited [16, 17].

It has been reported that %18 to %80 of the adolescents living in Europe and North America, %20 of Nigeria and %30 to %60 of Eastern Mediterranean Region brush their teeth [18, 19]. In south of Iran a significant proportion of adolescents are having poor oral hygiene and the DMFT rate in this region is 1.9 [20]. Moreover, it has been reported that 0.48% of Iranian adolescents brush their teeth irregularly and only 7.5% of this high risk group use inter dental cleaning tools [21]. Previous researches revealed that level of socioeconomic status could be related to oral health behaviors [22, 23]. Freddo and co workers verified that lower socio-economic status was associated with less daily flossing, less brushing and dental visits [24]. With this regard, health promotion programs especially for students with low socio economic status recommended by the researchers [25]. It has been argued that high socio - economic statues could cause better quality of life of families that subsequently

could result in better understanding of oral healthy behaviors [26, 27]. As there are limited studies to investigate the association between socio-economic status and oral health behavior in elementary students studying in Chahbahar city located in south of Iran. Therefore, this study aimed to assess relation between socio-economic status of the students and oral health behaviors in a sample of students studying in elementary level of Chahbahar schools. However, the results of this study may draw the attention to public health decision makers, ministry of health and other stakeholders to improve policies and programs.

Materials and Methods

This cross-sectional study was conducted in Chahbahar, Iran from April 2012 to November 2012. The target group of the study was the students who studying in grade four or five of elementary schools with age range of 10 to 12 years old. Chahbahar is located in south of Iran. As usual, people living in southern provinces of Iran are in low to moderate level of socio economic status [28] and they suffering from lack of accessing to fluoride water as well as inefficient / insufficient nutrition [29]. In city of Chabahr, from all female elementary schools 3 schools were selected by simple random sampling. Of each school of the selected schools, all eligible

students of grade 4 grade 5 classes who were satisfied to enter into the study were selected. Therefore 300 elementary female students of total 1904 students of Chahbahar took part in the study by a two-stage random cluster sampling. The procedure of sample size calculation was according to previous study [30].

Inclusion criteria of the study were being aged between 10 and 12 years, being fluent in understanding and speaking Farsi language and willing to participate in this study. However, the students excluded from the study if their parents did not sign the consent form. At the first, the first author explained the aims and methods of the study for students and their parents and if they were pleased to participate in the study, the consent forms were signed by them. A researcher-made questionnaire including three sections was used in the study. The first section was regarding demographic characteristics, second part was about students' oral health behaviours and the third section was about the sources of students' information regarding oral self-care. The demographic characteristics included questions about age, gender, birth order, family size, parent's education level, parents' job and living area of the students. The second section included of questions regarding the behaviors of brushing, flossing, using mouth wash and regularly dentist visit. The final section includes some

questions about the source of the information about the oral health behaviours and oral self-care. Validity of descriptive researcher-made questionnaire was approved by 10 specialists. To test reliability, internal consistency was assessed using Cronbach's alpha coefficient. An alpha equal to or greater than 0.70 was considered acceptable. The alpha coefficient for this questionnaire was as 0.80. Data were gathered through face to face interviews and analyzed through descriptive statistics and X² correlation test using version 11.5 of SPSS program

The study was approved by the ethics committee of Tarbiat Modares University. The subjects were informed about the aim and procedure of the study and the informed consent forms were signed by the students' parents.

Results

Totally, 300 female students aged between 10 and 12 took part in the study. The mean age of subjects was 11± 2.81. The demographic variables of the study population was shown in table 1. Of all students, 11/7% (n = 35) of students never brush their teeth, 18% (n=54) never floss. 20% (n= 62) never used mouthwash. It was observed 31% of students (n= 94) had no dental visits regularly. The student's reasons for not doing oral health behaviour was shown in table 2. The students had received information about oral

health and self-care behaviours through sources such as physician (29.3%), health instructor (32%), health care providers (9%), parents (7.3%), radio and television (0.7%), newspapers (3.7%) and school teachers (8%). The result of χ^2 test showed that significant relationship was between socio-economic statuses (income) and doing oral health behaviour (p=0.04). There was statistically significant relationship between parents' education level and oral health behaviors (p=0.02).

Table 1 Demographic characteristics of the studied students (n=300)

Variable	Number	Percent
Age		
10 years old	139	46/3
11 years old	161	53/7
birth orders		
First	60	20
Second	70	23/3
Third	59	19/7
Fourth / Fifth	61	20/3
Sixth and more	50	16/4
Number of family member		
3 or less individual	50	16/7
4 individuals	43	14/3
5 individuals	51	17
6 individuals	44	14/7
7 individuals	33	11
8 individuals	36	12
9 or more individuals	43	14/3
Level of fathers' education		
Illiterate	64	21/3
Primary	78	26
Guidance	60	20
Diploma and above	98	32/6
Level of mothers education		
Illiterate	131	43/7
Primary	95	31/7
Guidance	39	13
Diploma and above	35	11/6
Fathers' job		
Unemployed	75	25
Worker	59	19/7
Employee	77	25/7
Free	89	29/7
Mothers' Job		
Housewives	229	76/3
Non Housewives	71	23/7

Table 2 Student's reasons for not doing oral health behaviors (n = 300)

Not brushing the teeth (n=35 ,11/7%)	N	%
I have no brush	2	6
I don't like brushing	7	20
It is not necessary to brush my teeth	26	74
Not flossing teeth (n=54, 18%)		
I have no dental floss	43	79.6
I do not like flossing my inter dental	3	5.6
I don't know how to floss	5	9.2
Brushing is enough	3	5.6
Not using mouthwash (n=62, 20%)		
I have no mouthwash	49	79
I don't like to use mouthwash	4	6.5
Mouthwash tastes bitter	5	8
Brushing is enough	4	6.5
Not visiting the dentist regularly (n=94, 31%)		
I have no enough money	82	87.2
My parents do not have time to take me to the dentist	6	6.4
I have no time to visit the dentist	6	6.4

Discussion

This descriptive study was done to assess the relationship between socio-economic statuses and oral health behaviors in Iranian school children in Chabahar, Iran.

The result of this study illustrated that there were significant relationships between socio-economic statuses and doing oral health behavior. According to our findings lower socioeconomic status was associated with a lower frequency of daily flossing, fewer annual dental visits and a lower prevalence of dental treatment visits. In line of this finding, Peer Freddo showed that lower socioeconomic status was associated with a lower frequency of daily flossing, fewer annual dental visits and a lower prevalence of dental treatment visits. Also, healthy lifestyle was associated with better oral hygiene habits and more frequent dental visits [24]. Since oral health behaviours

can affect the oral health, attempting to construct good oral health behaviours can cause the general health of individuals [31].

Par yab [32] Neamatollahi [33] Amanlou [34] and McDonald [35] found that the student's oral health status with the lower socioeconomic status were worse than the others which were in higher status.

In consistent with present study, the other research showed that parents with higher education and better job have better performance in the field of oral health. Educated mothers usually gain more knowledge, because they have more communication with the community [28]. Hereby, it could be discussed that due to impact of socio - economic factors on the oral health behavior disparities, designing and implanting appropriate interventions and services to the disadvantaged students should

be considered.

The results of this study showed that students had not regular health behaviors to prevent dental decay. According to a study by Yazdani, oral cleanliness and tooth brushing among 15-years old adolescents in Iran were at poor levels. Therefore, intensive attempts need to enhance rates of twice-daily tooth brushing and to improve its' quality [36]. Pakpoor and co-workers reported that not being believed in benefits of oral health behavior to prevent tooth decay was the most important reason for not doing healthy behavior. However, the economic problem was the second reason. Previous researches revealed a significant relation between high DMFT scores and such variables as increasing age, male gender, lower levels of parental education, family income, lower frequency of tooth brushing, less dental flossing, and no dentist visits [2, 37, 38].

The results of present study revealed a strong positive association between income and job statuses with doing oral health behaviours.

The other study reported that maternal education and occupation, could provide insights for improving their children's health habits [39]. The main sources of the oral health information for the studied sample were the physicians, school teachers and health care providers as well. In previous research has been conducted in Iran, it has been revealed

that the most important sources of the oral health information were dentists and the parents [40]. Loignon and co workers reported that direct and face to face communication with patient will cause more beneficial effects on behavior change [41] and it may develop motivation and appropriate decision-making for doing oral health behaviors [42]. Humphreys and co workers stated that Counseling skills and educational techniques must be considered in designing educational program to prevent dental caries [43]. However the present study approved the hypothesis of the study regarding the relation between socio economic statuses and oral healthy behavior.

Limitation

Despite this study has its' own strength to highlight the relationships between socio demographic statuses and oral health behavior, there are some limitations that might influence on the results. Firstly, in this study the student's or their parents' self-efficacy and other variables related to oral health behaviour such as their attitudes were not investigated. However these factors might influence the oral health behaviour and subjective perception of the school- aged children. Therefore, longitudinal studies are necessary to assess the association between these influencing variables.

Although this study has its' own strength points, being self report data collection especially by students who were not in range of illegal age was the other important limitation in this project. Thus, this might affect the results reported in this study.

Conclusions

This study showed doing oral health behaviors seemed to be related to family's socio - economic factors. Lower parents' educational level and poor oral hygiene services were probably associated factors for children dental problem.

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Conflict of Interest

This study has not any Conflict of Interest.

References

- [1] Hashemian M, Falahi A, Tavakoli G, Zarezadeh Y, Nemat Shahr Babaki B, Rahaei Z. Study of the Impact of Education on Inter-Dental Cleaning behavior based on Trans-Theoretical Model. *Journal of Oral health & Prevention Dentistry* 2012; 1: 37-46.
- [2] Pakpour A, Hidarnia A, Hajizadeh E, Kumar S, Fridlund B. Why Iranian adolescents do not brush their teeth: a qualitative study. *Int J Dent Hygiene* 2012; 10(2): 86-90.
- [3] Fallahi A, Ghofranipour F, Ahmadi F, Malekafzali B, Hajizadeh E. Adolescent's perspectives on the factors that influence caries development: A qualitative study. *Scientific Journal of School of Public Health and Institute of Public Health Research* 2013; 10(4): 65-80.
- [4] Muirhead V, Marsens W. An ecological study of caries experience, school performance and material deprivation in 5-years-old state primary school children. *Community Dent Oral Epidemiol* 2004; 32: 265-70.
- [5] Crowdy E, O'Brien G, Marcenes W. School lunch tables, a new population based predictor of dental restorative treatment need. *J Community Dent Health* 2003; 20: 78-82.
- [6] Taymoori P, Fallahi A, Berry T. Development and testing of the decision balance and self efficacy for oral self-care among Iranian adolescents. *Eastern Journal of Medicine* 2011; 16: 261-8.
- [7] Solhi M, ShojaeiZadeh D, Seraj B, Faghih Zadeh S. The Application of the Health Belief Model in Oral Health Education.

- Iranian J Publ Health 2010; 39(4): 114-9.
- [8] Saied-Moallemi Z. School-based intervention to promote preadolescents' gingival health: a community trial Oral health promotion in preadolescents. Community Dentistry and Oral Epidemiology 2009; 37: 518-26.
- [9] Pakshir HR. Oral health in Iran. International Dental Journal 2004; 54: 367-72.
- [10] Nyvad B, Ten Cate J, Robinson, C. Cariology in the 21st Century: State of the Art and Future Perspectives-50th anniversary ORCA. J Caries Res 2003; 38(3): 170.
- [11] Coulson N, Buchanan H. Student attendance at dental checkups: An application of the Transtheoretical Model. Health Education Journal 2002; 61(2): 309.
- [12] Bauroth K, Charles C, Mankodi S, Simmoms K, Zhao Q, Kumar L. The efficacy of an essential oil antiseptic mouthrinse vs. dental floss in controlling interproximal gingivitis: a comparative study. J Am Dent Assoc 2003; 134: 359-65.
- [13] Bellamy P, Barlow A, Puri G, Wright K, Mussett A, Zhou X. A new in vivo interdental sampling method comparing a daily flossing regime versus a manual brush control. J Clin Dent 2004; 15: 59-65.
- [14] Warren P, Chater B. An overview of established interdental cleaning methods. J Clin Dent 1996; 7(7): 65-9.
- [15] Vehkalahti M, Nikula-Sarakorpi E, Paunio I. Evaluation of salivary tests and dental status in the prediction of caries increment in caries-susceptible teenagers. J Caries Res 1996; 30: 22-8.
- [16] Bader H. Floss or die: implications for dental professionals. J Dent Today 1998; 17: 76-8.
- [17] Rimondini L, Zolfanelli B, Bernardi F, Bez C. Self-preventive oral behavior in an Italian university student population. J Clin Periodontol 2001; 28: 207-11.
- [18] Maes L, Honkala S. Tooth brushing and social characteristics of families in 32 countries. Int Dent J 2006; 56: 159-67.
- [19] Sofola O, Shaba O, Jeboda S. Oral hygiene and periodontal treatment need of urban school children compared with that of rural children in Lagos State, Nigeria. J Odonto-Stomatologie Tropicale 2003; 26: 25-9.
- [20] Delshad Noghabi A. oral hygiene in the teaching of the prophet. Rafsanjan Med J. 2006; 6: 7-14.
- [21] Ashrafizadeh S, Soori H, Ashrafizadeh M. Appraisal of DMET in school children of Ahvaz. Journal of Medical Sciences of Ahvaz 2002; 34: 60-6.
- [22] Cruz GD, Galvis DL, Kim M, Le-Geros RZ, Barrow S-YL, Tavares M, et al. Self-

- perceived oral health among three subgroups of Asian-Americans in New York City: a preliminary study. *Community Dent Oral Epidemiol* 2001; 29: 99-106.
- [23] Bastos JL, Peres MA, Peres KG, Araujo CLP, Menezes AMB. Toothache prevalence and associated factors: a life course study from birth to age 12 yr. *European Journal of Oral Sciences* 2008; 116: 458-66.
- [24] Freddo S, Aerts D, Abegg C, Davoglio R, Vieira P, Monteiro L, et al. Oral hygiene habits and use of dental services among teenage students in a city in southern Brazil. *J Cad Saude Publica* 2008; 24: 1991-2000.
- [25] Astrøm A, Rise J. Socio-economic differences in patterns of health and oral health behaviour in 25 year old Norwegians. *J Clin Oral Investig* 2001; 5: 122-8.
- [26] Hilton IV, Stephen S, Barker JC, Weintraub JA. Cultural factors and children's oral health care: a qualitative study of carers of young children. *Community Dent Oral Epidemiol* 2007; 35: 429-3.
- [27] Jung S, Tsakos G, Sheiham A, Ryu J, Watt R. Socio-economic status and oral health-related behaviours in Korean adolescents. *Soc Sci Med* 2010; 70(11): 1780-8.
- [28] Naderifar M, Ghaljaei F, Akbarizadeh M. Determination of the mothers' practice about orodental health of their children up to six years old. *Zahedan Journal of Research in Medical Sciences* 2010; 12(4): 43-489. (Persian)
- [29] Biglary H, Dehshibi AR. Survey of fluoride ion scattering in drinking water with using of geographical information system (GIS), Sistan and Bluchestan 2009-2010. 6th National Congress of Environmental Health, Tabriz, Iran.
- [30] Taslimi Taleghani M, Jazayery AD, Seshavarz.AK, Sadrzadeh Yeganeh H, Rahimi A. Effect Of Socio- Economic Status on The Efficacy of Nutrition Education in Promoting The Nutritional Knowledge, Attitude and Practice in First-Grade Guidance School Girls in Tehran. *Tehran University Medical Journal* 2005; 63(1).
- [31] Abiola Adeniyi A, Eyitope Ogunbodede O, Sonny Jeboda O, Morenike Folayan O. Do maternal factors influence the dental health status of Nigerian pre-school children? *International Journal of Paediatric Dentistry* 2009; 19(6): 448-54.
- [32] Paryab M, Hosseinbor M. Dental anxiety and behavioral problems: A study of prevalence and related factors among a group of Iranian children aged 6-12,2013. *J Indian Soc Pedod Prev Dent* 2013; 13(2):

- 82-6.
- [33] Neamatollahi H, Ebrahimi M, Talebi M, Ardabili M, Kondori K. Major differences in oral health knowledge and behavior in a group of Iranian pre-university students: a cross-sectional study. *J Oral Sci* 2011; 53(2): 177-84.
- [34] Amanloua M, Jafarib S, Afzalianmandb N, Bahrapour Omranya Z, Farsama H, Nabatia F, et al. Association of Saliva Fluoride Level and Socioeconomic Factors with Dental Caries in 3-6 Years Old Children in Tehran-Iran. *Iranian Journal of Pharmaceutical Research* 2001; 10(1): 159-66.
- [35] Mc Doland A, Ralph E, Avery D. *Dentistry for the child and adolescent*. St Louis Mosby Journal 2008; 31: 11-2.
- [36] Yazdani R, Vehkalahti M, Nouri M, Murtomaa H. Smoking, tooth brushing and oral cleanliness among 15-year-olds in Tehran, Iran. *Oral Health Prev Dent* 2008; 6: 45-51.
- [37] Pakpour A, Hidarnia A, Hajizadeh E, Plotnikoff R. Action and coping planning with regard to dental brushing among Iranian adolescents. *Psychol Health Med* 2012; 17(2): 176-86.
- [38] Pakpour A, Hidarnia A, Hajizadeh E, Kumar S, Harrison A. The status of dental caries and related factors in a sample of Iranian adolescents. *Community and preventive dentistry*. 2011; 16(6): 822-7.
- [39] Wigen T, Wang N. Parental influences on dental caries development in preschool children. An overview with emphasis on recent Norwegian research. *J Norsk Epidemiologi* 2012; 22(1): 13-9.
- [40] Rogéria Freire de Castilho A, Luiz Mialhe F, Souza Barbosa T, Maria Puppim-Rontani R. Influence of family environment on children's oral health: a systematic review. *J Pediatr (Rio J)* 2013; 89(2): 116-23.
- [41] Loignon C, Allison P, Landry A, Richard L, Brodeur JM, Bedos C. Providing Humanistic Care: Dentists' Experiences in Deprived Areas. *J Dent Res* 2010; 89(9): 991-5.
- [42] Shahraki Sanavi F, Ansari-Moghaddam A, Rakhshani F, Navabi Rigi S. Two Teaching Methods to Encourage Pregnant Women for Performing Normal Vaginal Delivery. *Iranian Journal of Medical Education* 2010; 12(13): 192.
- [43] Humphreys RE, Richards W, Gill P. Perceptions of first year foundation dentists on oral health education and its role in general dental practice. *British Dental Journal* 2010; 209(12): 601-6.