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Why Iranian adolescents do not brush their teeth: a qualitative study

Abstract: *Objectives:* To explore and describe attitudes towards tooth-brushing among Iranian adolescents. *Methods:* A series of focus-group sessions were held with 37 Iranian adolescents in schools. The groups comprised five to eight adolescents. All focus-group discussions were tape-recorded and then transcribed verbatim. All transcripts, codes and categories were read several times to extract a theme. Data were analysed using a qualitative content analysis approach. *Results:* Four major categories emerged from the analysis: brushing teeth is a necessary evil, parental influence on not brushing teeth, brushing teeth is insignificant, and brushing teeth is a health hazard. The theme identified in the latent content described that tooth-brushing is not part of the adolescents' activities of daily living. *Conclusions:* Health educators should stress on the engagement of parents, awareness of the adolescents on brushing techniques and causes of toothache, and address any misconceptions regarding tooth-brushing.

Key words: adolescents; dental brushing; oral health; qualitative analysis

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Introduction

Oral health plays a key role in general health (1), and according to WHO, it is defined as 'Being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects and other diseases and disorders that affect the mouth and oral cavity' (2). Also, the Surgeon General of the United States says that oral health includes the entire oral–facial complex and it is beyond the health of the teeth. Good oral health can enable individuals to communicate effectively, enjoy food, speak well, lead a higher quality of life, and acquire higher self-esteem and social confidence (3, 4). On the other hand, oral diseases cause serious long-term problems both socially (e.g. less social confidence) and physically (e.g. heart diseases) (5–9). Despite considerable worldwide improvement in oral health, problems of oral health still persist both in developed and in developing countries (10).

Nearly 20% of the world population comprises adolescents and more than half of them suffer from oral diseases (11). Oral diseases cause several problems in adolescents, as they cause an estimated loss of 52 million hours of school time for adolescents each year (12, 13). Despite the reduction in dental caries in all ages, studies show that it remains a major problem during adolescence. Approximately 60–90% of school-aged children suffer from dental caries in developed countries (14). In Iran, the mean number of Decay Missing Filling Tooth (DMFT) is the highest in the region (15). Unfortunately, in Iran, there are no systematic data that allow us to estimate a long-term trend in oral health

status and oral diseases (15). Some studies have shown that oral health level is low in Iran, as there is a high rate of untreated caries and an increasing rate of smoking among adolescents (15, 16).

Nonetheless, most of the oral diseases are simply preventable. There is general agreement in dentistry that tooth-brushing is one of the most effective and appropriate tools for removing dental plaque (17). In Europe and North America, 18–86% of adolescents reported twice-daily tooth-brushing with significant gender differences – girls brushing more frequently than boys (18) – whereas in the Eastern Mediterranean Region, the corresponding percentages range from 33% to 62% (19–21). Yet, in Iran, a recent study showed that 11% of adolescents reported never using a toothbrush and 22% reported brushing their teeth at least once daily (22).

Although qualitative studies on adolescents' views of oral health are available (23), to our knowledge, no research has been published exploring the attitudes towards oral health in a group of adolescents within a specific culture (i.e. Muslim) in Iran. Accordingly, there is a vital need to answer these questions: 'Why do Iranian adolescents not brush their teeth?' and 'Why do Iranian adolescents not brush their teeth regularly?' The aim of the study was therefore to explore and describe attitudes towards tooth-brushing among Iranian adolescents.

Material and methods

Design, setting and method description

The study was approved by the Ethics Committee of Tarbiat Modares University in 2010, and an inductive design with a qualitative content analysis approach (QCA) was chosen. A qualitative content analysis approach deals with 'the objective, systematic and quantitative description of the manifest content of text but, over time, it has expanded to also include interpretations of latent content' (24). Qualitative content analysis is also a systematic way to analyse communications based on an inductive reasoning that involves moving from a set of specific facts to a general conclusion (24).

Informants and sampling

A purposive sampling – a non-representative subset of a larger population that is constructed to serve a very specific purpose (25) – was used for the selection of the adolescents in high schools in Qazvin. The adolescents were eligible if they reported 'brushing irregularly (i.e. did not use toothbrush daily)' or 'do not brush'. Also, selection of the adolescents was based on age (high school, 14–17 years old) and gender. Potential informants and their parents were given a written invitation along with information about the study to provide consent for participation from both the parties. The final sample consisted of 37 participants, of whom 22 were male. Of these 37 adolescents, 15 informants reported that they never brushed their teeth, and the rest of the adolescents reported that they used their toothbrush irregularly.

Data collection

Prior to implementation, one pilot interview was carried out to evaluate the interview guide, resulting in some changes. The study was performed through six focus-group discussions. The size of the groups varied from five to eight persons: two groups with five, two groups with six, a group with seven and another group with eight adolescents. All focus-group sessions were held in classrooms. Focus-group discussions were conducted by a health education specialist (the first author) who had been trained in maintaining good group dynamics. An observer recorded the proceedings of focus-group discussions and took notes. The discussion of groups lasted 50–60 min. The interviews were based on an open interview format, where the initial question was 'What is the reason for the lack of brushing?' To let the adolescents reflect over their answers, we used follow-up questions such as 'What do you think when you say brushing?' and 'What does it mean for you?'.

Data analysis

Consistent with QCA tradition (24), the first author read the text several times to obtain a sense of its content. The parts of the text related to the aim were transformed into an analysis matrix of meaning units, and the matrix was analysed by the co-authors (all with vast experience in both the subject and the methodology. The condensed units were abstracted, labelled with codes and subsequently grouped into categories that reflected the central message, i.e. they formed the manifest content. Finally, a theme was formulated, i.e. the latent content of the text was described (24). In all stages of the study, the authors restrained and critically reflected their prior understanding that resulted from their professional and personal experiences of working with health and dental care or having relatives or friends living with dental ill health. To encounter data, the authors' personal beliefs or assumptions were also put under consideration and critically reflected on in an open manner (26).

Trustworthiness and limitations

Trustworthiness is a key concept in QCA (24). In this study, the trustworthiness was assessed by credibility, dependability and transferability. Credibility refers to how well the sampling of data and the analysis process focus on the research question. Data collection was carried out by a health education specialist (first author) who had worked on oral health. The first author transcribed the focus-group discussions after they were conducted; this helped to reduce the risk of misunderstanding. Credibility was also addressed by the informants' differences in experiences, age and gender that gave a wide variation in their responses. However, a somewhat larger size of the adolescents who did not brush their teeth had been

desirable. Nevertheless, the purposive sample provided useful descriptions for analysis. Also, the sampling procedure had been valuable with more females to avoid an unequal gender distribution influencing the generalization of the findings. Dependability means rigorously following previous steps described as developed by previous researchers, i.e. following the established QCA tradition according to Graneheim and Lundman (24). Moreover, negotiated consensus was used to discuss the suggestions for the classification of categories and theme until agreement was reached among all authors. Transferability means qualitative findings can be generalized across similar contexts. In this study, the transferability found among informants with similar cultural and ethnic backgrounds.

Results

Four major categories emerged from the analysis: brushing teeth is a necessary evil, parental influence on not brushing teeth, brushing teeth is insignificant and brushing teeth is a health hazard. The theme identified in the latent content described that brushing teeth is not part of the adolescents' activities of daily living. The theme emerged as a result of different situations that the Iranian adolescents experienced in relation to either themselves (internal impact) or to their relatives, friends and professionals (external impact).

Brushing teeth is a necessary evil

The adolescents brushed their teeth when they found it a necessity; pain was one reason why they brushed their teeth and was related to themselves:

I brush my teeth when I have a toothache. (a boy, 17 years old).

A similar reason related not only to themselves but also to the professional impact was before they received dental care:

I brush my teeth when I have to go to dentist for a filling. (a girl, 16 years old)

Having yellow teeth was another, more aesthetic reason, which was mainly related to themselves:

I brush my teeth when I look into mirror and find them yellow. (a girl, 17 years old)

Parental influence of not brushing teeth

The parents served as a model concerning oral health habits. Adolescents accepted and did whatever their parents and peers stressed to them. Mostly, the parents considered getting an acceptable score in examinations and passing entrance examinations for university:

My parents expect that I pass my entrance exam successfully. This is the only thing that I think about. I must not do my best for the exam and I must spend time on reading. (a girl, 17 years old)

Another reason was parents' unconcern with brushing their teeth:

My father doesn't brush his teeth and he has good teeth. Therefore I don't need to brush my teeth. (a girl, 16 years old)

Brushing teeth is insignificant

The adolescents complained if they had to brush their teeth because it was seen as insignificant; an irksome reason existed among both genders and related to themselves:

I don't enjoy brushing my teeth. (a boy, 17 years old)

and

Brushing is a boring work even for a short time. (a girl, 18 years old)

Instead, they pointed out more serious consequences related to themselves:

I have to do my home work; therefore, I am busy and I have no time for brushing. (a girl, 16 years old)

Forgetfulness, with or without having a reminder, was another reason related to themselves or the influence of relatives and friends:

I forget to brush my teeth often. There is no person or thing to remind me to brush. (a boy, 15 years old)

Adolescents thought that they had healthy teeth without brushing:

I don't need to brush my teeth because I have healthy teeth. (a boy, 14 years old)

Another neglected factor causing low priority was that they did not have any supportive information regarding how they should brush their teeth properly:

I do not have any information how I should brush my teeth (a girl 16 years old).

Brushing teeth is a health hazard

Adolescents pointed out bleeding in the gum as an unhealthy consequence for not brushing their teeth and damage to the enamel was another one, both related to themselves:

My gums begin bleeding when I brush my teeth. (a girl, 16 years old)

Discussion

To our knowledge, this study is the first qualitative study in oral self-care behaviour from Iran, providing useful information on the determinants of lack of tooth-brushing among adolescents.

The study revealed that seeking relief from toothache is an important reason for brushing teeth. The adolescents without pain reported a low demand on tooth brushing. The finding was novel and revealed that experience with dental pain led to tooth brushing among the adolescents. This is in accordance with a study which showed that dental pain was rarely

described by English adolescents as an unacceptable consequence of unhealthy oral health behaviours (27). In contrast, it has been discussed that dental pain hypersensitivity adversely affected oral hygiene practice (28). This could be attributed to acute pain that is associated with hypersensitivity, while toothache (because of caries) is usually chronic. Moreover, there were adolescents who brushed their teeth when they had to go to the dentist. Previous studies reported that dental pain is a major reason for seeking dental care (29, 30). Going to dentist could be a consequence of dental pain and we observed that adolescents brushed their teeth when they had dental pain. Thus, dental pain could be an indirect factor for the association between brushing teeth and dental visit. Dental appearance was another factor for brushing teeth at given times. Several studies have shown that adolescents generally consider dental care as an instrument for appearance rather than for health (27, 31, 32).

Consistent with other studies, our study showed that toothbrushing by adolescents is considered as personal grooming and the adolescents are influenced by family peer groups (23, 27). Therefore, parents have a crucial role for improving or deteriorating oral health and dental brushing in the adolescents. Lack of interest in brushing was another reason, i.e. brushing was considered a boring job. Perhaps, the reason for this is that most of the adolescents believe that dental caries is associated with heredity rather than oral hygiene behaviours. In a qualitative study by Hattne *et al.* (33), Swedish adolescents had a negative attitude to oral health and they regarded dental caries as an uncontrollable factor. This could impact on adolescents' self-efficacy on oral health.

Among adolescents, tiredness, forgetfulness and having no time because of heavy assignments and studying for university entrance examinations were also reasons to desist from brushing. The problems arose from not having a plan for dental brushing and daily activities, which is consistent with the studies of Östberg *et al.* and Hattne *et al.* (23, 33). These studies provide evidence that the formation of a plan – specifying when, where and how to act – can increase frequency of dental brushing behaviour for intended action. In this case, individuals will have a commitment for action. Moreover, in the planning, adolescents can expect what to do in the face of barriers, such as tiredness, that may keep them away from targeted behaviours (34, 35).

In this study, gum bleeding was a reason for not brushing the teeth. In a Jordanian study, the adolescents did not recognize the role of tooth-brushing in treating gingivitis; moreover, those adolescents who did not brush did not know about the positive effects of fluoride on the dentition (36). Similar findings were shown from a Chinese study where schoolchildren's knowledge about gum bleeding and the use of fluoride was poor (37). Accordingly, poor knowledge about tooth-brushing and proper technique for brushing can be the vital reasons for not brushing their teeth.

In conclusion, this study provides important information on the determinants of lack of tooth brushing among Iranian adolescents. Accordingly, there are some necessary practical implications. First, the role of parents as an external factor to promote oral health among adolescents should not be neglected. Further research is necessary to fully understand the role of parents in facilitating oral health promotion among Iranian adolescents. Second, understanding misperceptions about dental brushing is important for dental professionals and also parents if they are to encourage adolescents to perform oral health behaviour.

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