

Oral Health Attitudes, Knowledge, and Behavior Among School Children in North Jordan

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Abstract: The aim of this study was to assess the knowledge, attitude, and behavior of school children towards oral health and dental care as well as to evaluate the factors that determine these variables. School children (n=557) of an average age of 13.5 years attending public schools in North Jordan were recruited into this study. The subjects completed a questionnaire that aimed to evaluate young school children's behavior, knowledge, and perception of their oral health and dental treatment. The participants' oral hygiene habits (such as tooth brushing) were found to be irregular, and parents' role in the oral hygiene habits of their children was limited. The study population showed higher awareness of caries than periodontal conditions. Irregular visits to the dentist were found to be common, and toothache was the major driving factor for dental visits. Children had positive attitudes toward their dentists; nevertheless, they indicated that they feared dental treatment. The children in this study also recognized the importance of oral health to the well-being of the rest of the body. Parents were not proactive in making sure that their children received regular dental care. Parents' knowledge and attitudes about the importance of oral health care and their fears about dental treatment influenced their children's dental care. The results of this study indicate that children's and parents' attitudes toward oral health and dental care need to be improved. Comprehensive oral health educational programs for both children and their parents are required to achieve this goal.

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The past fifty years have witnessed a reduction in the severity and prevalence of oral disease among the population of the developed countries.¹⁻³ Dental care has been systematically organized to improve dental health attitudes among children and the young.⁴ This development has improved children's dental health and changed the dental caries patterns affecting them.^{2,3} It also resulted in more adults being able to keep their natural dentition functional into a later age.^{1,5} Unfortunately, this is not the case in the Middle East.⁶⁻⁸

Previous studies among Jordanians showed that approximately 80 percent of Jordanian adults and children received dental examinations and treatment on an irregular basis.^{9,10} Another study concluded that 80 percent of north Jordan school children visited the dentist only for emergencies.¹⁰ In both studies, "treatment not needed" as well as "cost" were found to be the main barriers for regular dental attendance.

Taani showed that 25 percent of Jordanian adults suffered bleeding gums on brushing; around the same percentage suffered bad breath.⁹ Nearly 40 percent of Jordanian adults believed that they had periodontal disease. However, the knowledge of periodontal problems was found to be poor among Jordanian adults. These data indicate that development and implementation of well-structured dental health education programs is needed to improve and maintain suitable oral health standards among Jordanians.

Since the early 1990s, oral hygiene, gingival conditions, and dental caries have improved among school children of north Jordan.¹¹ Other studies on school children in north Jordan showed that dental plaque, calculus, and dental caries were reported higher than destructive periodontal disease.^{12,13} The incidence of both gingivitis and dental caries in north Jordan school children was found to be higher than that of school children in developed countries.¹⁴

In Jordan, the oral health system is in a transitional developmental stage, and systemic data collection is needed to plan oral health care for the public. Comprehensive preventive programs for oral health care are still lacking in Jordan, so more dental health education is needed to improve oral health standards among Jordanians.

Little is known about the oral health attitudes and behavior of children from developing countries such as Jordan in comparison with those from developed countries, although such knowledge is an indication of the efficacy of applied dental health education programs. This study provides data for future research and allows comparisons with children's oral health attitudes in other nations. Consequently, the purpose of this study was to investigate the dental health attitudes, knowledge, and behavior of school children in North Jordan.

Methods

The subjects comprising the population of this study were recruited from randomly selected ten public schools in Irbid Governate, North Jordan (a governate in Jordan is roughly equivalent to a county in Canada or the United States). According to their geographic location, schools in Irbid were divided into five sections: Central, Eastern, Western, Northern, and Southern. Two schools (one for males and the other for females) were randomly selected from each section to comprise a sample of ten schools. A total of 570 students were invited to participate in this study, and 557 students returned the completed questionnaires for a response rate of 97.7 percent. The study sample included 295 females (53 percent) and 262 males (47 percent). Subjects' age ranged from ten to sixteen years old with a mean age of 13.45 years. Sixteen years old is the age that marks the end of obligatory school education in Jordan.

Approval of the directorate of education in Irbid Governate was obtained, and a letter was sent to the selected schools explaining the purpose of the study and the procedures that would be followed during its conduct. The principal of each school was asked to inform the students and their parents about the study, and a day was set for each school to collect the data. Classes that contained children aged ten to sixteen years were approached to participate. These classes represent part of each school as all the schools contain students aged from six to sixteen years. Stu-

dents who were below ten years age were not invited to participate in the study as they were too young to understand and complete the questionnaire by themselves. The study was approved by the ethical approval committee at Jordan University of Science and Technology. Parents' approval and the subject's informed consent were obtained before recruiting the children into this study.

All subjects were requested to complete a comprehensive questionnaire (Appendix) adopted from Peterson et al.¹⁵ and Stenberg et al.¹⁶ The questionnaire included thirty-three items designed to evaluate the knowledge, attitudes, and behavior of young school children regarding their oral health and dental treatment. Assessment of participants' oral health knowledge included items on the effects of brushing and using fluoride on the dentition, the meaning of bleeding gums and how to protect against it, the meaning of dental plaque and its effects, the number of deciduous and permanent teeth, the effects of sweets and soft drinks on the dentition, and the effects of caries on the appearance.

Assessment of participants' oral health behavior included brushing activity (such as frequency, duration, time, and brushing aids), the parents' role in participants' oral hygiene and dental education, and dental visits (such as regularity, reason behind the visit, effect of pain and economics on dental attendance, information on first visit, and sought treatments). Items that assessed participants' dental attitudes included questions on fear from dental treatment, feelings regarding the treatment, thoughts about involvement in the dental treatment, opinions about and attitudes towards the dentist and the dental care, attitudes towards dental care and body care in general, and attitudes towards regular dental visits.

Subjects were asked to respond to each item according to the response format provided at the end of each. Response formats included forced choice format in which subjects choose one or more responses from a provided list of options, write-in the response, or perform a combination of the two. The subjects received a full explanation of how to score their responses and were made aware that there was more than one response format for some items. Furthermore, one of the investigators was always available during the completion of the questionnaire, and the participants were encouraged to approach him whenever they needed clarification of any point. For some items, the subjects were free to choose more than one answer for the same item. This explains why

the numbers in the frequency columns of the tables of results sometimes do not equal the total sample number for those items.

The questionnaire was pretested with forty selected school children who were requested to complete the questionnaire on two different occasions separated by seven days. The questionnaire was found suitable for application among the study population as there was high concurrence with the answers to the items on both occasions (Kappa test coefficient for all questions=0.93).

Descriptive statistics were obtained and means, standard deviation, and frequency distribution were calculated. The data were analyzed using the Statistical Package for Social Science 11.0 (SPSS 11.0, Inc., Chicago, IL).

Results

Different age groups and genders demonstrated no significant differences in their responses, so the frequency tables present the subjects as a whole.

Approximately 69 percent of the study sample brushed their teeth at least twice daily, while 17 percent reported irregular tooth brushing. Approximately 83 percent of the subjects reported using a toothbrush and toothpaste to clean their teeth. Two percent reported using dental floss, 6 percent reported using mouthwash, and 7 percent reported using toothpicks as extra aids for oral hygiene (Table 1). The study population did not brush their teeth at a similar time during the day (Table 1). However, most subjects brushed their teeth before going to bed and/or in the morning. About 71 percent of the subjects took at least two minutes to brush while 15 percent took less than one minute.

Parents' role in daily oral care was reported to be mainly related to giving advice on the importance of brushing (59 percent). Only 26 percent of the subjects reported being advised and watched by parents during brushing. Approximately 15 percent of the study sample reported that their parents never watched their brushing technique nor gave them advice on brushing.

About 70 percent of the study population was aware that gingival bleeding reflects gingivitis, while the rest either did not know or gave wrong answers such as gingival bleeding reflects healthy gingivae or gingival recession (Table 2). Around 40 percent of the sample knew that brushing and flossing help to prevent gingivitis, while the rest either did not know or

reported wrong answers such as using soft food as a preventive measure for gingivitis. Only 15 percent of the study population knew the significance of dental plaque, while the rest either did not know or reported wrong answers such as tooth discoloration.

When subjects were asked about the link between dental plaque on one hand and gingivitis, caries, and tooth discoloration on the other; only 13 percent thought that it might cause gingivitis, 32 percent thought that it might cause caries, and 25 percent thought that it might cause tooth discoloration.

Table 1. Oral hygiene habits among the study population (n=557)

	Frequency	Percentage (%)
Oral hygiene methods used		
Toothbrush and paste	463	83.1
Dental floss	12	2.1
Mouthwash	33	5.9
Toothpicks	37	6.6
Brushing intervals		
At morning	203	36.4
Before bed	293	52.6
Before bed and at morning	98	17.6
Other times	159	28.5
Role of parents in supervision of oral hygiene		
Parents watch and advise	146	26.2
Parents only advise but don't watch	329	59
Parents never cared	82	14.7

Table 2. Awareness of periodontal and gingival health among the study population (n=557)

	Frequency	Percentage (%)
Gingival bleeding means		
Gingivitis	389	69.8
Healthy gingivae	24	4.3
Gingival recession	44	7.9
Don't know	100	17.9
How to prevent gingivitis		
Brushing and flossing	222	39.8
Soft food	57	10.2
Vitamin C	136	24.4
Don't know	148	26.6
What does plaque mean		
Soft deposits on teeth	83	14.9
Heavy deposits on teeth	174	31.2
Tooth discoloration	98	17.6
Don't know	202	36.3

About 28 percent of the subjects failed to report a link between plaque and any of these conditions.

About 75 percent of the subjects reported having two or fewer carious teeth. Approximately 77 percent were aware that carious teeth and dental caries affect dental aesthetics (Table 3). Awareness of the importance of tooth brushing for caries prevention was high (81 percent) among the study population. Only 32 percent of the subjects were aware of the link between dental plaque and caries.

Only 2.7 percent of the subjects knew the correct number of the deciduous teeth, while 54 percent knew the correct number of permanent teeth. About 75 percent of the subjects reported having two or fewer carious teeth while 91 percent reported having two or fewer filled teeth.

Approximately 68 percent of the study population indicated that they did not know what treatment is required for toothache although 60 percent admitted the importance of such knowledge. Most subjects were aware that sweets (87 percent) and soft drinks (77 percent) have a negative impact on dental health (Table 3). Most subjects showed awareness

of the importance of toothbrushing for caries prevention (81 percent) and the positive effects of fluoride on the dentition (77 percent). Approximately 54 percent of the subjects were aware of the impact of the mouth and dental structures on the general health of the body, while 56 percent were able to recognize that treatment of toothache is as important as treatment of any other organ (Table 3).

Many subjects (47 percent) reported that they visited the dentist only when they felt pain. Only 33 percent of the study population reported that they were regular dental attendees although 82 percent of the study population were aware of the importance of regular dental visits. About 20 percent of the study population never or rarely visited a dentist (Table 4).

Approximately 60 percent of the study sample had visited the dentist during the last year. Most of them (60 percent) reported that toothache was the driving factor for their last visit. Thirty-five percent of the subjects sought only examination (clinical and/or radiographic) and routine check-up on their last visit, while the rest presented to have certain treatments such as fillings, scaling, and extractions (Table 4). Parents encouraged their children to visit the dentist in only a small percentage of the cases (14 percent). The most common cause of not visiting the dentist on a regular basis or reason for disliking to visit the dentist was fear (49 percent). Lack of toothache (21 percent) and high cost (12 percent) were also among the causes of not visiting the dentist on a regular basis (Table 4). The majority of the study sample reported that their dentist did provide proper care (72 percent) and explained dental procedures (69 percent) and preventive instructions (65 percent) to them.

Table 3. Knowledge and awareness of dental and general health among the study population (n=557)

	Frequency	Percentage (%)
Does caries affect dental aesthetics?		
Yes	428	76.8
No	112	20.1
Don't know	17	3.1
Do sweets affect dental health?		
Yes	487	87.4
No	51	9.2
Don't know	19	3.4
Do soft drinks affect dental health?		
Yes	426	76.5
No	118	21.2
Don't know	13	2.3
Does the health of mouth and dentition impact the health of the body?		
Yes	302	54.2
No	231	41.5
Don't know	24	4.3
Treatment of toothache is as important as any organ in the body.		
Yes	310	55.7
No	229	41.1
Don't know	18	3.2

Discussion

This study presented a comprehensive overview of the oral health behavior, knowledge, and attitudes of school children ages ten to sixteen and, to the best of our knowledge, represents the first study of its kind that explored these issues among school children in Jordan. Previous studies involving Jordanian school children showed that oral hygiene, gingival conditions, and dental caries have improved since the early 1990s although gingival disease and dental caries among Jordanians were found to be more prevalent than in developed countries.^{9,11} When the results of this study were compared to European populations,^{1,15-17} European children demonstrated

better dental knowledge, attitudes, and health than their Jordanian peers.

Baltic and Eastern European countries have a higher prevalence of dental caries than Western Europe.^{3,18,19} Due to political and economic changes in these countries, oral health care has been given greater importance, and a reduction of caries prevalence has taken place.^{15,20} Comprehensive oral health educational programs were directed toward the professionals and the public, targeting the adults as well as the young. Meanwhile, governmental legislation and financial support facilitated the implementation of such programs and thus maximized the benefits. Political as well as economic reforms led to the participation of the United Nations and the international community in the process of reforming the health sector, thus raising the standards of oral health care. The experience of Eastern European countries might be relevant to Jordan and adopted by the dental health authorities here because this nation is witnessing very promising economic and political changes.

This survey found that a high percentage of the children in this study brush their teeth at least once daily although this effort was not fully organized or supported by parents. The subjects also reported irregular times of tooth brushing. These findings could be explained by the fact that many of our subjects were teenagers when children try to achieve independence and start their attempts to build their own identity without family interference. Lack of both parental and child oral health education might also explain these findings.²¹ Parents' failure to organize or support their children's toothbrushing efforts coincided with findings from previous studies that reported lack of acceptable levels of knowledge and awareness of periodontal problems among Jordanian adults.^{9,21} The use of other recommended oral hygiene methods such as dental floss and mouthwash was found to be rare; this also could be attributed to the lack of oral health education and/or the cost of such aids.

The study sample showed awareness of gingival bleeding as an indicator of periodontal disease (represented by gingivitis), a finding that agreed with the results of a previous study of twelve to fourteen-year-old Jordanian children.²² Despite this, the majority of the study population failed to link gingivitis to dental plaque and did not recognize the role of toothbrushing in treating gingivitis.

The high awareness of dental caries including its impact on the dentition, cause, and prevention in comparison to periodontal health could be attributed

Table 4. Attitudes towards professional dental care among the study population (n=557)

	Frequency	Percentage (%)
How often do you visit the dentist?		
Regularly	184	33
When in pain	261	46.9
Occasionally or never	112	20.1
Are regular visits to the dentist necessary?		
Yes	459	82.4
No	81	14.5
Don't know	17	3.1
The management sought in your last visit:		
Examination and checkup	197	35.4
Scaling and gum treatment	57	10.2
Fillings	95	17.1
Crown or bridge	9	1.6
Orthodontic treatment	27	4.8
Extractions	114	20.5
Fluoride application	7	1.3
Others	51	9.2
The driving factor for your last visit:		
Toothache	327	58.7
Parents' advice	79	14.2
Dentist's advice	42	7.5
Other reasons	102	18.3
Reasons behind not visiting/dislike visiting the dentist:		
Fear	272	48.8
of drilling	137	24.6
of needle	133	23.9
in waiting room	10	1.8
from thinking of tomorrow's appointment	8	1.4
High cost	65	11.7
No clinic nearby	41	7.4
No time	50	9
No specific reason	23	4.1
Dentist explains procedures before treatment:		
Yes	384	68.9
No	150	26.9
Don't know	23	4.1
Dentist cares properly about the patient:		
Yes	399	71.6
No	124	22.3
Don't know	34	6.1
Dentist cares about treatment but not prevention:		
Yes	164	29.4
No	361	64.8
Don't know	32	5.7

to the fact that dental caries is more prevalent in children than periodontal disease. This will eventually improve the children's knowledge regarding dental caries as they attend dental clinics seeking treatment

for it; thus, they may receive more professional advice in this regard.

During the last decade, extensive efforts have been made by the dental schools in Jordan in an attempt to improve the periodontal knowledge and practice of the dental personnel in this country, but still these efforts are not enough to raise the standards of professional periodontal practice among Jordanian dentists.^{9,21} Consequently, dental health education programs that aim to improve oral health practice among the population are very important. Improving public awareness of periodontal health is an essential public health goal in Jordan.

Most of the study subjects reported irregular dental attendance, and this finding is consistent with the findings of other studies on Jordanian adults and children.^{9,10} A surprising finding in this regard was that most participants were aware of the importance of regular dental attendance. Some findings in this study might offer an explanation for the irregular dental attendance among the participants. A high proportion of the subjects reported that they did not attend due to fear from dental treatment, high costs of dental care, and lack of toothache. Lack of parental encouragement and advice to visit the dentist might also contribute to the irregular dental attendance. Lack of parents' regular dental attendance might be reflected in their children. Dental attitudes displayed by parents might also offer an explanation of the lack of regular attendance.²³

Fear of dental treatment was found to be high among the study population; this coincided with previous study on Jordanian private and public school children.¹⁰ This might be attributed to the lack of proper oral health education programs for both children and parents, which in addition to the above mentioned reasons rendered dental treatment undesired.

The participants demonstrated positive attitudes toward their dentists and high awareness of the link between oral health and systemic well-being. This might be explained by the fact that dental schools in Jordan have been consciously promoting the role of prevention and the proper management of young patients by taking systemic well-being, psychological aspects, and patients' satisfaction into consideration. It is important to mention that emphasis on the link between oral health and well-being of the rest of the body might help promote oral health care and oral self-care practice among school children and the public. However, educational oral health programs in Jordan have been mainly conveyed to

the public on a narrow scale by certain formal medical/dental institutes and dental schools in Jordan. Unfortunately, these efforts are limited and insufficient nationwide; hence, there is a need for comprehensive national educational programs to improve the oral health practice, knowledge, and attitudes of the general population.

Potential Limitations

This project was dependent on self-reported data derived from school-age children with varying levels of familiarity with completion of questionnaires and varying levels of language ability, which may have influenced the selection of responses. This might limit the study due to misinterpretation and misunderstanding of questionnaire items by the subjects. However, the questionnaire was pretested before the study was conducted with positive results, and the items were written at a language level that should have allowed comprehension by even the youngest subjects (age ten years). Furthermore, the investigator was always available during the completion of the questionnaire, and the subjects were encouraged to approach him whenever they needed clarification of any point. It is also not known if this particular sample of 557 public school children is representative of other samples of children of similar age in Jordan. However, we believe that the sample was sufficiently large enough, including ten different schools, and drawn from an economically diverse area to make the study group reasonably representative of other regions of Jordan.

Conclusion

We believe that the oral care educational needs described in this article exist in many developing countries. The results of this study might help to evaluate the efficacy of public education programs in the future. The results of this study indicate that parents' education must be included in any national program that promotes preventive oral care in schools as well as in other oral health educational programs aimed at the general public. This recommendation is based on the finding that children were aware of the importance of dental care, but their parents' perceptions and knowledge seemed to significantly affect the frequency of and the reason for their dental visits.

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REFERENCES

1. Downer MC. The improving oral health of United Kingdom adults and prospects for future. *Br Dent J* 1991; 23:154-8.
2. Burt BA. Trends in caries prevalence in North American children. *Int Dent J* 1994;44:403-13.
3. Marthaler T, O'Mullane DM, Vbric V. The prevalence of dental caries in Europe 1990-1995. *Caries Res* 1996; 39:237-55.
4. Holst D, Schuller A, Grytten J. Future treatment needs in children, adults, and the elderly. *Community Dent Oral Epidemiol* 1997;25:113-8.
5. O'Mullane D, Whelton H. Caries prevalence in the Republic of Ireland. *Int Dent J* 1994;44:387-91.
6. Al-Tamini S, Peterson PE. Oral health situation of school-children, mothers, and schoolteachers in Saudi Arabia. *Int Dent J* 1998;48:180-6.
7. Al-Mutawa S, Al-Duwairi Y, Honkala E, Honkala S, Shyama M. The trends of dental caries experience of children in Kuwait. *Dent News* 2002;9:9-13.
8. Al-Ansari J, Honkala E, Honkala S. Oral health knowledge and behaviour among male health sciences college students in Kuwait. *BMC Oral Health* 2003;3:2.
9. Taani DQ. Periodontal awareness and knowledge and pattern of dental attendance among adults in Jordan. *Int Dent J* 2002;52:94-8.
10. Taani DQ. Dental attendance and anxiety among public and private school children in Jordan. *Int Dent J* 2002;52:25-9.
11. Taani DQ. Trends in oral hygiene, gingival status and dental caries experience in 13-14-year-old Jordanian school children between 1993 and 1999. *Int Dent J* 2001;51: 277-81.
12. Taani DQ. The periodontal status of Jordanian adolescents measured by CPITN. *Int Dent J* 1995;45:382-5.
13. Taani DQ. Caries prevalence and periodontal treatment needs in public and private school pupils in Jordan. *Int Dent J* 1997;47:100-4.
14. Taani DQ. Relationship of socioeconomic background to oral hygiene, gingival status, and dental caries in children. *Quintessence Int* 2002;33:1-4.
15. Peterson PE, Aleksejuniene J, Christensen LB, Eriksen HM, Kalo I. Oral health behavior and attitudes of adults in Lithuania. *Acta Odontol Scand* 2000;58:243-8.
16. Stenberg P, Hakansson J, Akerman S. Attitudes to dental health and care among 20 to 25-year-old Swedes: results from a questionnaire. *Acta Odontol Scand* 2000;58:102-6.
17. Kalsbee H, Truin G-J, Poorterman JHG, et al. Trend in oral status and oral hygiene habits in Dutch adults between 1983 and 1995. *Community Dent Oral Epidemiol* 2000;28:112-8.
18. Kunzel W. Trends in coronal caries prevalence in Eastern Europe: Poland, Hungary, Czechoslovakia, Slovak R, Romania, Bulgaria and the former States of the USSR. *Int Dent J* 1996;46(Suppl):204-10.
19. Bjarnason S. High caries levels: problems still to be tackled. *Acta Odontol Scand* 1998;56:176-8.
20. Szoke J, Petersen PE. Evidence for dental caries decline among children in an Eastern European country (Hungary). *Community Dent Oral Epidemiol* 2000;28:155-60.
21. Rajab LD, Petersen PE, Bakeen G, et al. Oral health behaviour of school children and parents in Jordan. *Int J Pediatr Dent* 2002;12:168-76.
22. Taani DQ, Alhajja ES. Self-assessed bleeding as an indicator of gingival health among 12-14-year-old children. *J Oral Rehabil* 2003;30:78-81.
23. Jalevik B, Sjostrom O, Noren JG. Evaluation of three years of dental care of adolescents in the Public Dental Service in west Sweden. *Swed Dent J* 1999;23:141-8.

APPENDIX

The items of the questionnaire completed by the study sample:

Q1. How often do you brush your teeth?

- | | |
|----------------------------|-----------------------------|
| 1. Less than once per day. | 2. Once per day. |
| 3. Twice per day. | 4. More than twice per day. |

Q2. What do you use for cleaning your teeth?

- | | |
|--------------------------|------------------|
| 1. Brush + toothpaste. | 2. Dental floss. |
| 3. Mouthwash. | 4. Toothpicks. |
| 5. Others (specify)..... | |

Q3. When do you brush your teeth?

- | | |
|-------------------------|-------------------------------|
| 1. Morning. | 2. Noon (after lunch). |
| 3. Before going to bed. | 4. Other times (specify)..... |

Q4. For how long do you brush your teeth?

- | | |
|--------------------------|---------------------------|
| 1. Less than one minute. | 2. One minute. |
| 3. Two minutes. | 4. More than two minutes. |

Q5. My parents...

- | | |
|--------------------------------------|--------------------------------|
| 1. Watch me while brushing my teeth. | 2. Do not watch but advise me. |
| 3. Never cared. | 4. Only my mother watches me. |

Q6. What does gum bleeding mean?

- | | |
|-------------------|-------------------|
| 1. Healthy gum. | 2. Inflamed gum. |
| 3. Gum recession. | 4. I do not know. |

Q7. How do you protect yourself from gum bleeding?

- | | |
|--|---------------------|
| 1. Using toothbrush, paste & dental floss. | 2. Using soft food. |
| 3. Using vitamin C. | 4. I do not know. |

Q8. What does plaque mean?

- | | |
|------------------------------|---------------------------|
| 1. Soft debris on the teeth. | 2. Staining of the teeth. |
| 3. Hard debris on the teeth. | 4. I do not know. |

Q9. What does dental plaque lead to?

- | | |
|-----------------------------|---------------------------|
| 1. Inflammation of the gum. | 2. Staining of the teeth. |
| 3. Dental caries. | 4. I do not know. |

Q10. How often do you visit your dentist?

- | | |
|---------------------------------|-------------------------------|
| 1. Regularly every 6-12 months. | 2. Occasionally. |
| 3. When I have dental pain. | 4. I never visited a dentist. |

Q11. Last time I visited a dentist was:

- | | |
|-----------------------|----------------------|
| 1. Six months ago. | 2. Last 6-12 months. |
| 3. Last 1-2 years. | 4. Last 2-5 years. |
| 5. More than 5 years. | |

Q12. The treatment(s) I sought during my last visit to the dentist was (were):

- | | |
|---------------------------|--------------------------------|
| 1. Check my teeth. | 2. Take x-rays. |
| 3. Have scaling. | 4. Have fluoride on my teeth. |
| 5. Treat my gums. | 6. Have filling. |
| 7. Have crown/bridge. | 8. Have orthodontic treatment. |
| 9. Have tooth extraction. | 10. Others (specify)..... |

- Q13. The reason for my last visit to the dentist was:
1. Dental pain.
 2. Family & friend advice.
 3. A dentist advised me.
 4. Another reason (specify).....
- Q14. When I first visited the dentist:
1. I was scared and reluctant.
 2. Slightly afraid.
 3. Very slightly afraid.
 4. I was never afraid.
- Q15. When I first visited the dentist:
1. There was no dental pain.
 2. There was severe dental pain.
 3. There was little dental pain.
 4. I was feeling not comfortable.
 5. I felt nothing.
 6. There was not enough time for treatment.
 7. There was enough time for treatment.
- Q16. If you do not visit the dentist or are afraid of him or her, the reason(s) is (are):
1. I am afraid of the handpiece.
 2. I am afraid of the dental needle.
 3. Treatment cost is high.
 4. There are no dental clinics nearby.
 5. There is no time.
 6. There is no pain to go to dentist.
 7. I am afraid sitting in the waiting room.
 8. I am afraid even from thinking of tomorrow's appointment.
- Q17: How many are the deciduous teeth?
- Q18. How many are the permanent teeth?
- Q19. How many carious teeth do you have?
- Q20. How many filled teeth do you have?
- Q21. Do you think you can decide the treatment you need? Yes/No
- Q22. Is it necessary for patients to decide their dental treatment needs? Yes/No
- Q23. Carious teeth can affect teeth appearance. Yes/No
- Q24. Sweets affect the teeth adversely. Yes/No
- Q25. Fizzy drinks affect the teeth adversely. Yes/No
- Q26. Brushing teeth prevents dental decay. Yes/No
- Q27. Using fluoride strengthens the teeth. Yes/No
- Q28. Regular visits to the dentist are necessary. Yes/No
- Q29. Dentists always explain the dental problem and solve it. Yes/No
- Q30. The dentist examines and takes care of his or her patients. Yes/No
- Q31. What the dentist cares about is treatment not prevention. Yes/No
- Q32. General body health has a relationship to oral and dental diseases. Yes/No
- Q33. You care about your teeth as much as any part of your body. Yes/No