Perception of Saudi parents towards the problems related to primary dentition of their children residing in Riyadh city

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ABSTRACT

Background: The parental awareness and perceptions help in early recognition of problems in deciduous dentition, which will help us plan better preventive measures. Hence, the present study was conducted to evaluate the perceptions of Saudi parents residing in Riyadh towards the problems related to primary dentition of their children. Materials and Methods: A cross-sectional study was conducted on the patients attending private dental institution in Riyadh city. Information about demographic details, questions related to maintenance of primary teeth, and future implications of poor primary dentition health were collected. Descriptive statistics and Chi-square test were used for the analysis. The level of significance was set at P < 0.05. Results: A total of 1773 male and females filled up the survey form, which comprised of 28% males and 72% females, and maximum parents (68%) were university graduates. Overall better responses were in females and parents having more children. Conclusion: Over all mothers had a higher level of knowledge and positive attitude towards their children’s oral health as compared to fathers. Developing and strengthening optimistic outlook among parents towards oral health especially primary dentition is utmost important.

Keywords: Caregivers, deciduous teeth, perception

Introduction

In developing and maintaining the fundamental life functions of the child-like phonetics and eating, an essential role is played by primary dentition. Regardless of its well-established importance, in majority of the population, the care of deciduous teeth is not considered crucial owing to the belief that primary teeth will eventually shed off with no harm to permanent dentition.

Recently, there has been an increase in the incidence of dental caries in primary dentition termed as early childhood caries. This might result in pain, decline in food intake, and consequently extend to malnutrition.[1-3]

A child might also suffer from oral problems like pernicious habits of thumb sucking, tongue thrusting, and bruxism. These destructive habits if not stopped after certain time lead to malocclusion and might necessitate orthodontic management along with employment of habit breaking appliances.[2]

Another problem related to primary dentition is majority of the parents are unaware of the correct protocol that should
be followed if their children face dental trauma. The trauma to primary dentition might lead to disturbances with eruption, enamel hypoplasia, white spots, intrusion, and extrusion in permanent teeth.[3,4]

Being dependent on the awareness, comprehension and the mind-set of the parents, the oral health of children might be compromised.[5,6] There are evidences in the literature that least interest is given to dental problems and furthermore, the primary dentition is additionally ignored.[7] In growth and development of the child, parents especially mother plays a critical part since they are the chief decision makers of to their children’s health. Thus, their awareness about dental health is important so that they can be guided and instructed to prevent the development of various oral problems.[8] A major disparity between medical opposed to oral health provision is that the caregivers usually offer access to medical services by taking the child to a professional, however, for oral health, in addition to seeking professional aid; there is also partaking by parents during tooth brushing and ensuring that there is no excess intake of sugary foods.[9]

However, in this workaholic era of the 21st century, most of the parents do not get sufficient time to dedicate to their family care.[10] Several studies have taken place in order to measure the level of knowledge and attitude of parents towards the problems related to their children’s dentition and not much research is done in this area in Saudi Arabia.[11,12] The parental awareness and perceptions help in early recognition of problems in deciduous dentition which will help us plan better preventive and interceptive orthodontics or other dental treatment modalities so as to reduce or avoid adult oral problems, the time required for treatment, and thus decrease the economic burden which parents face for such treatments and improves the overall quality of life of the child.[7]

Literature reveals that the attitude towards oral habits varies among different ethnic groups since they differ in culture, beliefs and awareness, as well as socioeconomic development and caring level and not much research is conducted in Saudi.[13] Hence, the present study was conducted to evaluate the perceptions of Saudi parents residing in Riyadh towards the problems related to primary dentition of their children.

**Materials and Methods**

A cross-sectional study was conducted on the patients attending private dental institution in Riyadh city. A pilot study was conducted on 50 patients for the determination of sample size. These patients did not participate in the main study. The sample size was calculated with the help of Epi Info software, and it was found to be 1500. The nonresponse rate was assumed to be 15%, and the final sample size was adjusted by the formula: final sample size = effective sample size/(1-nonresponse rate anticipated), which gave the figure of 1764, keeping in mind the outliers the survey was conducted on 1773 participants.

The questionnaire was first prepared in the English and then translated to local language and again back translated to English for checking language reliability by a person expert in both languages. Analysis revealed that reliability and content validity of the questionnaire was acceptable (Cohen’s kappa statistics = 0.82 and Aiken’s V index = 0.83, respectively).

Permission for conducting the study was obtained from the Institutional ethical committee. The study proposal was submitted to the research Centre of Riyadh Elm University ethical approval was obtained from Institutional Review Board [RC/IRB/2019/262] on 02-10-2019. The study procedure was explained to each participant and written informed consent was acquired. All the patients who have at present or had in past 2 years child/children of ≤5 years were included.

Parents were provided with a self-administered, close-ended questionnaire consisting of information about their demographic details, questions related to primary dentition, maintenance of oral health, oral habits of the child, parental experience of trauma management, and future implications of poor primary dentition health.

The data were entered into an MS Excel sheet. Descriptive statistics and Chi-square test were used for the analysis. The level of significance was set at P < 0.05. SPSS version 19 (IBM, Chicago, IL, USA) software was used to perform the statistical analysis.

**Results**

A total of 1773 male and females filled up the survey form, which comprised of 28% (n = 495) males and 72% (n = 1278) females, and maximum parents (n = 1199; 68%) were university

| Table 1: Demographic distribution of study participants |
|-----------------------------------------------|
| Demographic variables | Number | Percentage |
| Gender            |        |            |
| Male              | 1277   | 72         |
| Female            | 496    | 28         |
| Education level  |        |            |
| ≤Primary          | 89     | 5          |
| High school       | 479    | 27         |
| University        | 1206   | 68         |
| Age group (in years) |  |            |
| >18               | 53     | 3          |
| 18-30             | 408    | 23         |
| 31-45             | 833    | 47         |
| >45               | 496    | 28         |
| Number of children |       |            |
| 1-3               | 674    | 38         |
| 4-5               | 550    | 31         |
| >6                | 230    | 13         |
| None              | 337    | 19         |
| Income            |        |            |
| Low               | 780    | 44         |
| Moderate          | 993    | 56         |
| High              | 0      | 0          |
graduates and from age group of 18–30 years (n = 827; 47%) with 38% (n = 665) having 1–3 children and 56% (n = 977) have moderate income [Table 1].

The distribution of responses with respect to gender showed slightly better responses in females than males related to health of primary dentition, e.g., 24 females and 22 males had visited to dentist for fissure sealant. After the early loss of primary tooth, it should be replaced by space maintainer was rightly answered by 24 females and 18 males. Similarly, when parents were compared in terms of number of children, better responses were found in those who had more children compared to others [Table 2].

### Table 2: (a) Comparison of the study participants based on gender and number of children

| Item                                                                 | M    | F    | P     | 1-3  | 3-5  | >6  | P   |
|----------------------------------------------------------------------|------|------|-------|------|------|-----|-----|
| When should you start maintaining the oral hygiene for your child?   | Right after birth | 7   | 1   | 0.184 | 8   | 10  | 7   | 0.001* |
|                                                                      | When first tooth erupts | 56  | 52  | 60   | 47  | 42  |     |      |
|                                                                      | After first dental caries | 37  | 47  | 32   | 43  | 51  |     |      |
| How many teeth there are in primary dentition                        | 10   | 41   | 27   | 0.001* | 31  | 24  | 26  | 0.001* |
|                                                                      | 16   | 28   | 32   | 32   | 34  | 28  |     |      |
|                                                                      | 20   | 25   | 30   | 30   | 28  | 36  |     |      |
|                                                                      | 32   | 62   | 11   | 7    | 9   | 8   |     |      |
| Maintenance of primary dentition is less important than permanent dentition | Definitely Yes | 29  | 20   | 0.001* | 20  | 24  | 28  | 0.030* |
|                                                                      | Maybe | 38  | 35   | 36   | 35  | 32  |     |      |
|                                                                      | Definitely No | 33  | 45   | 44   | 41  | 40  |     |      |
| Frequency of tooth brushing by your child?                           | Does not brush | 14  | 11   | 0.001* | 12  | 9   | 12  | 0.001* |
|                                                                      | Once a day | 42  | 51   | 51   | 53  | 49  |     |      |
|                                                                      | Twice a day | 27  | 30   | 32   | 28  | 28  |     |      |
|                                                                      | Do not know | 17  | 8    | 5    | 10  | 11  |     |      |
| Do you resist when your child asks for sweets and snacks?            | Yes   | 9    | 11   | 0.001* | 12  | 11  | 6   | 0.003* |
|                                                                      | No    | 29   | 20   | 19   | 21  | 25  |     |      |
|                                                                      | Sometimes | 62  | 69   | 69   | 68  | 69  |     |      |
| Do you need more information about maintaining primary dentition?    | Yes   | 90   | 84   | 0.001* | 86  | 85  | 82  | 0.177 |
| If your child lost a primary tooth early what of the following is important to do? | Brushing of the space | 9    | 10   | 0.073 | 9   | 9   | 11  | 0.476 |
|                                                                      | Space maintainer device | 18  | 24   | 21   | 24  | 21  |     |      |
|                                                                      | Do nothing | 73  | 66   | 70   | 67  | 68  |     |      |
| If your child has a trauma on his teeth what you do?                 | Wash the teeth with clean water | 16  | 17   | 0.009* | 19  | 16  | 12  | 0.062 |
|                                                                      | Wash it with salted water | 20  | 27   | 22   | 27  | 27  |     |      |
|                                                                      | Go to dentist | 64  | 56   | 59   | 57  | 61  |     |      |
| What do you usually do when a child’s teeth start to be lose?        | Extract at home | 49  | 56   | 0.001* | 48  | 61  | 64  | 0.001* |
|                                                                      | Visit a dentist | 29  | 20   | 25   | 17  | 17  |     |      |
|                                                                      | Do nothing | 22  | 24   | 27   | 22  | 19  |     |      |
| Have you ever heard about the fissure sealant?                       | No, I have not heard about it | 66  | 62   | 0.393 | 65  | 60  | 63  | 0.204 |
|                                                                      | Yes, I visited the doctor for it | 22  | 24   | 21   | 28  | 25  |     |      |
|                                                                      | Yes, I did not visit the doctor for it | 12  | 14   | 14   | 12  | 12  |     |      |

### Table 2: (b) Comparison of the study participants based on gender and number of children

| Item                                                                 | M    | F    | P     | 1-3  | 3-5  | >6  | P   |
|----------------------------------------------------------------------|------|------|-------|------|------|-----|-----|
| Have you received instructions from dentist about maintaining health of primary dentition of your children? | Yes   | 43   | 51   | 0.002* | 48  | 54  | 53  | 0.001* |
|                                                                      | No    | 38   | 30   | 23   | 28  | 28  |     |      |
|                                                                      | Do not know | 19  | 19   | 29   | 18  | 19  |     |      |
| Has a family member/friend advised you to maintain health of primary dentition? | Yes   | 57   | 57   | 0.299 | 58  | 60  | 60  | 0.001* |
|                                                                      | No    | 30   | 28   | 30   | 27  | 25  |     |      |
|                                                                      | Do not know | 13  | 15   | 12   | 13  | 15  |     |      |
| Poor health of primary dentition may affect permanent dentition in future? | Yes   | 65   | 74   | 0.002* | 71  | 75  | 74  | 0.002* |
|                                                                      | No    | 7    | 6    | 6    | 5   | 9   |     |      |
|                                                                      | Do not know | 28  | 20   | 23   | 20  | 17  |     |      |
| Spaces in teeth due to primary teeth shedding are important factor in determining future dental health. | Yes   | 46   | 54   | 0.003* | 46  | 56  | 62  | 0.001* |
|                                                                      | No    | 8    | 5    | 5    | 5   | 4   |     |      |
|                                                                      | Do not know | 54  | 41   | 49   | 41  | 34  |     |      |
| Abnormal oral habits like (thumb sucking and nail biting, etc.) may affect permanent dentition in future? | Yes   | 72   | 84   | 0.001* | 80  | 83  | 84  | 0.004* |
|                                                                      | No    | 10   | 6    | 7    | 5   | 4   |     |      |
|                                                                      | Do not know | 18  | 10   | 13   | 12  | 12  |     |      |
Table 3: (a) Comparison of the study participants based on education

| Item                                                                 | <Primary | <High school | Graduate | P     |
|----------------------------------------------------------------------|----------|--------------|----------|-------|
| When should you start maintaining the oral hygiene for your child    | Right after birth | 9 | 8 | 8 | 0.001* |
|                                                                      | When first tooth erupts | 38 | 47 | 57 |       |
|                                                                      | After first dental caries | 53 | 45 | 35 |       |
| How many teeth there are in primary dentition                        | 10 | 32 | 33 | 29 | 0.321 |
|                                                                      | 16 | 27 | 27 | 33 |       |
|                                                                      | 20 | 27 | 30 | 29 |       |
|                                                                      | 32 | 14 | 10 | 9  |       |
| Maintenance of primary dentition is less important than permanent    | Definitely Yes | 34 | 28 | 20 | 0.001* |
| dentition                                                            | Maybe    | 35 | 38 | 35 |       |
|                                                                      | Definitely No | 31 | 34 | 45 |       |
| Frequency of tooth brushing by your child?                           | Does not brush | 11 | 12 | 11 | 0.955 |
|                                                                      | Once a day | 49 | 49 | 49 |       |
|                                                                      | Twice a day | 31 | 28 | 29 |       |
|                                                                      | Do not know | 9  | 11 | 11 |       |
| Do you resist when your child asks for sweets and snacks?            | Yes | 11 | 10 | 11 | 0.831 |
|                                                                      | No        | 22 | 21 | 23 |       |
|                                                                      | Sometimes | 67 | 69 | 66 |       |
| Do you need more information about maintaining primary dentition?    | Yes | 90 | 88 | 85 | 0.104 |
| If your child lost a primary tooth early what of the following is     | Brushing of the space | 12 | 10 | 9  | 0.51  |
| important to do?                                                     | Space maintainer device | 20 | 20 | 24 |       |
|                                                                      | Do nothing | 68 | 70 | 67 |       |
| If your child has a trauma on his teeth what you do?                 | Wash the teeth with clean water | 17 | 17 | 16 | 0.502 |
|                                                                      | Wash it with salted water | 20 | 28 | 25 |       |
|                                                                      | Go to dentist | 63 | 55 | 59 |       |
| What do you usually do when a child’s teeth start to be lose?        | Extract at home | 63 | 57 | 52 | 0.136 |
|                                                                      | Visit a dentist | 20 | 24 | 23 |       |
|                                                                      | Do nothing | 17 | 19 | 24 |       |
| Have you ever heard about the fissure sealant?                       | No, I have not heard about it | 63 | 63 | 63 | 0.297 |
|                                                                      | Yes, I visited the doctor for it | 30 | 22 | 24 |       |
|                                                                      | Yes, I did not visit the doctor for it | 7  | 15 | 13 |       |

(b): Comparison of the study participants based on education

| Item                                                                 | <Primary | <High school | Graduate | P     |
|----------------------------------------------------------------------|----------|--------------|----------|-------|
| Have you received instructions from dentist about maintaining health | Yes | 53 | 45 | 50 | 0.118 |
| of primary dentition of your children?                               | No       | 23 | 33 | 31 |       |
| Do not know                                                         | 24       | 22 | 19 |       |
| Has a family member/friend advised you to maintain health of         | Yes | 64 | 59 | 56 | 0.404 |
| primary dentition?                                                  | No       | 22 | 26 | 30 |       |
| Do not know                                                         | 14       | 15 | 14 |       |
| Poor health of primary dentition may affect permanent dentition in   | Yes | 64 | 67 | 73 | 0.027*|
| future?                                                             | No       | 8  | 8  | 5  |       |
| Do not know                                                         | 8        | 25 | 22 |       |
| Spaces in teeth due to primary teeth shedding are important factor in | Yes | 54 | 50 | 52 | 0.730 |
| determining future dental health.                                    | No       | 3  | 7  | 5  |       |
| Do not know                                                         | 43       | 43 | 43 |       |
| Abnormal oral habits like (thumb sucking and nail biting, etc.) may  | Yes | 74 | 74 | 83 | 0.001*|
| affect permanent dentition in future?                               | No       | 7  | 10 | 6  |       |
| Do not know                                                         | 19       | 16 | 11 |       |

Table 3 shows that not much difference was found when parents were compared based on education level. For few items, response was better in graduates like importance of health of primary teeth, maximum correct answer was given by graduates (n = 73), followed by high school pass out (n = 67), and least by those were in those who educated till primary (n = 64), and this difference was significant responses were seen in compared to other (P < 0.05)

Discussion

This study aimed to assess the Saudi parents’ knowledge about their children's primary dentition and related problems. Untreated primary teeth can cause various complications such as pain, infections, alterations in growth and development, problems in eating and sleeping, and malnutrition.
The gender comparison showed that overall results were better in females compared to males. This showed a positive knowledge and attitude level of mothers as compared to the fathers. Similar findings were reported by studies conducted by Rajab et al. and Chhabra & Chhabra.[13,14] This could be attributed to the fact that in general the primary caregiver of the child is mother compared to father who plays part more in the financial support.[13]

Furthermore, comparison on the basis of number of children showed that the parents having six or more children showed better knowledge than other parents. Other studies have supported the fact that having more children leads to a better attitude and knowledge towards the health of primary dentition of the children.[16] The possible explanation for this could be the experience from previous child/children might have lead to the better understanding of importance of maintaining of health of primary teeth.

Educational levels have a great deal of effect on the oral health of people themselves as well as their children. Low educational groups have demonstrated a poor quality of oral health among the families.[16] However, we did not find many significant comparisons when compared the survey responses on the basis of educational levels. Such inconsistencies in our results might be due to fact that study was conducted on parents attending dental institution and such parents might be better oriented towards oral health, thus diminishing the actual influence of socioeconomic status.

Although the validity and reliability of the questionnaire was tested, in-built limitations of the questionnaire studies should be based in mind and these results should be considered as preliminary. The homogenous sample of parents reporting to dental institutions only might have resulted in bias in the final outcomes and warrants further researches with more heterogeneous population.

Conclusions

Overall mothers had a higher level of knowledge and positive attitude towards their children's oral health as compared to fathers. Parents are ultimately responsible for their children's health care, including oral health. Promoting and strengthening optimistic outlook among parents towards oral health especially primary dentition is utmost important. There should be development of programs for parents oriented towards child oral health with active parental participation and by integrating even medical professionals in which information about importance of primary teeth and preventive care of these teeth should be conveyed.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.