Original research

Assessment of knowledge and awareness of parafunctional oral habits and their effects on dentofacial structures among parents visiting SEGi Oral Health Centre with children aged 5-13 years

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Abstract:

Background: Oral habits play a significant role in the etiology of malformation in dento-facial structures. Despite the high prevalence of oral habits in children, few studies have been conducted to assess parental knowledge on the effects of parafunctional oral habits on a child's dentofacial structures.

Aim: This study aimed to assess knowledge and awareness of Malaysian parents with children of age ranging from 5-13 years regarding the parafunctional oral habits and their effects on the dentofacial structures.

Methods: A cross-sectional study was conducted in SEGi Oral Health Centre, Selangor, Malaysia from June 2021 to January 2022. About 166 randomly selected parents of children within the age group of 5-13 years, who have visited SEGi Oral Health Centre were included in the study. A self-administered questionnaire was used to obtain the required information which contained questions pertaining to knowledge and awareness about parafunctional habits. Data was analyzed using SPSS Version 22. Descriptive statistics and Chi-square tests were performed. P-value less than 0.05 was considered significant.

Results:

It was found that the general awareness of parafunctional oral habits among most of the parents was moderate (49%). About 58% believed that the oral habits were a part of child's development and 87% believed that oral habits are preventable. Less than half of the parents were aware of the oral effects of parafunctional habits on teeth like spacing, crowding etc. It was found that there was no statistically significant difference between age, education level, income, and occupation of parents on their awareness level (p-value was more than 0.05).

Conclusion:

The evidence from the current study indicates that parents visiting SEGi Oral Health Centre had good knowledge of thumb sucking habits but had poor knowledge of tongue thrusting habits. To prevent malocclusion of a child's dentition and its effects, more emphasis should be put on educating parents on the detrimental effects of parafunctional oral habits in children.

Introduction

A habit is a sign of lack of harmony between an individual and his environment, it is also a repetitive action that is being done automatically.[1,2] Oral habits such as thumb sucking, tongue thrusting, mouth breathing, nail biting, lip chewing, and bruxism play a significant role in the etiology of malformation in dento-facial structures.[2]

Numerous prevalence studies done around the world have shown a high prevalence of oral habits in children. Vishnoi et al.[3] stated that oral habits were detected in 57.73% of the examined population consisting of 7-16 year old school children of Udaipur city, India. According to Joelijanto[4], research that was performed on 92 children of Yayasan Bahtera Bandung with 6-12 years of age, reported that about 50% of children have oral habits.

Despite the high prevalence of oral habits in children, few studies have been conducted to assess parental knowledge on the effects of parafunctional oral habits on a child's dentofacial structures. Based on the study done by Shah K et al.[1] in Ahmedabad city, Gujarat, parents were having average knowledge as well as attitude regarding oral habits in their children.

As such, the detrimental effects of oral habits on dentofacial structures in a child's development should be highlighted to parents as ignorance can result in further complications in their child's dentition. Thus, this study was aimed to assess knowledge and awareness of Malaysian parents with children of age ranging from 5-13 years regarding the parafunctional oral habits and their effects on the dentofacial structures.

Aim and Objectives

1. To assess knowledge and awareness of parafunctional oral habits and their effects on dentofacial structures among parents with children of age ranging from 5-13 years

2. To evaluate the influence of socio-economic factors and level of education of parents on their knowledge and awareness of the effect of parafunctional oral habits on dentofacial structures

Materials and methods

Study design

A cross-sectional study was conducted in SEGi Oral Health Centre, Selangor, Malaysia from June 2021 to January 2022. Sample size of 166 parents of children who have visited SEGi Oral Health Centre within the age group of 5-13 years old was included in the study. Study participants were randomly selected from the SEGi Oral Health Centre patient database from 2019 to 2021.

Ethical clearance was obtained from SEGi University Ethics Committee (Ethical Approval Number: SEGIEC/SR/FOD/03/2021-2022), with written consent taken from the study participants prior to the commencement of the study. Structured questionnaires sent to parents via Google Forms in three languages (English, Malay, and Mandarin) were used to collect data for the study.

Questionnaire design

The questionnaire was first prepared in English and translated to Malay and Mandarin. Content validation and language modifications of the questionnaire were done in June 2021. Following this, a pilot study consisting of 10 participants was then conducted in June 2021 to assess the accuracy of the translated questionnaires. (Cronbach's value: 0.73)

The questionnaire content comprises the following sections:

A. Demographic details

Demographic details such as age (participants as well as their children's ages), gender, education level, socioeconomic and working status were collected.

B. Parents' awareness on parafunctional oral habits

A total of 12 questions were formulated to assess the awareness of parents on various parafunctional oral habits and their effects on dentofacial structures. The scoring criteria given was as follows:

- A score of “1” was given for the correct chosen answer “Yes”.
- A score of “0” was given for the incorrect chosen answer “No” / “Unsure”.

Awareness of parents was then categorised as poor (≤39.0%), moderate (40.0–69.0%), and good (≥70.0%).

C. Parents’ knowledge on parafunctional oral habits

A total of 55 questions accompanied by pictorial explanations were constructed to assess parental knowledge regarding seven parafunctional oral habits such as thumb sucking, nail biting, mouth breathing, tongue thrusting, lip/cheek biting, bruxism, and use of pacifier. Questions about each oral habit were divided into two parts that covered the causes of parafunctional oral habits (1), and the effects of parafunctional oral habits on dentofacial structures (2).

In part (1), five answer options were listed under the causes for each oral habit (four correct causes for each parafunctional oral habit and a single option “none of the above”), with the exception of the habit use of pacifier, where the cause was replaced by proper age to stop a child's use of a pacifier.

In part (2), four questions were listed under the effects of each oral habit, with the exception of the habits of tongue thrusting and using a pacifier, where only two questions were listed. Each question included a picture showing the effect of the given oral habit. A five-point Likert scale was used to evaluate the likelihood of effects described for each question. The scoring given was as follows:

- 1-2 (least likely)
- 3 (neither least likely nor most likely)
- 4-5 (most likely)

Data analysis

Statistical analysis was done using SPSS Version 24. Descriptive statistics were performed on all the variables in the study. The association between the socio-economic status, education level, and the awareness of parents regarding parafunctional oral habits was correlated using Pearson correlation and Chi-square test, p-value less than 0.05 was considered significant.

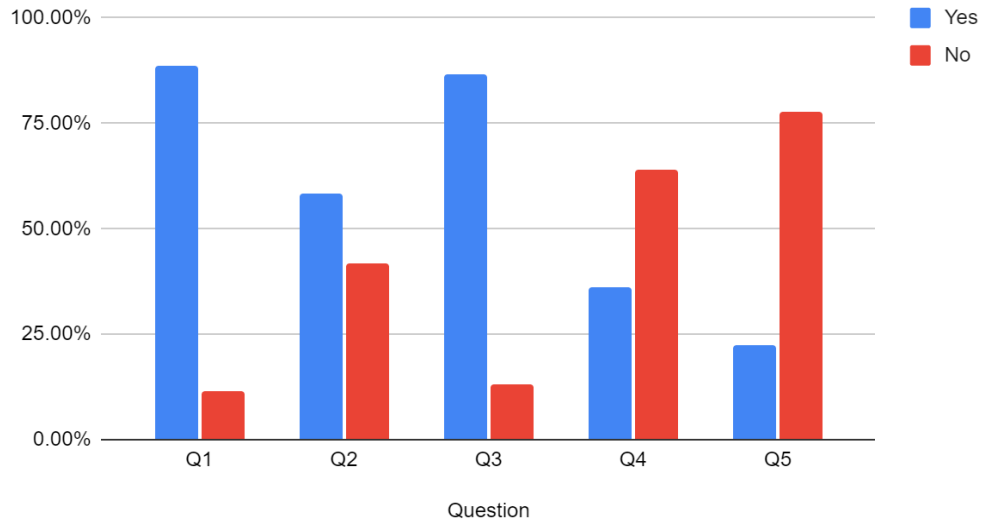
Results

A total of 166 parents visiting SEGi Oral Health Centre with children aged 5-13 years have participated in this study. The majority of parents were within the 41-50 years age group (51%). Parents were mostly educated, with 33% at postgraduate level and 33% at undergraduate level. Working parents (74%) formed the bulk of the study sample, and parent incomes were mainly between RM4850- RM10959 (40%).

Awareness of parafunctional oral habits

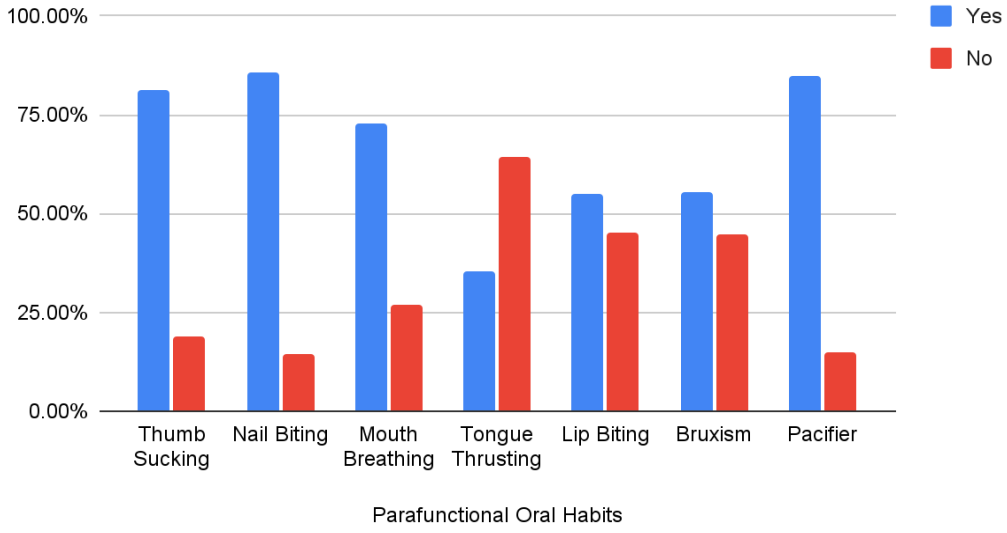
It was found that the general awareness of parafunctional oral habits among most of the parents (49%) was moderate. As seen in Figure 1, 89% believed that oral health affects general health (Q1), 58% believed that the listed oral habits (i.e. thumb sucking, nail biting, tongue thrusting, lip biting, bruxism, use of pacifier) were a part of normal child development (Q2). 87% believed that oral habits listed (i.e. thumb sucking, nail biting, tongue thrusting, lip biting, bruxism, use of pacifier) are preventable (Q3). 64% had not visited a dentist to check if their child has any oral habits or related signs and features (Q4). 78% were not aware of the term myofunctional therapy (Q5).

Figure 1: Awareness on Parafunctional Oral Habits



The breakdown for parental awareness of each individual parafunctional habit has been shown in Figure 2.

Figure 2: Awareness of Individual Parafunctional Oral Habit



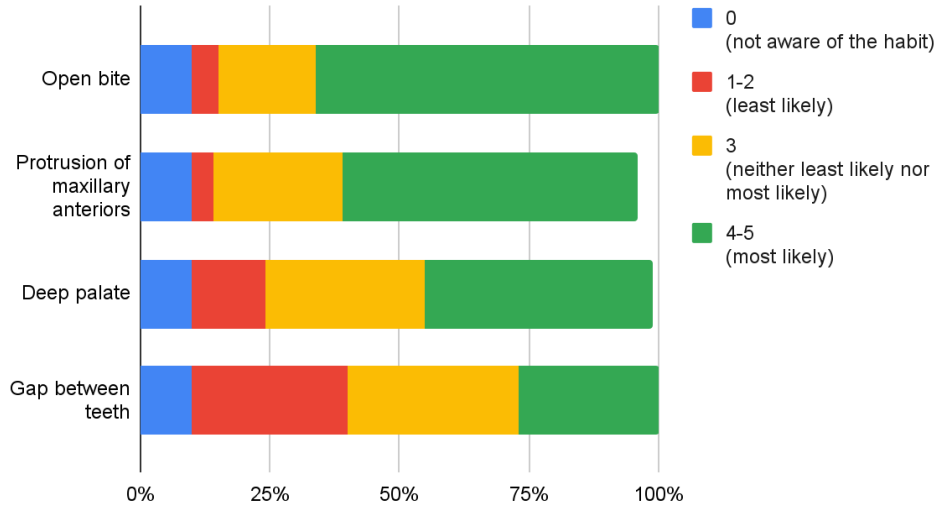
Knowledge of each parafunctional oral habit and their effects

Parents were further assessed on their knowledge of each parafunctional oral habit through questions regarding the probable causes and effects on dentofacial structures.

A. Thumb sucking

The majority of the parents (38%) selected "parents' ignorance" as the most probable cause for thumb sucking.33% of parents perceived that gaps between teeth were neither least likely nor most likely due to thumb sucking.

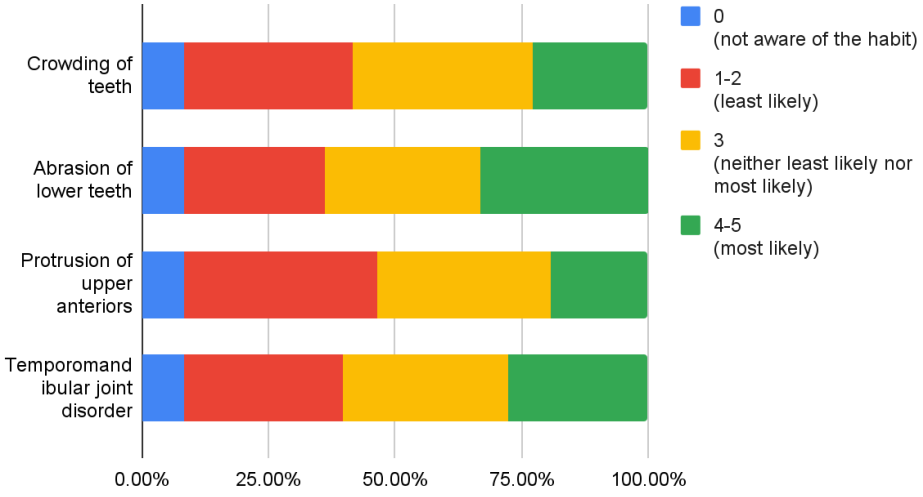
Figure 3: Effects of Thumb Sucking



B. Nail biting

Most parents (52%) believed that boredom was the cause of nail biting. 36% of parents perceived that crowding of teeth was neither least likely nor most likely due to nail biting habits.

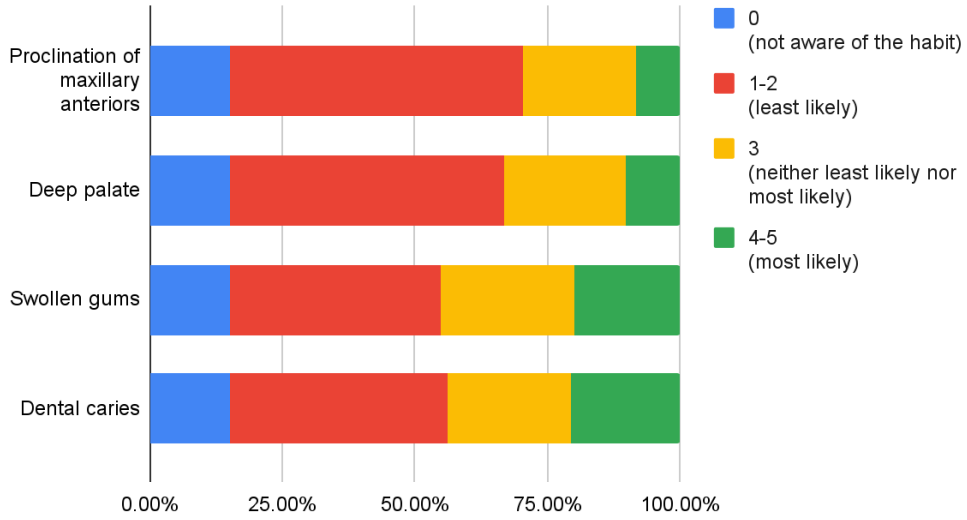
Figure 4: Effects of nail biting



C. Mouth breathing

As seen in Figure 5, 55% of parents believed that mouth breathing least likely led to proclination of maxillary anteriors. 52% of parents believed that mouth breathing least likely led to deep palate. 40% of parents believed that mouth breathing least likely led to swollen gum. 41% of parents believed that mouth breathing least likely led to an increased incidence of dental caries.

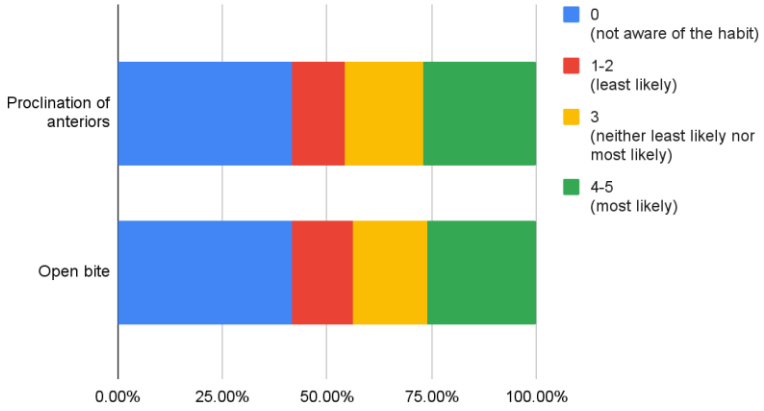
Figure 5: Effects of mouth breathing



D. Tongue thrusting

As seen in Figure 6, 27% of parents believed that tongue thrusting most likely led to the proclination of upper or lower anteriors. 26% of parents believed that it most likely led to open bite. The majority of parents (42%) scored '0' as they did not answer the questions regarding the effect of tongue thrusting.

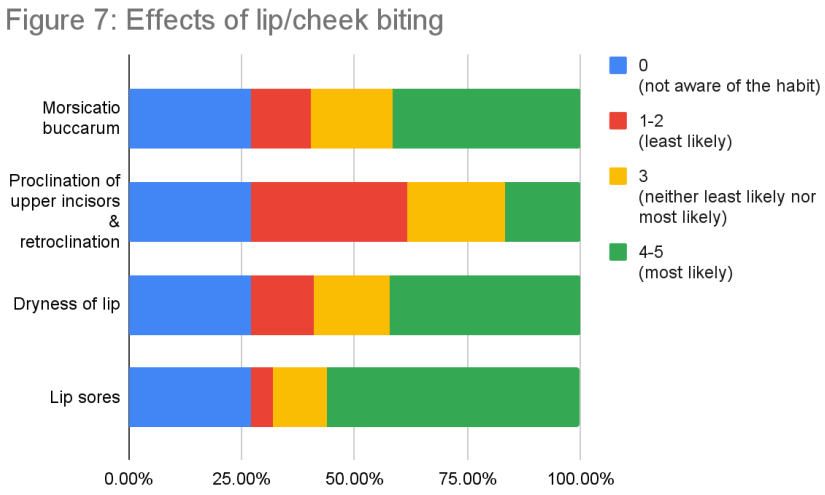
Figure 6: Effects of tongue thrusting



E. Lip/Cheek biting

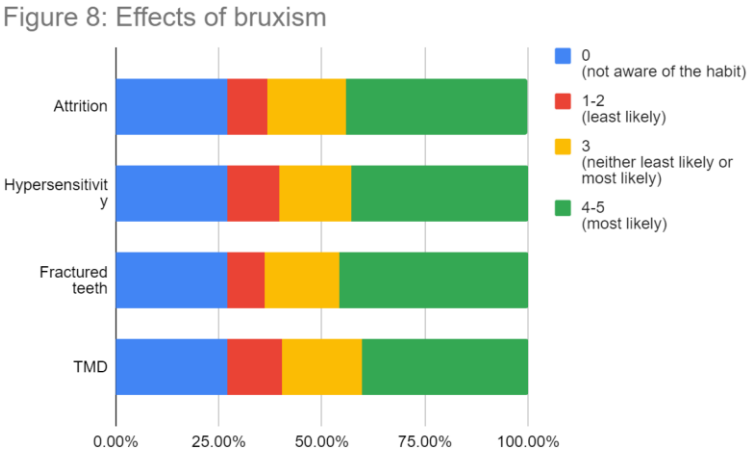
As seen in Figure 7, 42% of parents believed that lip/cheek biting most likely led to morsicatio buccarum. 34% of parents believed that lip/cheek biting least likely led to proclination of upper incisors and retroclination of lower incisors. 42% of parents believed that lip/cheek biting most

likely led to dryness of lip while 56% of parents believed that lip/cheek biting most likely led to lip sores.



F. Bruxism

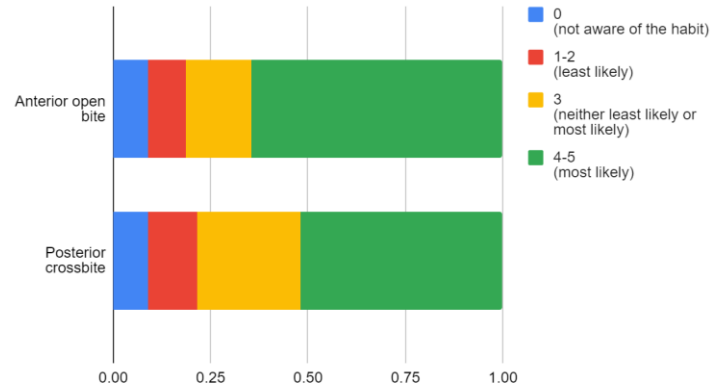
Approximately half of the parents believed that bruxism most likely causes attrition of teeth (44%), hypersensitivity of teeth (43%), fractured/chipped off teeth (46%), and temporomandibular joint disorder (40%) Figure 8.



G. Prolonged use of pacifier

Most parents appeared to be knowledgeable on oral habit use of a pacifier, with 65% correctly identifying the appropriate age to stop pacifier use as 8-12 months. The majority believed that prolonged use of a pacifier most likely causes the effects of anterior open bite and posterior crossbite (64% and 52%, respectively).

Figure 9: Effects of prolonged use of pacifier



Discussion

In the present study, it was found that there was no statistically significant difference between age, education level, income, and occupation of parents on their awareness level (p-value was >0.05). The results contradict the claims by Calıskan S et al.,[7] in which parents with lower education (1% primary school graduates) were less able to define bruxism correctly as compared to those with higher education (15.7% high school graduates, 13.8% university graduates).

The current study concluded that the awareness of parafunctional oral habits and their deleterious effects on dentofacial structures among parents (49%) visiting SEGi Oral Health Centre with children aged 6-13 years was moderate. This finding was similar to the study conducted by Shah K et al.[1] in Gujarat which assessed the awareness and attitude of parents regarding oral habits in children and concluded an average level of awareness regarding parafunctional oral habits exists among parents (67%) with children within the age group of 10.

Besides, the findings in our study suggest that the awareness of parafunctional oral habits like thumb sucking, nail biting, mouth breathing, and use of pacifiers was better than tongue thrusting, and lip/cheek biting habits. This coincides with the observations by Vishnu Prasanna SG et. al.[8] who evaluated the knowledge and awareness of habit and habit-breaking appliances among parents and concluded that 92% of parents were aware of thumb sucking habit, 75% were aware of mouth breathing habit and 66% were not aware of tongue thrusting habit.

Data herein this study revealed that parents were mostly aware of thumb sucking habit and its deleterious effects. Open bite associated with thumb sucking was perceived to be the most

likely effect by most parents (66%). A literature review by Ahmed ZN et al.[9] suggested open bite to be a prominent effect commonly due to thumb sucking. In the present study, 33% of parents were unsure about the gaps between teeth concerning thumb sucking. Although a study by Hasan H-S et al.[10] reported that thumb sucking was the main cause of midline diastema, it can be presumed that parents in this study did not agree as diastema could be due to other etiologies such as muscular imbalances, physical impediments, etc. as suggested by Huang WJ et al.[11]

The parental awareness of nail biting habits (86%) was highest among the reported habits. However, they were not very knowledgeable on the deleterious effects of nail biting as it seems like it is a simple habit that can be stopped easily.[12]As for lip/cheek biting habits, lip sores were believed to be the most likely effect by more than half of the parents (56%). A plausible explanation could be that parents were more likely to be aware of oral ulcers because traumatic ulcers are the commonest ulcers in the oral cavity.[13]

In addition, another habit that reported a high awareness level among parents (73%) was mouth breathing. Despite high awareness, parents had relatively lesser knowledge of the effects associated with mouth breathing (ie. proclination of maxillary anteriors, deep palate, swollen gums, and increased incidence of dental caries). On the other hand, only 35% of parents in our study were aware of tongue thrusting but they were relatively knowledgeable about its adverse effects. Actions should be taken to raise the awareness and knowledge of parents on the complications of mouth breathing and tongue thrusting habit due to their significance in dental malocclusion.[14,15]

Based on the study by Serra-Negra JM et al.[16] who concluded 35.3% sleep bruxism prevalence among Brazilian children, the high prevalence of bruxism may be suggestive of the present results wherein the parents have relatively better awareness and knowledge of bruxism habit. As seen in our study, approximately half of parents (more than 40%) believed bruxism leads to attrition, tooth hypersensitivity, fractured/chipped off teeth, and temporomandibular joint disorder.[17,18,19]

A study by Shahraki N et al.[17] suggested that the effects of prolonged use of the pacifier include anterior open bite, shallow palate, increased width of the lower arch, and posterior crossbite. In our present study, parents showed good awareness and knowledge of the use of pacifiers as the majority (>50%) believed that prolonged use of pacifiers leads to deleterious effects as mentioned.

Limitations

This study was limited by conducting in a single institution. Further research with larger sample size is recommended to provide considerable information regarding the parental awareness and knowledge of parafunctional oral habits and their deleterious effects on dentofacial structures. Limitations of the study also include a possible margin of error and recall bias.

Conclusion

This study concludes that parents have moderate awareness regarding seven parafunctional oral habits (thumb sucking, nail biting, mouth breathing, tongue thrusting, lip/cheek biting, bruxism, use of pacifier) while parental knowledge of the deleterious effects of these habits on dentofacial structures varied from good to poor. The evidence from the current study indicates that parents visiting SEGi Oral Health Centre had good knowledge of thumb sucking habits but had poor knowledge of tongue thrusting habits. It was found that there was no statistically significant difference between age, education level, income, and occupation of parents on their awareness level (p-value was more than 0.05). Parafunctional oral habits have a significant effect on the development of children's dentofacial structures. To prevent malocclusion of a child’s dentition and its effects, more emphasis should be put on educating parents on the detrimental effects of parafunctional oral habits in children.

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