

Influence of Mother's Working Status on Occurrence of Bruxism in Children

Research Article

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Abstract

Introduction: Bruxism is the habitual, grinding involuntarily or clenching of the teeth that affect both children and adults. Bruxism activity is of major concern for the dentists as it leads to tooth wear and damage, restoration fractures, temporal headache and other temporomandibular disorders.

Aim: The aim of the study is to determine the mothers's work status on bruxism in their children.

Methodology: A descriptive cross-sectional survey was carried out over a period of 3 months among 4-6 years old children from different schools in Chennai. The survey was carried out in their respective school premises. The estimated sample size was 250. Data was collected using self-administered, pretested, validated, close ended, structured questionnaires. This survey consisted of 17 questions regarding women's work status and bruxism in children. Data was analyzed using descriptive statistics.

Results: The mean age of the mothers/guardians was 36.6 years. The mean age of children was 4.6 years. Clenching of teeth for children was reported by 22% of the mothers. Out of 250 mothers, 12%, 8% and 10% reported child complaining discomfort in the jaw, aching temples upon awakening and difficulty in opening the mouth after waking up respectively.

Conclusion: This survey planned to gather knowledge of mother's work status on bruxism in children and from the survey it was proved that mother's work status plays a major role in children having bruxism.

Keywords: Clenching; Children; Bruxism; Mother's Work.

Introduction

Bruxism has been defined by the American Academy of Sleep Medicine as the "repetitive jaw muscle activity characterised by the clenching or grinding of teeth and/or bracing or thrusting of the mandible. Bruxism can occur either during wakefulness or during sleep [1]. Bruxism during the daytime is commonly a semi-voluntary 'clenching' activity and is also called as 'Awake Bruxism' (AB) or Diurnal Bruxism (DB). Bruxism during sleep either during daytime or during night is termed as 'Sleep Bruxism' (SB) [2]. The diagnostic criteria for sleep and awake bruxism can be graded

into 'possible', 'probable' and 'definite' [3].

Bruxism activity is a major concern for dentists which will lead to tooth wear and damage, restoration fractures, temporal headache and temporomandibular disorders. Some extra- and intra-oral signs associated with bruxism are changes in the facial symmetry, lip incompetence, pain upon palpation of the masseter and temporal muscle regions, headaches, temporomandibular disorders (TMD), mouth breathing, buccal mucosa ridging, tongue indentation as well as presence of anterior cross-bite, posterior cross-bite and dental wear [4-7].

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The prevalence of Bruxism in children ranges from 3.5%- 40.6%, and it has no gender difference [8-12]. Awake bruxism occurs predominantly among females while no gender difference is seen for sleep bruxism [13]. Regarding the gender, clenching seems to be 22% more frequent in females, even though this tendency has not been verified when grinding the teeth is considered [14].

Bruxism is said to have multiple causes which includes psychological, Central and peripheral factors. SB and grinding is associated with peripheral factors such as tooth interference in dental occlusion, psychosocial influences such as stress or anxiety and central or pathophysiological causes which involves brain neurotransmitters or basal ganglia [15].

A mother is particularly important as she is with her children for a much greater time than any other person and her instructions reflect a very strong influence on attitudes, abilities and behaviour of children. Most of those children who are successful and well-adjusted come from homes where parental attitudes are favourable and a wholesome relationship existed between children and parents. Hence it is important to understand the relationship between children outcomes and maternal characteristics [16, 17] Of the 11.7 million urban working women in 2011-2012 in India, almost 43% were in regular wage and are in the salaried positions (up from 28.5%) in 1993-1994 [18]. Young women are moving into non-traditional professional jobs, for example in communications [19].

Therefore, the aim of this study was to determine the influence of mother's work status on the occurrence of bruxism among 4-6-year-old children in Chennai.

Materials And Methods

Subjects and Methods

A descriptive cross-sectional survey was carried out over a period of 3 months from November 2018 to January 2019 to determine the influence of mother's work status on the occurrence of bruxism among their 4-6-year-old children using a pre-validated, pre-tested questionnaire. The reporting of the study is in accordance to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Ethics Statement

The study protocol was reviewed by the Ethical Committee of institutional review board, and ethical clearance was granted. The necessary permissions were also obtained from the authorities of the concerned schools.

Pilot Study

A pilot study was conducted, to check for the face and content validity of the developed questionnaire as well as to test its reliability and to derive the sample size. The questions were framed after thorough review of the literature and with the help of four experts the questions were reviewed for content validity. Cronbach's coefficient was found to be 0.78, which showed a good internal reliability of the questionnaire. The external reliability was established by test - retest method, among forty dental interns selected

who were not included in the main study.

Sample size derivation

The sample size was determined by using single proportion formula ($n = [Z \alpha / 2]^2 p [1-p] / d^2$) at 95% confidence interval, where, $Z \alpha / 2 = 1.96$, $p = 20\%$ prevalence of knowledge of the mother about bruxism from the pilot survey and $d = 5\%$ of marginal error was taken. By substituting the values in the formula, minimum sample size obtained was 245 which was rounded off as 250 study participants.

Sampling Procedure

A total of 250 mothers of 4-6 years old children who gave written informed consent were selected by convenience sampling from the five schools of nearby area. The mothers present on the day of the parent's teacher meeting were included in the study.

Data Collection

A self-administered, close ended, structured questionnaire having three sections: the first section contained the demographic information about the children. The second section included about parental reported bruxism in children and the third section was questions related to the mother's work status.

Statistical Analysis

Statistical analysis was performed using IBM Statistical Package for Social Sciences (Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.). The descriptive summary statistics included frequency and percentages.

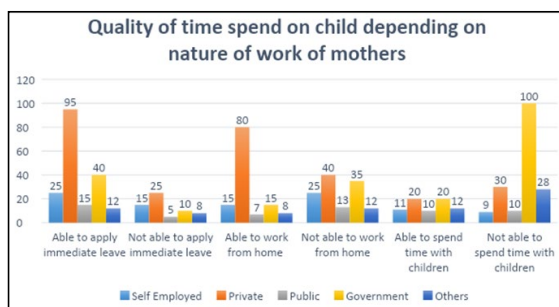
Results

A total of 250 questionnaires that were completely filled were analyzed corresponding to a response rate of 100%. The mothers were in the age range of 23-37 years (mean of 30 years). The age of the children ranged from 4 to 6 years with a mean age of 6.5 years. Table 1 represents frequency and proportion of parental reported bruxism in their children. All the 250 mothers surveyed were working women and out of them, 40 were self-employed, 120 worked in the private sector, 20 worked in the public sector, 50 worked for the government and 20 worked in other sectors. When asked about their nature of work, 110 responded that they work in the IT sector, 30 work in healthcare sector, 40 in financial services sector and 70 work in other sectors. Eight children of self-employed mothers, 10 children of mother's working in private institutions, 7 children in public institutions, 2 children of mother's working in government institutions and 3 children of mother's working in other categories showed discomfort in their jaw. With regards to child's aching temples upon awakening, 5 children of self-employed mothers, 10 children of private institution working mothers, 2 children of public institution working mothers, 2 children of government institution working mothers and 1 child of other categories showed aching temples upon awakening. Tightness or soreness of the jaws upon awakening was shown by 2 children of self-employed mothers, 5 children of private institution working mothers, 2 children of public institution working mothers, 1 child of government institution working mothers

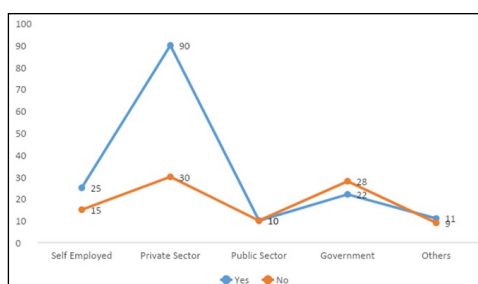
Table 1. Distribution of Children according to parental reported bruxism in their children.

| QUESTION | YES no(%) | No no(%) |
|--|-----------|----------|
| Does your child have a habit of clenching/ grinding? | 55(22) | 195(78) |
| If yes have you noticed any worn-out appearance of teeth? | 55(22) | 195(78) |
| Have you ever noticed flattened teeth in your children's mouth? | 15(6) | 235(94) |
| Does your child complain of any discomfort in the jaw? | 30(12) | 220(88) |
| Does your child complain of aching temples upon awakening? | 20(8) | 230(92) |
| Does your child complain of tightness or soreness of the jaws upon awakening? | 10(4) | 240(96) |
| Does your child complain difficulty in opening the mouth after waking up? | 25(10) | 225(90) |
| Have you heard of felt joint clicks in your child's jaw after he/she wakes up? | 0(0) | 250(100) |

Graph 1. Quality of time spent on child depending on nature of work of mothers.



Graph 2. Distribution pattern of mother's work status and mothers work stress affecting the quality of time spending with child.



and no child of other categories shows tightness or soreness of the jaws upon awakening. Graph 1 represents the quality of time spent on a child depending on the nature of work of mothers. Out of 250 working mothers surveyed for their flexibility in work timings, out of 40 mothers who are self-employed, 10 responded that their timings are flexible and 30 responded that their timings are particular, out of 120 mothers who work in Private Sector, 50 responded that their timings are flexible and 70 responded that their timings are particular, out of 20 mothers who work in public sector, 12 responded that their timings are flexible and 8 responded that their timings are particular, out of 50 mothers who work for the government, 20 responded that their timings are flexible and 30 responded that their timings are particular and out of 20 mothers who work in other sectors, 7 responded that their timings are flexible and 13 responded that their timings are particular. Graph 2 represents the distribution pattern of mother's work status and their work stress affecting the quality of time spent with their child.

Discussion

Previously our team has conducted numerous original studies [20-33] over the past 6 years. The idea and purpose of this study is to describe the occurrence of bruxism in children depending upon the mother's working status assessed in this present study

stemmed due to current interest in our community.

In this study sample we have found that there exists a relationship between the occurrence of bruxism among children with that of the mother's employment status. Majority of the mothers employed in the private sector gave positive responses in terms of the worm out and flattened appearance of the teeth, frequent clenching habits, aching temples on waking up and discomfort and difficulty in opening mouth, which are signs of bruxism. This can be attributed with the fact that bruxism is more prevalent among children with mothers employed in the private sector. Other studies were conducted in a similar manner to evaluate the various signs and symptoms of temporomandibular joint problems encountered by children. Widmalm SE et al, inferred that 3.7% of children experienced temporomandibular joint problems while Cheifetz et al., found no significant relationship between TMJ and bruxism [34, 35].

Based on the results presented above, prevalence of bruxism in children among working mothers was observed. The prevalence of bruxism in children ranged from 3.5-40.6%, and it had no gender variations [9-12]. In this study the prevalence of bruxism is more among the children of mothers working in the private sector, who exhibit positive signs and symptoms of bruxism. Gottens et al, in their research investigated 500 mothers on their

mental well being, other stressful factors and its influence on their children. It was found that children were significantly more prone to bruxism when their mothers had major depressive disorders and lived in stressful environments [36].

From this survey, it can be understood that mothers employed in the private sector have children experiencing bruxism. This can be correlated with the fact that mothers employed in the private sector feel more stressed and spend less quality time with their children compared to mothers working in other employment sectors. There are certain limitations of our study. Since it was a questionnaire study, knowledge of bruxism among the respondents may or may not be predicted, reflecting the inherent limitation of the study. Also, the small sample size was relatively small and hence it is difficult to generalize the findings. Therefore, studies with a relatively larger population involving all schools in the states is highly recommended. Also, further studies assessing the correlation between mothers working status and bruxism should be conducted.

Conclusion

From this research, we conclude that mothers employed in the private sector play a vital role in occurrence of bruxism among children, which is attributed to the long inflexible working hours and high levels of stress encountered by the mothers that draws a line between the quality time spent by mother and the child.

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