
Can The “New Normal” Cause Sleep Bruxism in Children-A Review

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Abstract: COVID-19 has resulted in national lockdown in various countries which has resulted in most citizens of those countries to remain at home. With the lack of social interaction and increase of boredom, children are extremely prone to be irritated and agitated. This can result in bruxism which is clinically manifested by clenching of teeth. Though not life threatening, bruxism can result in various deleterious effects which can affect the quality of life of individuals. Many children who have bruxism have been known to continue the habit as they become adults, resulting in unwanted visits to the hospital. This can be possible only if doctors, parents and children have knowledge about bruxism. With stress and strain increasing during the spread of COVID-19, there is a high chance that most practitioners and parents have missed out in identifying bruxism in children. Parents themselves have been found to be anxious and occupied with “work at home” which can result in them being occupied and paying less attention to their children as the workspace and home space have been merged into one area which was not so common before the emergence of COVID-19. Hence this review was undertaken to illustrate how various factors which have become the ‘new normal’ due to COVID-19 can result in sleep bruxism in children

Keywords: Bruxism, COVID-19. Lockdown, Screen time, work from home

INTRODUCTION

In late December 2019, an outbreak of an unknown disease called pneumonia of unknown cause occurred in Wuhan, Hubei province, China which was few days later, the causative agent of this mysterious pneumonia was identified as a novel coronavirus (nCoV) by several independent laboratories. The causative virus was named as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the infected disease has been named as coronavirus disease 2019 (COVID-19) by the World Health Organization. The epidemic caused by this virus has rapidly spread to all parts of China and 197 countries abroad. Due to almost complete uncertainty about the ways of virus spread and the appropriate modes of treatment, insufficient availability of health services, and no existing vaccine or efficient drug for treatment, most countries adopted the policies of social distancing and partial to total lockdown. The introduction of lockdown has radically changed life for humans all around the world with the rise of severe health issues, economic problems as well as physical and mental issues for individuals of various age groups. The rise of anxiety, stress and depression has been unprecedented due to lack of social interaction and uncertainty related with the COVID-19. This in turn has resulted in rise of bruxism which aggravates orofacial pain.¹

Bruxism has been defined as the repetitive masticatory muscle activity that is characterised by clenching or grinding of the teeth and/or by bracing or thrusting of the mandible, and that is specified as either sleep bruxism or awake bruxism, depending on its circadian phenotype. Although bruxism has an uncertain or controversial

etiology, many factors could be involved in this disorder including both psychological factors like stress or anxiety.² A recent study suggested that some psychological elements including personality and stress may contribute to severity and prevalence of the parafunctional behaviour. This study found that behaviours such as aggressiveness, neuroticism, perfectionism, and stress characterize people who are more prone to bruxism. This indicates a possible psychological role in the etiology of bruxism and central mechanisms that involve brain neurotransmitters or basal ganglia. The most common clinical sign of bruxism is abnormal wear of teeth which is caused by periodic clenching or condensation of teeth. Other side effects of bruxism are tooth hypermobility, recession and inflammation of the gums, pain and hypertrophy of masseteric muscles, degenerative changes of temporomandibular joint and headache.³

There is considerable discrepancy in the literature regarding the prevalence of bruxism in children. A study carried out on children in Hong Kong found an 8.5% prevalence of the habit. Research in Argentina found that 29% of child participants had the habit of bruxism. In Brazil, a study based on parents' reports found a 43% prevalence of sleep bruxism in children. A study carried out on American children also used parents' reports to assess sleep bruxism habits among schoolchildren and found a prevalence of 38%.^{2,3}

Anxiety and stress in children is a common occurrence in clinical pediatric psychiatry. Its prevalence is 2.5% to 5% in the general population and 10.6% to 24% in the clinical population. In recent years, a large number of studies aimed to better identify and understand the characteristics of this symptom in the pediatric population. Different from the adult population, the symptoms were related to anxiety change according to the phases of child development, which often makes identification difficult. It is suggested that childhood anxiety can occur because of its presence in the surrounding environment and is influenced by social factors such as homework and household chores. The association of stress and anxiety has been well documented. Academic as well as peer pressure mounts enormous pressure on children which is often manifested as grinding of teeth.

The emergence of COVID and its impact on the lives of children and adolescents has occurred in unusual manner. The implementation of lockdown has resulted in closure of schools, educational institutes and activity areas. These unavoidable circumstances are beyond normal experience and has led to stress, anxiety and a feeling of helplessness in children. With the initiation of work from home for parents and no chance of meeting friends, there is a high chance child will experience an unprecedented level of stress which may be clinically seen as bruxism. This review aims at illustrating potential factors which may lead to bruxism in children due to the emergence of COVID-19.³

Lockdown

In young children and adolescents, the pandemic and lockdown have a greater impact on emotional and social development compared to that in the grown-ups. In one of the preliminary studies during the on-going pandemic, it was found younger children (3-6years old) were more likely to manifest symptoms of clinginess and the fear of family members being infected than older children (6-18 years old). Whereas, the older children were more likely to experience inattention and were persistently inquiring regarding COVID-19. Although, severe psychological conditions of increased irritability, inattention and clinging behaviour were revealed by all children irrespective of their age groups. Based on the questionnaires completed by the parents, findings reveal that children felt uncertain, fearful and isolated during current times. It was also shown that children experienced disturbed sleep, agitation, inattention and separation related anxiety which are also seen in bruxism.^{4,5}

Online Classes

Since COVID-19 was declared as a global pandemic, public health, including mental health, has become a threat. Researchers, academics well as students, were forced by the national governments to stay safe isolating themselves or implementing a whole and/or partial lockdown globally. Due to imposing lockdown for a long time, the physical access to the classroom has been restricted. About 1.5 billion school going, and university students have been suffering because of institutional closure due to COVID-19 outbreak which has specifically affected young children. Online-classes are to be found demandable as an alternative to institutional closure during this unprecedented time.⁶ Nevertheless, as a result of an inadequate learning approach, both students and instructors face numerous challenges and difficulties including psychological problems. Though online teaching is one of the promising alternatives to the physical classroom, students show a negative perception of online learning behaviour. which might be a significant consequence that is responsible for stress. Recent literature reveals that students have unequal learning opportunities as result of discrimination against better family facilities resulting in digital disparities during COVID-19 periods. This can also result in stress which may be result in children in bruxism.⁷ The lack of adequate gadgets along with poor connectivity may result in slow submission of homework which might result in scolding from teachers which can increase academic pressure and stress resulting in clenching of teeth leading to bruxism.⁸

Screen time

The impact of increased digital screen time caused by the lockdown and quarantine measures worldwide has been largely been unnoticed. The rise in usage of digital technology and online e-learning during this pandemic outbreak may jeopardize the effectiveness of these policies. widespread school closures, in-house quarantine, and the proliferation of online learning increases digital screen time and the overall time spent on near work while decreasing outdoor time among school-going children.⁹ Although school closures may be short-lived, increased access and adoption of such platforms may accelerate the widespread acceptance of digital tools in the longer term. Behavioural changes that arise from the growing dependence on digital devices may persist even after the COVID-19 pandemic. the world has been pushed to embrace digital technology at an unprecedented scale and pace.¹⁰ There is no denying the benefits of digital technology in a time like this. Notwithstanding the global pandemic, it is of paramount importance that parents help their children develop a healthy relationship with digital devices. Current research suggest that excessive screen time is associated with reduced sleep duration in the preadolescent years and sleep disturbances in three age groups ranging from 3 to 17 years. In turn, sleep disturbances, and to a lesser extent duration, are associated with behavioural health problems. Deepa et al found a relationship between screen time and bruxism, which may hold true for the lockdown as the use of digital devices has increased and children are restricted from outdoor activities.¹¹

Work from Home

Poor balance between work and family can be a major stressor for women with young children and have a negative impact on emotional well-being. Due to COVID-19 protocols, most workplaces have been closed except for places where healthcare and frontline workers operate. Changes in work and home domains involve more people struggling to combine work and family life. Unequal distribution of home duties along with a high total workload has been suggested to explain why women tend to report negative work-home balance to a higher degree than men .¹² However, an imbalance between work and home responsibilities has been associated with sub-optimal health in both women and men . Considering this, the interference between work and family life has been suggested as an important for individuals’ health, work environment, sociodemographic, and lifestyle factors. Negative health outcomes of work-home interference may result of negative spillover effects due to situations including an inter-role conflict, i.e., being involved at work may put strain on the family role, or vice versa. Consequently, two types of work-home interference may follow: work-to-home conflict referring to work-role demands having an unfavorable impact on the home and family roles and home-to-work conflict which refers to demands at home having an unfavorable impact on individuals’ work roles.¹³ Children maybe affected by work from home which can result in stress. The limited interaction with other children and the need for playing may result in children be unruly which can lead to noise that can disturb parents. The angered parents in return may shout at the children who may manifest their stress by clenching their teeth resulting in bruxism.^{12,14}

Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade.¹⁵⁻³⁸ COVID-19 has resulted in increased stress in parents and children, especially those who are students. Increase in awareness among both parents and children is necessary. A control of screen time along with timely placed breaks to keep children engaged as well to prevent bruxism. The need for teaching relaxation techniques to children and parents will allow to relieve stress and help both of them to prevent bruxism and have a better quality of life.

CONCLUSION

The present review shows that the “new normal” may result in stress factors which can increase the chances of sleep bruxism in children due to COVID-19 pandemic. An increase in awareness in bruxism should be spread among doctors, teachers, parents and children so each of them can identify it at the earliest and prevent unnecessary visits. Parents should be advised to find ways to keep their children engaged in activities that will keep their children occupied as well as control screen time. This will help to prevent bruxism and keep children healthy, thus ensuring a higher quality of life without the ill effects of bruxism.

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