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PSYCOLOGICAL IMPACT ON PREVALENCE OF ORAL DELETERIOUS HABITS AMONG SINGLE CHILD

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ABSTRACT

BACKGROUND: Oral habits are continuous stimulation of oral or Para oral structures by digit sucking, pacifier sucking, lip sucking and biting, nail-biting, bruxism, self-injurious habits and tongue thrusting. Overindulgence is more likely to illustrate the parenting style for singletons and thus mold them into self-centered, dependent individuals and is anticipated to be lacking in social skills as they do not have siblings to interact with.

AIM: The present study was aimed to establish the impact of psychological factor on oral deleterious habits.

METHODS: Non-probability, convenient sampling technique was employed that yielded information from 200 random samples ranging from 10 to 14 years of age consisting of 92 boys and 108 girls was taken into the observational study having a cross-sectional design. All the participants data interrogated for the presence of various oral habits were evaluated for statistical analysis by SPSS software Version 26.0.

RESULTS: A significant correlation was observed between the oral habits and the study population group ($p=0.017121$ $P<0.05$). On comparing boys and girls with oral habits a significant correlation was observed and it was also observed Bruxism (52.6%) was

predominant among boys with no significant correlation with age. Similarly Nail Biting (50%) being the most predominant habit among girls.

CONCLUSION: Eitherparental overindulgence or negligence can be a crucial factor which needs to be given immediate attention among this age group. Lack of awareness about the adverse oral habits would not only result in dentofacial anomalies but also have a greater impact on their well-being.

Keywords: Child Neglect, Maternal Growth, Nail Biting, Oral Habits, Overindulgence, Single Child

INTRODUCTION

Oral cavity is the predominant site for expression of emotions and often present as a source of relief in desire and anxiety in both children and adults. Stimulation of oral and perioral regions with tongue, finger, nail or any foreign objects can bring about soothing action and often believed to play a key role in outcome of overall psychological well-being of children and adults **[1]**.

Promoting and supporting the physical, emotional, social, and intellectual development of a child from infancy to adulthood is considered as a major factor in achieving a comfort and happiness of a child. The prevalence of oral habits in high school girls and primary school students has been reported to be approximately 80% to 87% and 30% to 40% respectively **[2]**. Uncontrollable Habitual oral habits consist of those behaviors which are permanent in child and when emotional pressures are unbearable for the child, he or she can feel protection or self-secure with this habit and averting the child from these compulsive habits make him or her anxious and apprehensive **[3]**. Habits such as digit sucking, pacifier sucking, lip sucking and biting, nail-biting, bruxism, self-injurious habits and tongue thrusting are often considered deleterious. Their effect is dependent on the nature, onset and duration of habits. The negative influence of these unintentional or intentional habits on occlusion originates in childhood. Substantial differences are observed in the prevalence of habits throughout the world **[4]**.

Deleterious habitual patterns of muscle behavior often are related with retarded or delayed osseous growth, malocclusion or malposition of teeth, irregular or disturbed breathing habits, difficulties in speech, imbalance the facial musculature and psychological problems such as insecure, loss of social contacts **[5]**. Heimer *et al*. **[6]** observed a significant reduction in the prevalence of anterior open

bite with age, suggesting the self-correction of this malocclusion when the habit is discontinued. In general, the prevalence of oral habits in children has been associated with several factors including age, gender, ethnicity, number of siblings, and socioeconomic status **[7]**.

One interpretation proposed by early psychiatrists and psychologists believes only children as relatively challenging and underprivileged. With only one child, parents are likely to behave overindulgence which eventually characterizes the childcare conduct for singletons. Early psychologists even called singletons as a "disease in itself" and society would be better off if "there are no only children" **[8, 9]**. With taking these points into considerations the present study was aimed to establish the impact of psychological factor on oral deleterious habits by evaluating its prevalence among single child.

METHODS

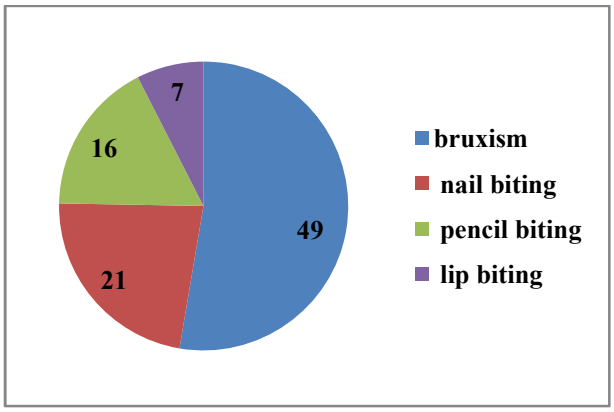
Nonprobability, convenient sampling technique was employed that yielded information from 200 random samples ranging from 10 to 14 years of age consisting of 92 boys and 108 girls was taken into the observational study having a cross-sectional design. The study population was divided into 4 groups consisting of 50 participants in each age group. All the participants were interrogated about the presence of various oral habits by verbal communication. Data's obtained were evaluated for statistical analysis by SPSS software Version 26.0.Chi-square test was done to compare the prevalence of oral habits according to age group and gender. The probability level was set at $\alpha = 0.05$. <5% ($P < 0.05$) differences in probabilities were considered to be statistically significant.

RESULTS

On statistical analysis, the mean age was found to be 11.75years with S.D of 1.707. Among boys Bruxism (52.6%) **(Graph 1)** was predominant followed by nail biting, pencil biting and lip biting being the least, but failed to show any statistical significant correlation with age **(Table 1)**. Similarly no significance with age was observed in girls but Nail Biting (50%) **(Graph 2)** being the most predominant habit followed by lip biting, bruxism and pencil biting being the least observed one **(Table 2)**. Interrelation between the groups was evaluated by Kruskal-wallis test. The p value was found to be significant ($p=0.01944$) ($p<0.05$) A significant correlation was observed between the oral habits and the study population group ($p=0.017121$ $P<0.05$) **(Table 3)**. On comparing boys and girls with oral habits a significant correlation was also observed ($p<0.0001$) **(Table 4)**.

Table 1: Distribution of Habits Among the Study Population With Respect to Age in Boys

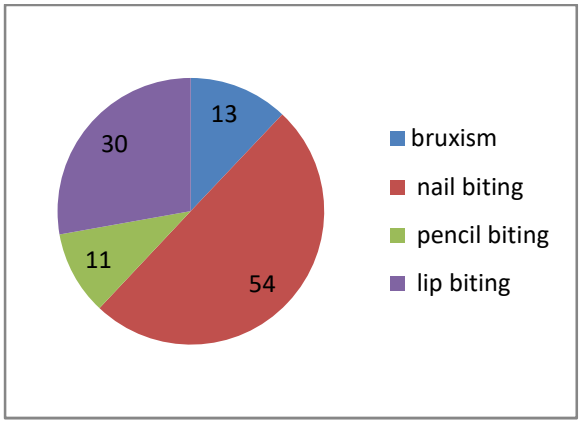
MALE	BRUXISM	NAIL BITING	PENCIL BITING	LIP BITING	
10 YEARS	12 (12.65) [0.03]	4 (5.42) [0.37]	4 (4.13) [0.00]	4 (1.81) [2.66]	24
11 YEARS	10 (11.59) [0.22]	4 (4.97) [0.19]	7 (3.78) [2.73]	1 (1.66) [0.26]	22
12 YEARS	15 (13.70) [0.12]	7 (5.87) [0.22]	3 (4.47) [0.49]	1 (1.96) [0.47]	26
14 YEARS	12 (11.06) [0.08]	6 (4.74) [0.33]	2 (3.61) [0.72]	1 (1.58) [0.21]	21
	49	21	16	7	93
The chi-square statistic is 9.1101. The *p*-value is .427175. The result is *not* significant at $p < .05$.					



Graph 1: Distribution of Habits Among the Study Population in Boys

Table 2: Distribution of Habits Among the Study Population With Respect to Age in Girls

FEMALE	BRUXISM	NAIL BITING	PENCIL BITING	LIP BITING	
10 YEARS	3 (3.37) [0.04]	14 (14.00) [0.00]	4 (2.85) [0.46]	7 (7.78) [0.08]	28
11 YEARS	3 (3.25) [0.02]	12 (13.50) [0.17]	2 (2.75) [0.20]	10 (7.50) [0.83]	27
12 YEARS	3 (2.89) [0.00]	15 (12.00) [0.75]	2 (2.44) [0.08]	4 (6.67) [1.07]	24
14 YEARS	4 (3.49) [0.07]	13 (14.50) [0.16]	3 (2.95) [0.00]	9 (8.06) [0.11]	29
	13	54	11	30	108 (Grand Total)
The chi-square statistic is 4.0472. The *p*-value is .908281. The result is *not* significant at $p < .05$.					



Graph 2: Distribution of Habits Among the Study Population in Girls

Table 3: Inter Relation Between Groups in Relation to Oral Habits

N	8	8	8	8
∑X	62	75	27	35
Mean	7.75	9.375	3.375	4.375
$\sum X^2$	656	851	111	253
Std. Dev.	5.0071	4.5962	1.685	3.7773
Source	*SS*	*df*	*MS*	
Between-Groups	190.3438	3	63.4479	$F = 4.00912$
Within-Groups	443.125	28	15.8259	
Total	633.4688	31		

The *f*-ratio value is 4.00912. The *p*-value is .017121. The result is significant at $p < .05$.

Table 4: Comparison of Boys Vs Girls in Relation to Oral Habits

	BRUXISM	NAIL BITING	PENCIL BITING	LIP BITING	
MALE	49 (28.69) [14.38]	21 (34.70) [5.41]	16 (12.49) [0.98]	7 (17.12) [5.98]	93
FEMALE	13 (33.31) [12.39]	54 (40.30) [4.66]	11 (14.51) [0.85]	30 (19.88) [5.15]	108
	62	75	27	37	201
The chi-square statistic is 49.8044. The *p*-value is < 0.00001. The result is significant at $p < .05$.					

DISCUSSION

In the present study out of 200 participants 108 were girls signifying the prevalence of oral habits among girls are slightly higher than boys. Similarly Chen *et al* in his study observed Female adolescents reported more psychological symptoms than males but were less likely to yield to negative peer pressure and had lower levels of problem behavior **[10]**. Quashie-Williams *et al* in his study observed 34.1% of children presented with oral habits were females. He also observed repetitive behaviors are common in infantile period and most of them are ongoing habit even after their maturity age where as few are discontinued spontaneously **[11]**.

Anila et al in a study observed Overall prevalence of oral habits was 72.7% in the study participants. Mouth breathing was the most commonly reported oral habit (29.4%), followed by tongue thrusting (23.5%), nail biting (20%), thumb-sucking (17%), pencil biting (8.7%), bruxism (4.9%), and lip/cheek biting (4.5%). Nail biting was reported significantly more in females and bruxism significantly more in males **[12]**. Similarly in the present study it can be observed that among boys Bruxism (52.6%) was predominant followed by nail biting, pencil biting and lip biting being the least and in girls but Nail Biting (50%) being the most predominant habit followed by lip biting, bruxism and pencil biting.

Certain habits like thumb sucking which is mostly seen in 50% of the population, other such habits include tongue thrusting, mouth breathing, nail biting, lip chewing and bruxism which are also commonly found in the local society but often ignored **[13]**. Nail biting was seen in both boys (24%) as well as girls (50%) with an average prevalence of 37% (combined) in the present study which is very high compared to the prevalence reported by Garde *et al* **[14]**, Shetty and Munshi **[15]** and Sharma *et al* **[16]** who reported a prevalence of 5.8%, 12.7%, and 3%, respectively. The associated reason behind the same can be multiple including the stress factor which is more prevalent these days in an individual's life. Highly stressful and anxiety-related behavior has been indirectly related to nail biting and thumb-sucking. Anxiety, stress, and

loneliness may also trigger habits as nail biting, commonly observed in children, which may be originated from the thumb-sucking habit that is transferred to the nails **[17]**.

The prevalence of bruxism and pencil biting in the present study is 52% and 17% among boys and 13% and 10% among girls respectively. This is higher than the previous study reported by Shetty and Munshi **[15]**. who reported6.2% prevalence of bruxism and 9.8% prevalence of pencil biting. Bruxism, nail biting, and pencil biting were found to be elevated in 7–17-year-old children suffering from attention-deficit hyperactivity disorder **[18]**. Nail biting was found to be significantly more in females (P = 0.004) in the present study. Bruxism wasreported significantly more in male children (P = 0.001), similar to that reported by Shetty and Munshi. This can be due to psychological impact among gender-wise followed by hormonal changes, diet for this difference of habits **[19]**.

In the present study bruxism was more common among boys. It should be noted that these symptoms may not essentially specify a straight forward cause-effect relationship. In the case of children, bruxism often occurs with obstructive nasal and breathing signs due to enlarged tonsils and adenoids **[20]**. However, it has been found by various studies that there is a greater incidence of behavior and attention difficulties in children with bruxism. In Seraj Bahman's study a strong relation between mother's work and the children's bruxism by 47.6% of full-time mothers and self-employed mothers **[21]**.

Similarly, it is unknown whether bruxism is the cause of amplified excitements and behavioral problems or if children with behavior and attention difficulties exhibit altered sleep along with bruxism. It is known that sleep fragmentation secondary to sleep-disordered breathing in children can lead to behavior, attention and executive function problems **[22, 23]**.

In our study, among the sociodemographic features of children, being the only child was the only factor that presented statistically difference ($p<0.05$) between the groups. It is strongly reported that there is a relationship between the individual personality, emotional factors and various oral habits trigger in children **[24]**. We believe that "only children" tend to be ruined and more subjected for emotional problems such as anxiety and stress, which are probably caused by less socialization with others and the strong parents' demand from them. So, multidisciplinary treatment during childhood may help individuals understand their conduct regarding conflict or stress, improving the control of the habit by

targeting the psychological effect **[25]**. We should be cautious in drawing our conclusions regarding the effect of sibling sizes. The findings merely suggest that there is a very small yet detectable association between sibling sizes and oral habits outcomes.

CONCLUSION

It can be concluded that inhibition and interference of these deleterious oral habits at an early stage is of greatest important for the good oral health as well as psychological wellbeing of the children. In the present study it was observed significant presence of oral deleterious habits in a single child in both boys as well as girls among 10 to 14 years age group. Either parental overindulgence or negligence is believed to be a crucial factor which needs to be given immediate attention in this age group. Though parental educationwas positively related to psychological distress but impacts are negatively associated with problem behavior.Techniques to remove these adverse oral habits should be introduced with family and social support in place.Lack of awareness about the adverse oral habits would not only result in dentofacial anomalies but also have a greater impact on their well-being.

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