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A Study on Prevalancce of Oral Habits in Children (4-9) in Chennai

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Abstract: ***Background: This cross-sectional study investigates oral habits in 450 children aged 4-9 in Chennai, considering their prevalence, gender distribution, and age-wise patterns. The significance of oral habits, seen as repetitive actions with potential consequences for growth patterns, is explored within the context of a multidimensional approach to oral health.***
Materials and Methods: Three schools provided a diverse sample, with undergraduate students conducting clinical examinations to assess oral health. Statistical analysis, including descriptive statistics, was employed to present findings comprehensively.
Results: Of the total population, 72% exhibited oral habits, with variations in prevalence rates across genders and age groups. Gender-specific patterns and disparities compared to other studies were observed, emphasizing the need for nuanced interventions. Conclusion: This study contributes valuable insights into the prevalence and patterns of oral habits in Chennai's pediatric population. Early identification and tailored interventions are crucial, considering the potential long-term consequences and the multifaceted nature of these habits.
Keywords: Oral habits, pediatric population, prevalence, gender distribution, age-wise patterns, intervention.

I. INRODUCTION

A habit is an automatic, repetitive action resulting from a complex natural process involving muscle contraction. These habits can be normal or abnormal, with normal habits playing a constructive role in growth and abnormal habits potentially disrupting normal growth patterns.[1] The significance of oral health extends beyond the traditional assessment of the presence or absence of oral diseases. In recent years, a multidimensional concept has emerged, encompassing not only the physical aspects of oral health but also its psychosocial dimensions and its impact on overall quality of life. This shift in perspective underscores the importance of understanding and addressing oral habits, recognizing them as integral components of a comprehensive approach to well-being. Defined as repetitive actions performed automatically, habits involving the stimulation of the oral cavity with the tongue, finger, nail, or other objects serve as coping mechanisms for both children and adults, offering relief from stress and anxiety. Certain repetitive and self-injurious behaviors, such as mouth breathing, tongue thrusting, digit sucking, and nail/lip/cheek biting, fall within this spectrum.[2] The consequences of these oral habits depend on factors like the onset, duration, and nature of the habit. Thumb-sucking, a common behavior considered normal in infants and young children up to the age of 3 years and 6 months, can lead to dental changes if prolonged beyond 5 years.[3] These changes include increased overjet, open bite in anterior teeth, labial inclination of upper incisors, and posterior crossbite. Transition delays between infantile and adult swallowing patterns contribute to tongue thrusting, often associated with malocclusions, open bites, and Class II malocclusions. Bruxism, characterized by forceful nonfunctional tooth contact, can result from emotional stress and lead to tooth wear, muscle soreness, and tempromandibular joint dysfunction.[4] The persistence of oral habits beyond certain developmental stages poses risks of malocclusion, facial deformities, and bone malformations. Prolonged habits, extending beyond 5 years of age, may not only impact dental health but also carry social implications, potentially interfering with speech clarity and contributing to dental malocclusion. This study in Chennai seeks to shed light on the prevalence of these oral habits in children aged 4-9, providing valuable insights for the development of targeted interventions and educational initiatives aimed at promoting healthier habits and mitigating potential long-term consequences.

II. MATERIALS AND METHODS

This cross-sectional study was conducted to assess the prevalence of oral habits in children aged 4 to 9 in Chennai. The research design involved data collection from three schools to ensure a diverse and representative sample. A total of 450 children were included in the study, with participants drawn from three different schools in Chennai. The sample encompassed both boys and girls within the specified age range.

The study was approved by the department of pediatric and preventive dentistry of Thai Moogambigai dental college and hospital. Undergraduate students of pediatric dentistry department conducted clinical examinations to assess the oral health status of the participants. This included an examination of dental structures and occlusion to identify any signs of malocclusion or dental issues associated with oral habits. Ethical approval was obtained from relevant institutional review boards. Informed consent was obtained from parents or legal guardians before including children in the study. Statistical analysis was performed using appropriate methods to determine the prevalence of each oral habit across different age groups and genders. Descriptive statistics, including percentages and frequencies, were calculated to present a comprehensive overview of the findings.

III. RESULTS

The extensive analysis of the overall population, including children aged 4-9 and encompassing both those with and without oral habits, revealed a total sample size of 450 children. Within this cohort, 324 children, comprising 72% of the total population, displayed some form of oral habit. When examining the gender distribution within the entire study population, there were 169 boys and 155 girls, constituting 37.56% and 36.13%, respectively. Specifically, thumb-sucking was identified in 58 children, with 32 girls and 26 boys, making up 55.17% of the total population. Tongue thrusting, observed in 51 children, showed a higher prevalence among girls (62.75%) compared to boys (37.25%). Lip biting was noted in 59 children, with a slightly higher representation among boys (52.54%) than girls. Nail biting was documented in 57 children, with girls accounting for 52.63% of cases. Pencil biting emerged as the most prevalent habit, affecting 60 children, with a notably higher incidence among boys (65%). Mouth breathing was noted in 39 children, with an almost equal distribution between girls and boys. In the age-wise analyses, it was found that thumb-sucking was observed in 16% of the total population at age 4, with a breakdown of 9% in boys and 7% in girls. In the same age group, tongue thrusting was identified in 9% of children, comprising 3% boys and 5% girls. Lip biting or sucking was present in 7% of children, with 5% boys and 4% girls exhibiting this habit. Nail biting was reported in 5% of children, with a distribution of 4% boys and 3% girls. Pencil biting, a prevalent habit, was noted in 16% of children at age 5, with 9% boys and 7% girls engaging in this behavior. Mouth breathing, observed in 13% of children at age 5, showed an equal distribution of 7% in both boys and girls.

IV. DISCUSSION

The comprehensive analysis of oral habits among children in our study revealed intriguing insights and disparities when compared to findings from other studies. The notable prevalence of oral habits, affecting 72% of the total population, underscores the significance of understanding and addressing these behaviors in pediatric oral health. Notably, our study's results diverged from those of Quashie-Williams et al, who reported a lower prevalence of deleterious oral habits at 34.1%,[5] and Guaba et al[6], where only 3% of children demonstrated oral habits, indicating potential regional or demographic variations. Gender-specific patterns emerged in our study, with tongue thrusting being more common in girls, contrary to Shetty et al's findings of higher prevalence among boys. Thumb-sucking, observed in 16% of children at age 4, showcased distinct distributions between boys and girls, emphasizing the importance of considering developmental stages and gender nuances in oral habit studies.[7] The prevalence of mouth breathing at 13% in our study aligned with Sharma et al's[8] observations, where it was the second most prevalent habit with a 17% incidence rate, emphasizing the significance of early diagnosis and intervention for this potentially impactful habit.[7] Nail biting, documented in 5% of children in our study, showed similarities with Sharma et al's findings of 3%, while contrasting with Shetty and Munshi et al's higher prevalence of 12.7%. The lower prevalence of 0.4% in another study in Chattisgarh highlights the variability in regional habits.[9,10] Stress and anxiety-related behaviors, indirectly linked to nail biting and thumb sucking by Agarwal et al, add a psychological dimension to the understanding of these habits.[11] Baydaş et al's report of increased Enterobacteriaceae prevalence in the oral cavities of children with nail-biting habits introduces a health-related perspective, emphasizing the need for a holistic approach to oral health intervention.[12] In conclusion, our study contributes valuable data to the growing body of knowledge on oral habits in children. The disparities with other studies highlight the importance of considering regional, cultural, and demographic factors in understanding these behaviors. These findings can inform targeted intervention strategies and underscore the need for ongoing research to comprehensively address the multifaceted nature of oral habits in pediatric populations.

V. CONCLUSION

In summary, our study reveals a notable prevalence of oral habits among children aged 4-9 in Chennai, with 72% of the population exhibiting following oral habits (thumb sucking, tongue thrusting, lip biting, nail biting, pencil biting, mouth breathing) excluding habits like bruxism, cheek biting and pacifier dependency. Gender-specific patterns and variations in prevalence rates compared to other studies highlight the need for nuanced approaches to intervention.

Early identification and targeted strategies are crucial to address potential long-term consequences, emphasizing the complexity of oral habits in pediatric populations. Future research should explore cultural and regional factors to inform effective preventive measures and interventions for promoting healthier oral habits in children.

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Age	Boys with Oral Habits (%)	Girls with Oral Habits (%)
4	15	10.61
5	8.33	6.06
6	8.33	6.06
7	6.67	4.55
8	5	3.03
9	3.33	4.55

Oral Habit Type	Boys (%)	Girls (%)	Chi- square	p-value
Thumb Sucking	32-18.93	26-16.77	0.2780	0.9641
Tongue Thrusting	19-11.24	32-20.65	4.2862	0.2322
Lip Biting	31-18.34	28-18.06	0.0043	0.9999
Nail Biting	27-15.98	30-19.35	0.5897	0.8988
Pencil Biting	19-23.08	21-13.55	6.6779	0.0829
Mouth Breathing	21-12.43	18-11.61	0.0580	0.9963

	Total	Percentage (%)
Total Population	450	-
Population with the Habit	324	72.00
Total No. of Boys	169	37.56
Total No. of Girls	155	36.13

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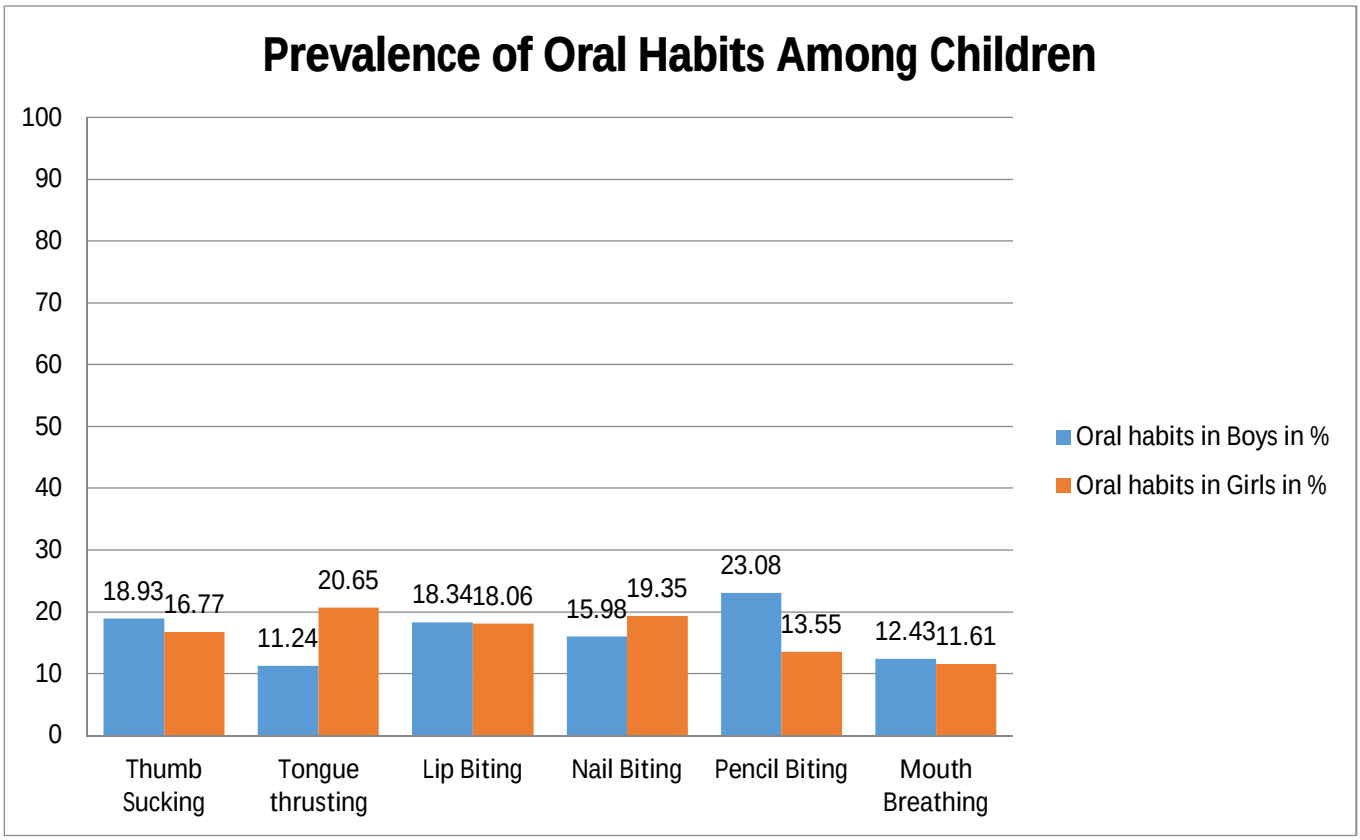

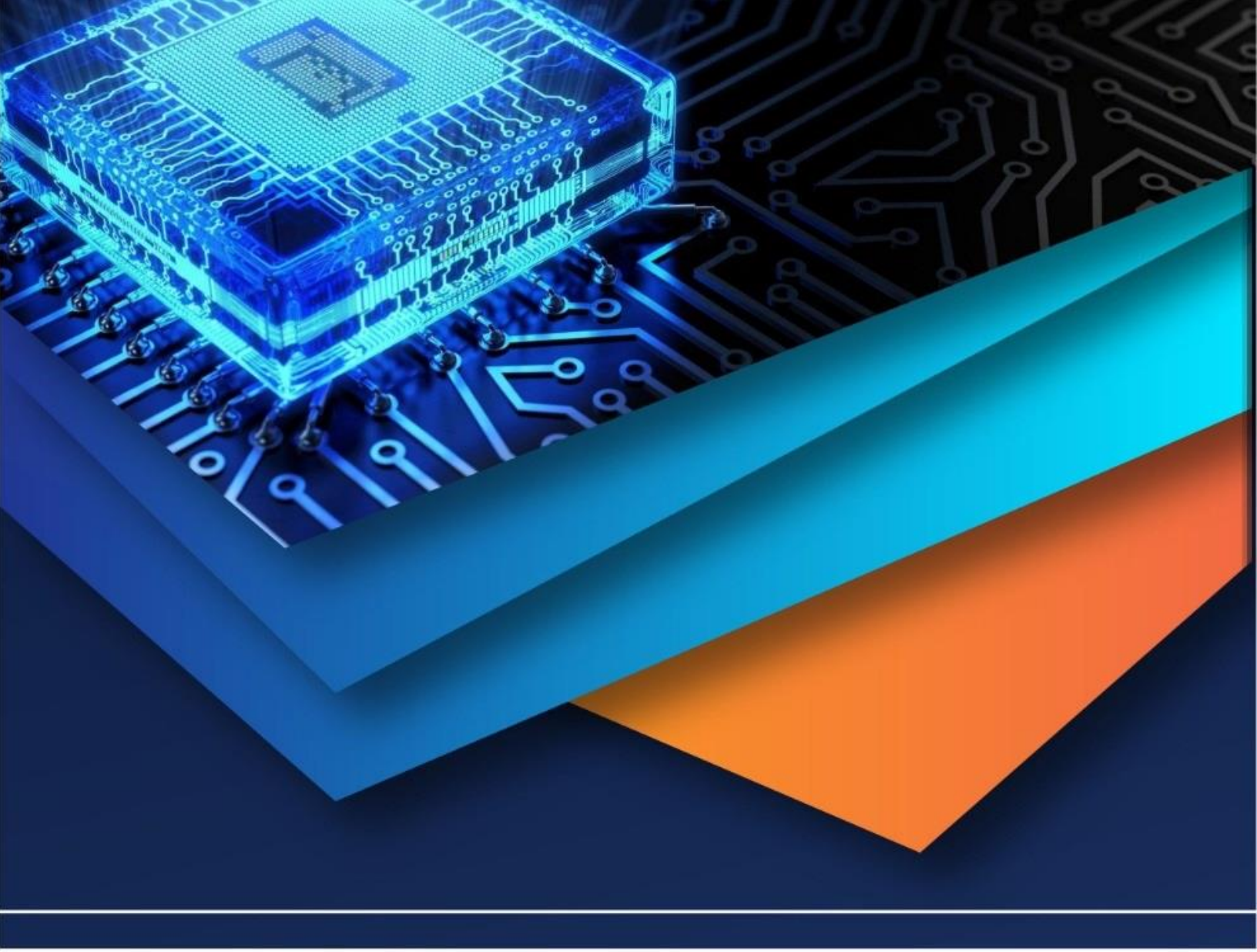

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