

Self-reported justification for prolonged indulgence in oral habits in a group of Nigerian school children aged 6 to 12 years old

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Abstract

Background: Oral habits are repetitive behaviors in the oral cavity, which may have deleterious effects on the occlusion when continued beyond four years of age.

Objective: To determine the reasons for the prolonged indulgence in non-nutritive oral habits by school children aged 6 to 12 years old.

Materials and methods: This was a cross-sectional study conducted among two hundred and twenty-one (221) 6 to 12 year old Primary and Junior High schoolchildren. Data Analysis was carried out using Statistical Package for Social Sciences (SPSS) software Version 20.0. Significance was determined at 95% confidence interval and statistical significance set at $p < 0.05$.

Results: Majority of the male participants (57, 63.3%) could not adduce any reason while the females (50, 60.2%) cited "I enjoy doing it" as their reason for indulging in oral habits ($p=0.02$). Majority of the younger children (6-9 years old) claimed that it helped them to sleep (30, 85.7%, $p=0.006$) and they enjoyed the habit (57, 68.7%), whilst older children said it helped them to concentrate (19, 38.8%). Statistically significant associations were recorded between 'helping me to fall asleep' and finger sucking, cheek biting, tooth grinding and anterior tongue resting position.

Conclusion: The younger children adduced the habit to their ability to concentrate and shyness, whilst the older participants particularly females adduced pleasure as the major reason. Majority of participants did not have any reason for these habits.

Keywords: Oral Habits, schoolchildren, self-reported, prolonged indulgence, justification.

Résumé

Contexte : Les habitudes buccales sont des comportements répétitifs dans la cavité buccale pouvant avoir des effets délétères sur l'occlusion lorsqu'elles sont maintenues au-delà de quatre ans.

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Objectif: Pour déterminer les raisons de l'indulgence prolongé d'habitudes orales non nutritives par les enfants écoliers âgés de 6 à 12 ans.

Matériels et méthodes : Il s'agissait d'une étude transversale menée parmi deux cent vingt et un (221) écoliers du primaire et du secondaire de premier cycle. L'analyse des données a été réalisée à l'aide du logiciel SPSS (Statistical Package for Social Sciences) version 20.0. La signification a été déterminée à un intervalle de confiance de 95% et la signification statistique établie à $p < 0,05$.

Résultats : La majorité des participants masculins (57, 63,3%) n'ont pu indiquer aucune raison, tandis que les femmes (50, 60,2%) ont cité "J'y prends plaisir à le faire" comme raison de se livrer à des habitudes orales ($p = 0,02$). La majorité des enfants les plus jeunes (âgés de 6 à 9 ans) ont affirmé que cela les aidait à dormir (30, 85,7%, $p = 0,006$) et qu'ils prenaient plaisir de cette habitude (57, 68,7%), tandis que les enfants plus âgés affirmaient que cela les aidait à se concentrer (19, 38,8%). Des associations statistiquement significatives ont été enregistrées entre "aider à m'endormir" et succion du doigt, morsure de la joue, grincement des dents et la langue antérieure en position de repos.

Conclusion : Les enfants plus jeunes ont cité l'habitude à leur capacité de concentration et à leur timidité, tandis que les participants plus âgés, en particulier les filles, ont cité le plaisir comme raison principale. La majorité des participants n'avaient aucune raison de ces habitudes.

Mots-clés : habitudes orales, écoliers, auto déclaration, indulgence prolongée, justification.

Introduction

Oral habits are repetitive behaviors in the oral cavity, which may have deleterious effects on the occlusion and structures of the dentofacial complex. These effects include malocclusion amongst others and are dependent on the frequency, intensity and duration of the habits [1, 3]. In the literature, oral habits have been classified into groups which include; acquired and compulsive, [4] and nutritive and non-nutritive [5]. Whilst nutritive habits are necessary for feeding, non-nutritive oral habits are unnecessary as well as

detrimental not only to the primary but also to the permanent occlusion of children if continued after the age of four years [6-9]. Although some nutritive habits when prolonged can also have untoward effects on the occlusion. Non-nutritive habits include digit sucking, pacifier sucking, lip sucking and biting, nail-biting, bruxism, self-injurious habits, mouth breathing and tongue thrusting [10]. Malocclusions resulting from these habits vary and are expressed in particular as increased overjet, anterior open bite, posterior crossbite, constricted arches and deep palatal vault [10-12].

The prevalence values for oral habits recorded in different studies carried out among Nigerian children range from 9.9% to 34.1%. [13-15] In a previous study assessing the prevalence of different types of oral habits in 6 – 12 years old, nail biting was found to be the most prevalent habit, accounting for almost half of the study population [16]. A significant gender difference was also observed with more males involved in oral habits such as finger sucking, lip sucking, cheek biting, tongue thrusting, while more females were involved in thumb sucking and chewing gum [16].

Indeed, probably due to lack of knowledge and awareness of the deleterious effects of oral habits on the occlusion, some children may continue to indulge in these habits even up to adolescence [17]. Such behaviour when exhibited publicly may result in ridicule or bullying by peers in school as well as parental displeasure which may cause psychological distress to such individuals [18]. Some of the factors which predispose to the development and persistence of non-nutritive sucking habits have been reported to include social determinants, such as paternal education, maternal age, parental income, the mother's occupation, maternal civil status, the number of siblings, the maternal breastfeeding period and the use of a baby bottle [19]. Although oral habits have been described by psychologists and psychiatrists as a psychodynamic phenomenon [8], little research has been carried out to ascertain from the children and adults who engage in prolonged indulgence of these habits the reasons for their behaviour. This study is seeking to identify such factors in order to render help to these individuals.

Therefore, this study was carried out to determine the reasons for the prolonged indulgence in oral habits by school children aged between 6 to 12 years old. This study will enable us to have a better understanding of the causative agents of prolonged oral habit indulgence, with the view of formulating informed strategies for the cessation of these habits.

Materials and methods

This was a cross-sectional, questionnaire-based study carried out among two hundred and thirty-five (235) Primary and Junior High School children aged, six to twelve years in three private schools in Port Harcourt, Rivers State who indicated that they indulged in one oral habit or the other. Ethical clearance was obtained from the University of Port Harcourt Teaching Hospital Ethics and Research Committee. Children undergoing orthodontic treatment to break oral habits were excluded from participating in the study. Permission was sought and obtained from the Proprietor of each school prior to the commencement of the study. Thereafter, informed consent was sought and obtained from the parents or guardians of the children, whilst verbal assent was obtained from the children.

One of the investigators (EAA) explained in detail the purpose for the study and went over each item with the children and their teachers to ensure proper understanding before the questionnaire was filled individually. Copies of the questionnaires were subsequently filled either by the child alone or assisted by his/ her class teacher in the classroom and returned the same day.

Section A of the questionnaire captured socio-demographic data, Section B supplied information on the reasons for the participants' indulgence in non-nutritive oral habits. A total of 235 copies of the questionnaires were distributed but only 221 were completed properly and consequently analysed.

Data analysis was carried out using Statistical Package for Social Sciences (SPSS) software Version 20.0. The results were presented using frequencies, percentages and proportions for categorical variables and means together with standard deviations for continuous variables. Chi Square and Fisher's exact tests were used to test association between variables. Significance was determined at 95% confidence interval and statistical significance set at $p < 0.05$.

Results

A total of 235 school children admitted to indulging in oral habits, however only 221 (94.0%) were included in this study due to inappropriate filling of the questionnaire. The sample consisted of 118 (53.4%) female and 103 (46.6%) male 6-12 year-old schoolchildren with a mean age of 9.11 ± 2.1 years. Table 1 shows the age and gender distribution of the participants.

Table 2 shows the reasons for the prolonged indulgence in non-nutritive oral habits by

respondents classified based on their gender and age. Majority of the male participants (57, 63.3%) could not adduce any reason for the habit, while a significantly greater number ($p=0.02$) of females (50, 60.2%) than males, cited "I enjoy doing it" as their reason for indulging in oral habits. The influence of siblings and friends who also engaged in oral habits was the least given reason for both genders. Majority of the younger children (6-9 years old) claimed that it helped them to sleep (30, 85.7%) and they enjoyed the habit (54, 65.1%), whilst older children said it helped them to concentrate (19, 38.8%), they enjoyed it (29, 34.9%) and they did not know why (46, 51.1%) they continued to indulge in the habit. Out of the schoolchildren that cited shyness as the reason for their indulgence in an oral habit, majority (19, 86.4%) were also aged 6-9 years, this finding was also statistically significant ($p=0.004$).

satisfaction of sucking needs through breastfeeding during infancy, [10,13,19] emotional disturbances and pleasure,[14] while others attribute such to the emotional and learned behavioural theories.[13]

The reasons expressed by children of school age in this study for the prolonged engagement in these oral habits were found to vary with both age and gender. The younger children particularly the nine year -olds were able to adduce reasons for their indulgence in non-nutritive oral habits much more than the older children did. This implies that the younger ones indulged more purposefully in these habits than the older ones. The younger children claimed that they indulged in these habits in order to fall asleep and as a source of pleasure whilst the main reason adduced to this behaviour by the older children was the ability to concentrate. Most of the older children simply stated that they did not know

Table 1. Age and gender distribution of participants

Age (years)	Female N (%)	Male N (%)	Total N (%)	P
6	19 (16.1)	16 (15.5)	35 (15.8)	0.548
7	11 (9.3)	12 (11.7)	23 (10.4)	
8	20 (16.9)	8 (7.8)	28 (12.7)	
9	22 (18.6)	20 (19.4)	42 (19.0)	
10	13 (11.0)	12 (11.3)	25 (11.7)	
11	11 (9.3)	14 (13.6)	25 (11.3)	
12	22 (18.6)	21 (20.4)	43 (19.5)	
Total	118 (53.4)	103 (46.6)	221 (100.0)	

Table 3 shows the association between individual non-nutritive sucking habits and the reasons for indulging in the habit. A statistically significant association was recorded between 'helping me to fall asleep' and the following oral habits: finger sucking, cheek biting, tooth grinding and anterior tongue resting position. 'Helps me to concentrate' was significantly associated with finger sucking and object biting. Furthermore, a significant association was also recorded between 'I enjoy doing it' and chewing gum, while shyness was associated with cheek biting. Chewing gum and tooth biting was associated with "because my friends do it".

Discussion

The occlusal effects of these deleterious habits have been proven and widely discussed in the literature [8,10-12,15,17] However, the reasons for these habits are still not clear with some researchers having claimed it could be as a result of tiredness, insufficient

why they indulged in these habits which implies that as people grow older these habits may not have any particular meaning and are simply repetitive actions mainly associated with pleasure. This is an important clinical finding as it may aid clinicians in understanding and proffering solutions to patients and their parents or caregivers that present in their clinics with such problems.

Among the schoolchildren, females claimed to enjoy indulging in non-nutritive oral habits more than the males, this was statistically significant. This may be due to the emotional nature of females, as they are known to feel and are seen to express their emotions more than males do. This suggests that these habits provide an increased level of emotional and psychological comfort and wellbeing to the female child. This is corroborated in other studies among younger children where females were found to indulge more in the oral habit than males. [15, 16, 20] This emotional response of the female child is also similar to findings by other researchers that have

Table 2. Cross tabulation of reasons for indulgence in oral habits by gender and age

Reason	Gender		Age (years)										P
	Male	Female	n (%)										
	N (%)	N (%)	6	7	8	9	10	11	12	12	12		
Concentration	20 (40.8)	29 (59.2)	0.053	9 (18.4)	6 (12.2)	3 (6.1)	12 (24.5)	5 (10.2)	4 (8.2)	10 (20.4)	0.61		
Helps to sleep	20 (57.1)	15 (42.9)	0.589	7 (20.0)	3 (8.6)	9 (25.7)	11 (31.4)	3 (8.6)	1 (2.9)	1 (2.9)	0.006*		
Enjoy it	33 (39.8)	50 (60.2)	0.002*	16 (19.3)	6 (7.2)	9 (10.8)	23 (27.7)	11 (13.3)	7 (8.4)	11 (13.3)	0.078		
Shy	12 (54.5)	10 (45.5)	0.876	5 (22.7)	1 (4.5)	4 (18.2)	9 (40.9)	1 (4.5)	0 (0.0)	2 (9.1)	0.041*		
Friends influence	2 (28.6)	5 (71.4)	0.189	1 (14.3)	1 (14.3)	0 (0.0)	3 (42.9)	1 (14.3)	1 (14.3)	0 (0.0)	0.577		
Sibling influence	3 (27.3)	8 (72.7)	0.08	4 (36.4)	1 (9.1)	0 (0.0)	4 (36.4)	2 (18.2)	0 (0.0)	0 (0.0)	0.111		
Do not know	57 (63.3)	33 (36.7)	0.024*	13 (14.4)	8 (8.9)	13 (14.4)	10 (11.1)	12 (13.3)	14 (15.6)	20 (22.2)	0.383		

*significant

Table 3: Association between individual non-nutritive sucking habits and the reasons for indulging in the habit.

Reasons for the Habit	Non nutritive sucklet habits										Anterior Tongue resting position
	Fisher's exact p value										
	Thumb sucking	Finger sucking	Tongue sucking	Lip sucking	Nail biting	Object biting	Chewing Gum	Cheek biting	Tooth Grinding	Tongue Thrusting	
"Helps me to fall asleep"	0.127	0.001*	0.591	0.174	0.582	0.697	0.273	0.033*	0.013*	0.001*	0.176
"Helps me to concentrate"	0.077	0.055*	0.489	0.687	0.144	0.037*	0.813	0.155	0.818	0.796	0.134
"I enjoy doing it"	0.184	0.179	0.841	0.297	1.000	0.400	0.022*	0.315	0.548	0.264	0.130
"I am shy"	0.362	0.062	0.196	1.000	0.502	0.028	0.505	0.017*	0.198	0.074	0.023*
"Because my friends do it"	0.083	0.085	0.597	1.000	0.255	1.000	0.051*	0.597	0.008*	0.562	0.456
"Because my brother/sister does it"	0.079	0.000*	1.000	0.237	1.000	0.747	1.000	1.000	0.000*	0.003*	0.225

*Significant

attributed these habits to the feelings of those that indulge in them. Individuals that indulge in these non-nutritive habits are said to experience happy, warm, contented feelings as well as an increased level of security. [13,15]

Finger sucking and object biting were the habits found most to enable the children to concentrate better in school. This finding may explain the common habit of 'pen biting' which is commonly seen among children and even adults while studying. This reason was found to become increasingly important as the children increased in age, indicating the increasing need for concentration as their studies increased in difficulty over time. This is an important finding because it is essential for schoolchildren to concentrate in order to excel in their studies. In our study, finger sucking, cheek biting, tooth grinding and tongue sucking were all given as reasons enabling sleep, especially by the younger children. The ability to fall asleep while indulging in these habits however was found to reduce with age. The older schoolchildren did not consider this as much of a factor as those aged 6-9 years. This can be related to the increased maturity of children as they grow.

Shyness was a factor for the younger children, though not as much for the older children. Cheek biting and anterior tongue resting position were the habits most significantly associated with being shy. Children tend to either become bolder or use other less obvious means to indicate their shyness as they grow older.

Peer pressure and modelling were also significant factors associated with oral habits among our participants. Sibling influence was associated with such habits as finger sucking, tooth grinding and tongue sucking; while modelling and influence from friends was associated with chewing gum and tooth grinding habits. Thus, it may be said that some oral habits, like other habits in general, may be learnt or copied from others.

One of the limitations of our study is the cross-sectional design of the study which may be prone to memory bias, bearing in mind also that the respondents were children. However, this does not invalidate the findings of this study, but provides a basis for future prospective studies in this area, in our environment.

It is of note that many of the children did not know why they indulged in these habits, thus did not attribute their behaviour to any particular reason. This makes a case for collaboration of orthodontists with psychologists in the management of prolonged indulgence in non-nutritive oral habits

which are deleterious to the occlusion. Furthermore, this may also be a pointer to a possible genetic basis for some of these oral habits. In particular, some recent studies have reported that the digit sucking habit, may have a genetic basis. [21,22] Indeed, there is a need for further studies to explore the possibilities of behavioural genetics as possible aetiological factor for oral habits.

Conclusion

The younger children adduced various reasons particularly their ability to concentrate and shyness, to their indulgence in non-nutritive oral habits whilst the older participants particularly females adduced pleasure as the major reason. Majority of participants did not have any reason for these habits.

Recommendations

Based on the findings of this study, we recommend that orthodontists co-manage these patients with psychologists in order to achieve better patient cooperation and outcomes. In addition to this, there is a need for further studies to explore the possible role of genetics, as an aetiological basis for some of these oral habits.

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