

Original Article

## Prevalence of Habit Disorders In Children: An Experience From A Tertiary Care Hospital

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### Abstract

**Objective:** This study aimed to determine the prevalence of habit disorders in children visiting a paediatric outpatient department at a tertiary care hospital.

**Methods:** This descriptive cross-sectional study was conducted in the Pediatric Medicine Department of the CH & ICH, Multan, from June 24 to September 23, 2025. Two hundred children aged 1–12 years, of either sex, attending the outpatient department were consecutively enrolled after informed parental consent was obtained. Children with neurological and psychiatric disorders (e.g., autism spectrum disorder, attention deficit hyperactivity disorder, intellectual disability, cerebral palsy, and epilepsy) were excluded. Demographic data were recorded, and parents were asked about habit disorders: thumb sucking, nail biting, bruxism, and hair pulling. Data were analysed using SPSS version 25. Descriptive statistics in the form of mean ± SD for numerical data and frequency percentages for categorical data are described.

**Results:** The mean age was 4.8 ± 2.2 years, and 67.5% were males. Lack of maternal formal education was observed in 53% of the cases, and 32.5% had a positive family history of habit disorders. Most children belonged to a lower-middle socioeconomic status (72%). Habit disorders were identified in 30% of the children. Bruxism was the most common (11.5%), followed by thumb sucking (7.5%). Habit disorders were significantly more common in children ≥ 5 years of age than in those < 5 years of age (38.1% vs. 22.3%, p = 0.015).

**Conclusion:** Habit disorders affect nearly one-third of children in this population, with bruxism being the most common. Screening during routine periodic visits may facilitate early identification and provide parental counselling.

**Key Words:** Behaviour, Bruxism, Habits, Children.

### Introduction

The terminology "habit disorder" refers to a group of related disorders characterised by the occurrence of recurring, comparatively consistent behaviours that appear to occur without the subject's awareness.<sup>1</sup> These disorders include bruxism, nail biting, and thumb sucking in children.<sup>2</sup> Children acquire a variety of habits at various phases of their lives. Habit disorders are caused by a variety of biological and environmental factors.<sup>3</sup> These problems are associated with developmental issues, neurological impairments, and physical illnesses. The term "repetitive masticatory muscle activity" refers to bruxism, which is distinguished by mandible thrusting, bracing, or grinding of teeth.<sup>4</sup> Ten percent of the population worldwide suffers from bruxism.<sup>5</sup> Bruxism manifests as a child's nervousness and creates discomfort in the temporomandibular, muscular, and oral joints.<sup>6</sup> Nail biting is associated with anxiety, stress, or boredom and may coexist with attention or obsessive-compulsive traits. A common consequence of nail biting is paronychia, which is inflammation of the fingers or toes in ≥ one-third of the nail folds.<sup>7</sup> Thumb sucking is a common self-soothing behaviour in early childhood, often related to comfort, hunger, or insecurity. This usually resolves spontaneously by 4–5 years of age.<sup>8</sup> Hair-pulling is a body-focused repetitive behaviour linked to anxiety and emotional stress, and is more commonly observed in school-aged children and adolescents.<sup>9</sup> The complications of such habit disorders include dental malocclusion, gingivitis, sleep disturbances, low self-esteem, social withdrawal, speech difficulties, and reduced school performance.<sup>10</sup> Most parents misunderstand these behaviours as illnesses, follow quacks' advice, and administer their children dangerously unnecessary drugs. In a study by Farooq et al., the authors observed various habit disorders in paediatric patients (n=177) and revealed that 41.8% had bruxism, 22% had thumb sucking, 19.31% had nail biting, 11.8% had hair pulling, and 10.1% children had other habit disorders.<sup>11</sup> Kafle et al. conducted a study on common behavioural problems in children. They observed that out of 454 children, 12.1% had a habit of nail biting, and 35 (7.7%) had thumb sucking.<sup>12</sup>

We planned this study to assess the magnitude of behavioural habit disorder in children presenting at our local hospital. There is limited research on habit disorders in Pakistan. Establishing the prevalence of habit disorders in different age groups and socioeconomic settings will help in understanding the burden of this condition. Early detection of habit disorders will lead to timely behavioural interventions, preventing long-term consequences, such as social anxiety, dental issues, and emotional distress. The study findings will raise awareness among parents, teachers, and healthcare professionals regarding common habit disorders and strategies to manage them effectively.

#### Contributions:

MHK MAS - Conception, Design  
JR PA - Acquisition, Analysis, Interpretation  
MHK JR - Drafting  
JR MAS PA - Critical Review

All authors approved the final version to be published & agreed to be accountable for all aspects of the work.

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#### Institutional Review Board

##### Approval

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## Materials And Methods

This descriptive cross-sectional study was conducted at the Pediatric Medicine Department of The Children’s Hospital and Institute of Child Health, Multan, over a period of three months from June 24, 2025, to September 23, 2025, after approval by the Institutional Ethics Review Committee (No. 898/CH&ICH Multan, dated May 3, 2025). A total of 200 healthy children visiting the outpatient pediatric medicine department aged 1 – 12 years, either male or female, were consecutively enrolled in the study after informed consent from the parents. Children with psychiatric and neurological diseases (such as autism spectrum disorders, attention deficit hyperactivity disorders, epilepsy, intellectual disability, and cerebral palsy) were not included in the study.

Baseline demographic data on age, sex, maternal educational status (illiterate—who has never attended formal schooling and cannot read or write/literate—who has received formal education and can read and write), socioeconomic status (based on monthly household income), order of the child, and family history of similar behaviours (in first-degree cousins) were recorded. Parents were asked about the presence of habit disorders, that is, thumb sucking, nail biting, bruxism, and hair pulling.

A sample size of 200 participants was calculated through the WHO sample size calculator using the one proportion formula, assuming 11.86% prevalence<sup>11</sup> of hair pulling, 95% confidence interval, and 4.5% desired precision. Data analysis was accomplished through SPSS version 25, and normality was assessed through the Shapiro-Wilk test. Mean and standard deviation are reported for numerical data, and frequency (percentages) for categorical data. P-value  $\leq 0.05$  was taken as significant.

## Results

The mean age of the children was  $4.8 \pm 2.2$  years, and 67.5% (n=135) were boys. In 53% (n=106) of the cases, the mother did not have any formal education, and a family history of habit disorder was positive in 32.5% (n=65) of the children. Most of the children came from lower-middle socioeconomic status (n=144, 72%). The most common child order was third in 59% (n=118) [Table 1].

**Table 1: Characteristics of children presenting to the outpatient department (N=200)**

<b>Age (year),</b>	<b>mean <math>\pm</math> SD</b>	<b>4.8 <math>\pm</math> 2.2</b>
<b>Gender</b>	<b>n (%)</b>	
<b>Male</b>		135 (67.5)
<b>Female</b>		65 (32.5)
<b>Maternal Education</b>	<b>n (%)</b>	
<b>Illiterate</b>		106 (53.0)
<b>Literate</b>		94 (47.0)
<b>Family history of behaviour disorder</b>	<b>n (%)</b>	
<b>Yes</b>		65 (32.5)
<b>No</b>		135 (67.5)
<b>Socioeconomic Status</b>	<b>n (%)</b>	
<b>Low</b>		46 (23.0)
<b>Lower Middle</b>		144 (72.0)
<b>Upper Middle</b>		10 (5.0)
<b>Order of the child</b>	<b>n (%)</b>	
<b>First</b>		13 (6.5)
<b>Second</b>		40 (20)
<b>Third</b>		118 (59.0)
<b>Fourth</b>		21 (10.5)
<b>Fifth</b>		8 (4.0)

Habit disorders were identified in 30% (n=60) of the children. The most common habit disorder was bruxism (11.5%; n=23), followed by thumb sucking (7.5%; n=15) [Table 2].

**Table 2: Prevalence and type of habit disorder in children presenting to the outpatient department (N=200)**

	<b>Frequency</b>	<b>Percentages</b>
<b>Habit disorder – Yes</b>	60	30
<b>Type of Habit Disorder</b>		
<b>None</b>	160	70
<b>Thumb sucking</b>	15	7.5
<b>Nail biting</b>	14	7.0
<b>Bruxism</b>	23	11.5
<b>Hair pulling</b>	8	4.0

Habit disorders were significantly more common in children aged  $\geq 5$  years than in those aged  $< 5$  years (38.1% vs. 22.3%,  $p = 0.015$ ) [Table 3].

## Discussion

Individuals develop a variety of habits throughout their lives, most of which are harmless (such as thumb sucking and nail biting); however, a small number can be fatal and harmful, such as teeth grinding and hair pulling. Teeth grinding typically occurs throughout the first four years of childhood and is linked to daytime anxiety.<sup>13</sup> One reflex that can be observed in utero is thumb sucking.<sup>14</sup> While the majority of these habits are

a natural developmental component and do not meet the criteria for a problem, these habit disorders have differentials of mental retardation, obsessive-compulsive disorders, and pervasive disorders.

In our study, the mean age of the children was  $4.8 \pm 2.2$  years, and the majority of them were males. Thirty percent of the children had a habit disorder, and bruxism was the most common (11.5%), followed by thumb sucking (7.5%).

Thirty-nine percent of 403 school children, in a study by Mehdipour A et al, exhibited at least one parafunctional behavior. The most prevalent behavior was bruxism (22.6%), which was followed by nail biting (9.4%) and finger sucking (6.7%).<sup>15</sup>, except for our lower bruxism rate, this roughly matches our findings. In this study, children aged six to twelve were enrolled. The tendency that bruxism is most common was confirmed by a similar age range, and the total prevalence (~30–39%) was similar to the 30% in our group.

Diéguez-Pérez M et al. found that 28.9% of people had sleep bruxism in another investigation. The prevalence was greater in boys and peaked at age 5 years.<sup>16</sup> The prevalence of sleep bruxism among 1,900 patients in a Portuguese study was 20.7% for those aged 0–6 years and 19.4% for those aged 7–11.<sup>17</sup>

Given the differences in definitions and detection techniques, the bruxism rate (11.5%) in our study is slightly lower but still within a reasonable range. According to a 2024 meta-analysis, the prevalence of bruxism in children varies greatly depending on the technique and ranges from 14% to 20% worldwide.<sup>18</sup> When Farooq et al. looked at the prevalence of several habit disorders in children (n=177), they found that 41.81% had bruxism, 22.0% had thumb sucking, and 19.31% bit their nails.<sup>11</sup> Of the 454 children, Kafle et al. found that 35 (7.7%) sucked their thumbs and 12.1% bit their nails.<sup>12</sup>

**Table 3: Effect of demographic characteristics on distribution of habit disorders in children presenting to the outpatient department (N=200)**

Demographic Characteristics	Habit Disorder		p-value*	
	Yes	No		
Age	< 5-years	23 (22.3)	80 (77.7)	0.015
	≥ 5-years	37 (38.1)	60 (61.9)	
Gender	Male	37 (27.4)	98 (72.6)	0.249
	Female	23 (35.4)	42 (64.6)	
Maternal Education	Illiterate	26 (24.5)	80 (75.5)	0.073
	Literate	34 (36.2)	60 (63.8)	
Family history of behaviour disorder	Yes	20 (30.8)	45 (69.2)	0.869
	No	40 (29.6)	95 (70.4)	

The incidence of oral habits was 42.7% overall in a community-based cross-sectional study of 625 primary dentition pupils, with finger nail biting being the most prevalent practice (19.5%).<sup>19</sup> Both adult and paediatric populations were included in a systematic review conducted between 2003 and 2023. Worldwide, 21% of people have sleep bruxism and 23% have waking bruxism.<sup>20</sup> A survey of 255 children aged 6–12 years revealed that 41% of the participants had nail biting, followed by tongue thrust (29.4%), mouth breathing (15.9%), and thumb sucking (14.73%), which was the least common oral activity.<sup>21</sup>

Our findings of a higher incidence in children aged  $\geq 5$  years are supported by previous research, which has consistently demonstrated that habitual behaviours are common throughout early childhood, particularly from age 5 onwards. In several cohorts, bruxism often becomes the most prevalent single behaviour. Our 30% rate is a reasonable estimate, and the fluctuation in overall prevalence (19–43%) highlights how methodological variables, such as parent reports vs. clinical exams or community vs. hospital-based samples, can affect rates.

Since these behaviours do not interfere with a child's everyday activities, treatment is not necessary. If these behaviours impede social relationships and physical development, interventions are necessary. When a physical injury is noticed during a physical examination, a visit with a child psychologist and psychiatrist is necessary. Dental splints are necessary for harmful habits.<sup>22</sup> Pharmacological treatments for these prejudices are being tested. However, such therapies are not necessary for the majority of these habit disorders.<sup>23</sup>

The strengths of our study include the fact that it is one of the few studies in this area to examine the prevalence of common habit disorders in paediatric cases and to offer relevant data. By reducing confounding from known psychiatric or developmental problems, its well-defined inclusion and exclusion criteria enhanced the validity of the results. Patients were included consecutively, which reduced selection bias and increased the accuracy of prevalence estimation. The results support the necessity of routine screening and counselling during paediatric visits by bringing attention to a significant and frequently disregarded issue.

Some limitations of our study were that it was hospital-based and conducted at a single centre, which may not accurately reflect the overall paediatric population of the community. The sample size was minimal, which limited the subgroup analysis for particular habit disorders, although it was sufficient for preliminary estimates. Parent-reported data on habit disorders could be prone to underreporting or recall bias. Psychosocial, behavioural, and environmental aspects that could assist in explaining the underlying causes of these diseases were not thoroughly examined in this study.

## Conclusions

Habit disorders were prevalent in nearly one-third of children attending a tertiary care paediatric outpatient department, with bruxism being the most common. These findings emphasise the importance of incorporating routine screening and parental counselling during early childhood visits to enable prompt intervention and prevent potential complications.

## Author Information

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