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## PREVALENCE AND RISK FACTORS OF DENTAL CARIES IN CHILDREN OF DISTRICT LODHRAN

Qamrain Fatima<sup>1</sup>, Asghar Abbas<sup>1</sup>, Syed Hussain Ali Shah<sup>2\*</sup>

<sup>1</sup>Faculty of Veterinary and Animal Sciences, Department of Pathobiology, Muhammad Nawaz Shareef University of Agriculture, Multan

<sup>2</sup>Department of Zoology, University of Okara, Okara Pakistan

[asifsyed240@gmail.com](mailto:asifsyed240@gmail.com)

### Abstract

Dental caries is a significant oral health issue worldwide, especially among children. This cross-sectional study examines the prevalence of dental caries and associated risk factors in children aged 5 years and under in District Lodhran, Pakistan. Dental caries remains a problem affecting children's health, well-being and health care costs, despite progress in care. A structured questionnaire evaluated demographic profiles, oral hygiene, diet, and other potential risk factors. Hypotheses suggest high carbohydrate intake, poor hygiene habits, saliva composition and microbial populations influence caries risk. Socioeconomic status also factors in, as those from lower strata have less access to preventive care and tools. The study aims to understand the current oral health status of Lodhran children and identify the extent and factors linked to dental caries. These include age, gender, socioeconomic status, residence, family type, parental occupation, oral hygiene, and diet. Assessing prevalence and risks is important for guiding prevention and early intervention strategies to reduce caries and improve oral health. This research addresses an evidence gap, as caries prevalence and risks have not been previously studied in Lodhran. Results will inform targeted policies, programs and education for health professionals, policymakers and the public. Specifically, increasing children's access to care and information on dental importance to reduce high caries rates. Dental caries has multifactorial biological, behavioral and environmental causes. The goal is to propose interventions preventing caries at its source, primarily through promoting a healthy diet limiting sugars and proper dental hygiene routines as primary prevention.

**Keywords:** Dental, Children, Lodhran, Malfunction, Prevalence

### INTRODUCTION

Dental caries remains a significant public health issue affecting both children and adults

worldwide. As a widespread chronic disease, it imposes substantial clinical, social and economic burdens.

By compiling and analyzing the breadth of up-to-date research on this condition, this literature review aims to provide decision-makers and oral healthcare workers with a comprehensive understanding of dental caries (Bilal, 2021). It guides the formulation of targeted, multi-pronged initiatives addressing determinants from local to international levels to improve oral health equity worldwide. Regular updates of evidence can further optimize policies and interventions enhancing population oral wellbeing. In short, these reviews reveal that dental caries is common health problem among different age groups of children (Shah *et al.*, 2024).

A critical issue reviewed were regional variations in caries prevalence worldwide. Developing nations consistently report higher disease burdens compared to industrialized countries, highlighting access barriers faced by underprivileged communities (Marcenes *et al.*, 2013; Listl, 2015). For example, a global survey of over 60 countries found nearly 90% of 12-year-olds affected in parts of South Asia versus 64% in Western Europe (Righolt, 2018). Within countries too, marginalized populations such as indigenous, rural or low socioeconomic groups disproportionately experience worse oral health outcomes (Bagramian *et al.*, 2009; Mouradian *et al.*, 2000).

Understanding such disparities is vital to advocating for strengthened public healthcare models prioritizing underserved areas. A multi-country review identified water fluoridation and designated community programs as major contributors reducing gaps between high and low caries nations over the decades (Khurshid, 2010). However, more evidence is still needed from low to middle-income settings where resource constraints persist limiting implementation of such strategies (Khurshid *et al.*, 2010). Continuous monitoring of epidemiological trends through standardized surveillance systems like WHO's Global Oral Data Bank enables timely policy re-evaluation supporting disadvantaged regions falling behind in progress (Habel *et al.*, 2018).

A risk factor prominently discussed was socioeconomic status and its complex relationship with oral health. Across diverse settings, higher caries burdens consistently correlate with lower household incomes and maternal education levels globally (Rabiei *et al.*, 2012). Qualitative research further suggests cultural, linguistic and health literacy barriers may additionally exacerbate the issue amongst socioeconomically marginalized populations

(Masood *et al.*, 2016). However, comprehensive reviews argue against a solely deterministic outlook, supporting multi-level interventions addressing these root influences through empowering policies from water fluoridation to social welfare programs (Habel, 2015).

Another extensively researched risk factor is dietary habits, most prominently the frequent intake of free sugars. Biochemical models demonstrate how cariogenic bacteria metabolize fermentable carbohydrates to produce acid lowering the pH of dental plaque and enamel (Slayton, 2018). Longitudinal cohort studies provide compelling evidence that sugar consumption frequency significantly predicts future caries development across all ages (Amin *et al.*, 2017).

A final key factor reviewed is oral hygiene practices and plaque control methods. While effective mechanical plaque removal through regular toothbrushing remains fundamental to caries prevention, additional aids like interdental cleaners and topical fluorides provide complementary benefits supported by meta-analyses (Ditmyer *et al.*, 2011). School-based programs implementing such evidence-based approaches have demonstrated success in improving oral hygiene habits and reducing caries in high-risk populations (Zhang *et al.*, 2016). Implementing prevention strategies through pragmatic, multi-sectoral partnerships amplify population impacts according to global reports.

By broadening the discussion to include insightful case studies of vulnerable regions and populations, this literature review aims to offer a nuanced yet evidence-based understanding of the multifaceted issue. It recognizes the interplay between disease etiology and social environment necessitating holistic, equitable solutions over the long-term.

This study aims to determine the prevalence of dental caries and associated risk factors among children aged 6 years and under across different areas in District Lodhran, Punjab, Pakistan. The overarching research question is: What is the current prevalence of dental caries among children in District Lodhran, and what risk factors contribute to the development of dental caries among this population? The null hypothesis is that there is low prevalence of dental caries and no significant relationship between caries and identified risk factors across children under 6 years of age in District Lodhran. The alternative hypothesis is that there is high prevalence of dental caries and significant relationships between caries and risk factors across this group.

## **MATERIALS AND METHODS**

### **Study Area:**

The study was conducted in District Lodhran to investigate the prevalence and associated risk factors of dental caries among children across different places in District Lodhran

### **Study design:**

The research questions that were answered through a cross sectional study design. A structured questionnaire will be design to investigate the prevalence and associated risk factors.

### **Sample Size, Participation, and Consent:**

A representative sample using a known population equation of children among different places in District Lodhran was selected by employing a random sampling approach. An inform consent form was developed with the purpose of study for explanation and confidential responsibilities.

### **Inclusion Criteria:**

Children having the following characteristics was included:

- Age 0 to 5 years
- Living in District Lodhran
- Shows consent for participation

### **Exclusion criteria:**

Children having the following characteristics was excluded:

- Age of children above 5 years
- Children out of District Lodhran
- Children having fatal illness

### **Data Collection:**

A questionnaire had two components

The prevalence of dental by use if index.

The second component will look at the associated significant risk factors.

### **Statistical Analysis:**

Descriptive statistical analysis was carried out to find the prevalence of dental caries among children. To investigated potential risk factors for dental caries inferential analysis was used,

including a chi-square test and regression analysis. The study result given in extensive summary that includes information on the prevalence rates of dental caries among children and any significant correlation found with related risk factors.

## **RESULTS**

### **Prevalence of Dental Caries:**

A cross-sectional review configuration was utilized where dental assessments were led on 435 youngsters complete. The kids were sorted into various gatherings in light of age, orientation, and spot of home to check whether these qualities influence caries commonness. Age - Kids were parted into 0-5 years of age (n=300) gatherings. More established age could be a gamble factor. Orientation - Equivalent portrayal with 200 guys and 235 females. Distinctions in sexual orientation in oral well being propensities might influence risk. Home - Youngsters lived in metropolitan (n=170), rustic (n=210), or rural (n=55) regions. Area impacts admittance to dental consideration.

By gathering clinical caries information close by these segment factors, measurable investigation can uncover assuming specific gatherings have altogether higher chances of rot. Results might show the requirement for designated mediation programs. For instance, expanded training in provincial schools on the off chance that cultivating networks are recognized as high gamble.

This study gives data on a few potential financial gamble factors for dental caries among the kids, including parental occupation, pay, and maternal instruction level.

Parental occupation was classified into day to day work, development, domesticated animals cultivating, common help, confidential association, and own business. Youngsters from farming/worker foundations might confront more prominent obstructions to getting to dental consideration and instruction on oral cleanliness contrasted with middle class families.

Parental pay was dichotomized into  $\leq 20,000$  Pakistani Rupees (PKR) each month and  $> 20,000$  PKR each month. Lower pay levels limit the capacity to manage the cost of treatment, hardware like toothbrushes/glue, and nutritious eating regimens supporting oral well being.

Maternal training was defined into various levels from uneducated to post-advanced educations. Moms with more tutoring probably have higher oral well being education to give positive ways of behaving to their posterity.

By evaluating caries pervasiveness across these financial layers, scientists might recognize hindered networks needing general well being meditations. For example, offspring of

ranchers/workers or those from more unfortunate families might profit from financed preventive projects.

Headings for future investigations incorporate straightforwardly estimating factors like family pay, assessing other family pointers like number of kin or guardian turnover, and surveying maternal/fatherly instruction independently given contrasting effects on childbearing (Figure 1).

This study gives important pattern information on the review populace's socioeconomic. Dissecting caries recurrence across these socio-demographic angles can uncover high-need target bunches for customized oral medical services drives and assets (Table 1).

Table 1: All variables of examined children

Variables		No. of Children	No. of cases
		Examined	percentage
Age (Years)	2–3	135	68
	3–5	300	32
Gender	Male	200	45
	Female	235	55
Residence	Urban	170	39
	<b>Rural</b>	<b>210</b>	<b>48</b>
	Suburban	55	12
Parental occupation	Daily labor	75	17
	Cultivation	100	22
	Livestock farming	30	6
	Civil servant	56	12
	Private organization	92	21
	Own business	82	18
Parental income (rupees/month)	≤20,000	290	66
	>20,000	145	34
Maternal education level	Illiterate	84	19
	Primary	150	34
	SSC	88	20
	HSC	39	8
	Graduate	44	10
	Post-graduate	30	6

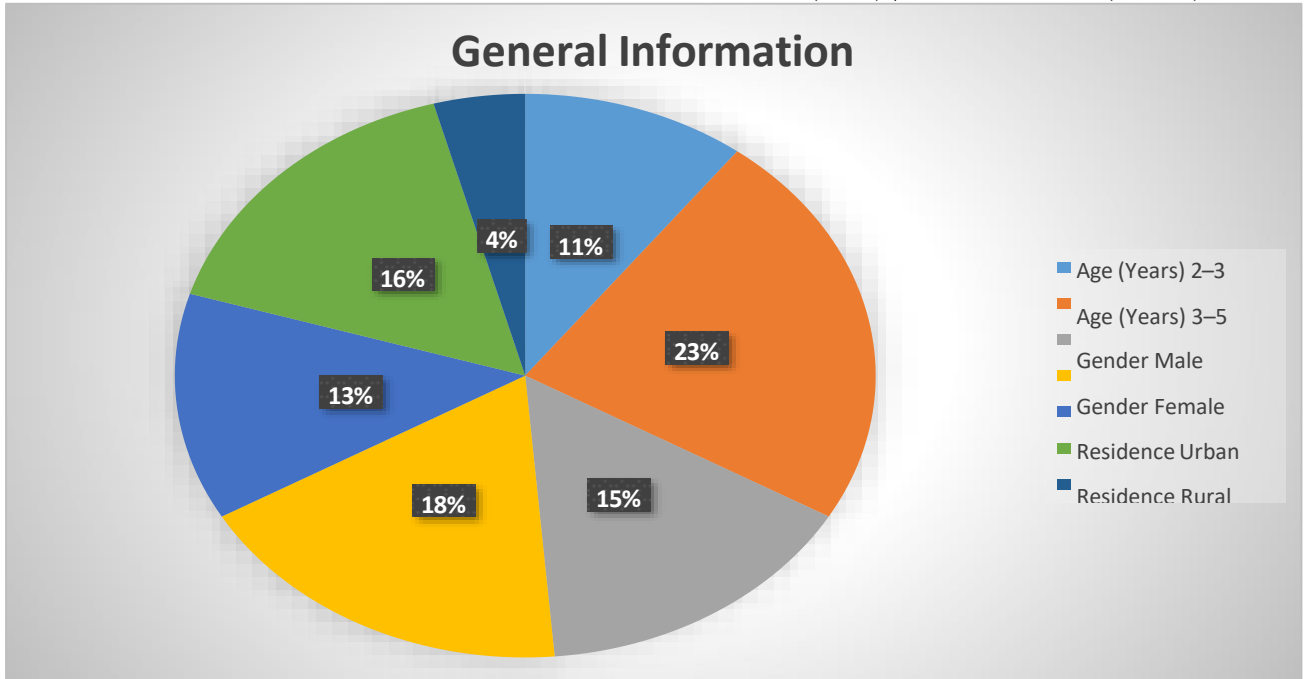


Figure 1: Age gender and residence of examined children

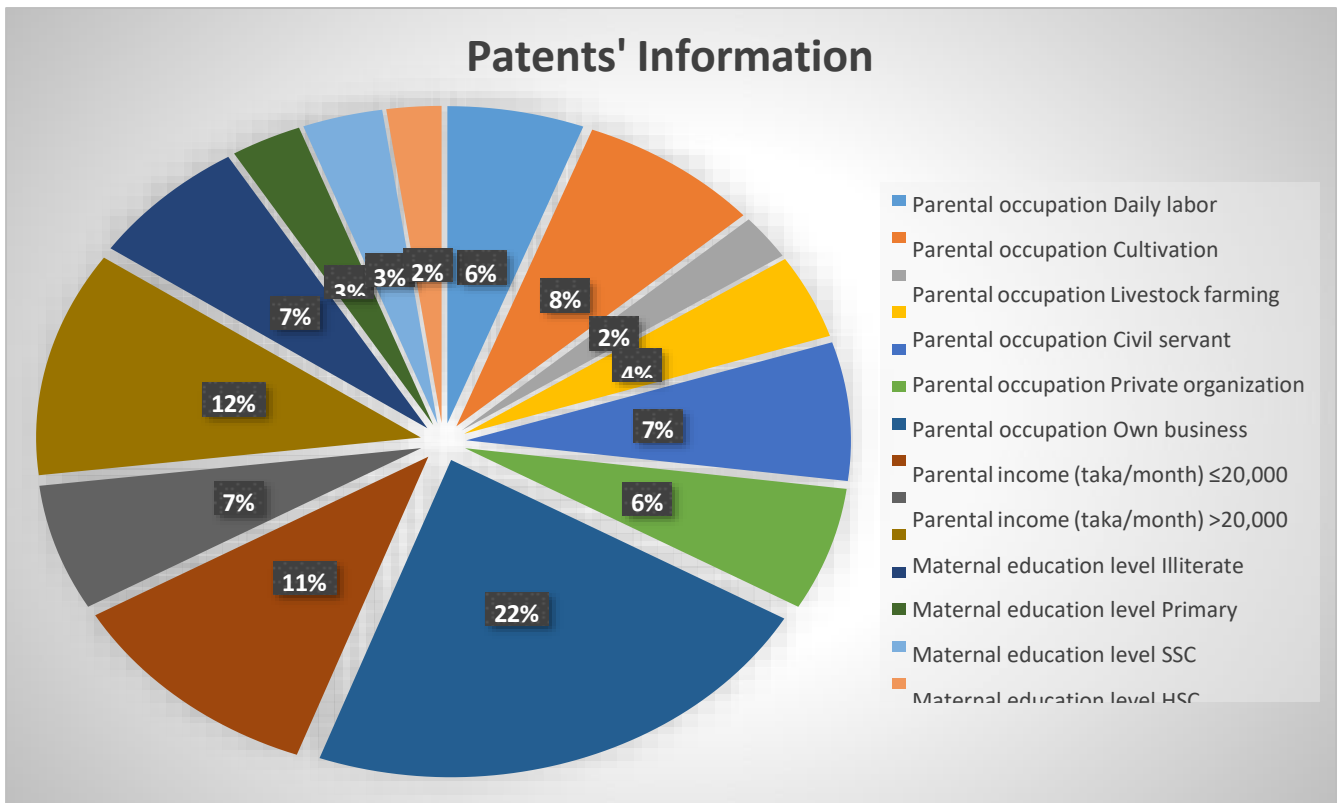


Figure 2: General information of the parents

Concerning propensities, most detailed cleaning teeth yet recurrence and method shifted impressively. Over a third brushed once every day just, underneath proposals. Length of brushing was frequently surged too. This leaves dental plaque in one piece for cariogenic biofilms to duplicate. Furthermore, unfortunate tongue cleaning propensities and absence of fixed schedules showed lacking guidance. Just 71 guardians exhibited cleanliness information, showing a chance for more prominent local area mindfulness programs.

Dietary utilization designs were likewise disturbing, with broad admission of cariogenic snacks high in free sugars like chocolates and chips, frequently consistently. Better drainage and soda pops are examples of refreshments that throw off the pH balance in the mouth. Some people did not breastfeed for the optimal amount of time. Regardless of natural protective qualities, caries rates were likely elevated given these dietary risks combined with subpar cleaning.

## **Habit of cleaning teeth**

This segment of the study gives a significant understanding into youngsters' oral cleanliness schedules and practices, which are significant gamble factors for dental caries advancement. By far most (410/435) of members were accounted for to clean their teeth, with toothbrush being the most widely recognized instrument utilized alone or alongside miswak or finger at 280 and 79 cases individually. Toothpaste or tooth powder alone or blended in with charcoal were the essential cleaning materials. Keeping up with ordinary oral cleanliness through brushing is necessary to sickness anticipation.

Assessing cleaning recurrence, north of 66% (340/435) of youngsters brushed once day to day which meets essential dental rules. Brushing two times a day or more by 95 kids demonstrates higher cleanliness consistence and possible lower caries vulnerability. Length of brushing likewise fluctuated impressively, from under a moment for 68 kids up to more than two minutes in 53 cases, with longer being particular to consider exhaustive plaque evacuation. In any case, 160 kids didn't determine steady brushing time, addressing training an open door. Everyday tongue cleaning was apparently interesting at just 30 cases, yet is significant for new breath and lessening oral microbial burden.

As far as when kids brushed, 268 did as such before breakfast which is suitable to clear food flotsam and jetsam before dinner utilization. Moreover brushing prior to resting around evening time by 268 and after breakfast/before rest by 42 youngsters addresses sound propensities. Be



that as it may, 75 kids brushed just while reminded, highlighting lower adherence. Consistently supporting legitimate timing could influence infection rates. Also, just 30/435 members tidied up their tongues day to day leaving space for improved familiarity with complete oral consideration.

Investigating parental figure information and family ancestry gave setting. Just 71 guardians exhibited knowledge of oral cleanliness procedures, connoting a requirement for well being advancement focusing on watchmen. In like manner, close to 66% or 280 youngsters had a place with families with dental issues beforehand, connecting with raised caries vulnerability. Hereditary and learned conduct factors inside the quick friendly climate incredibly shape oral well being results (Figure 2).

The different cleanliness ways of behaving, materials, schedules and familial qualities showed in this example populace request regard for enhance kids' oral well being. Generally, commonness information separated by these potential gamble covariates will offer clear mediation center regions. Local area dental drives ought to focus on well being education while sponsoring oppressed bunches moved by financial boundaries to ideal oral taking care of oneself (Table 2).

*Table 2: Cleanliness habit of the examined children*

Variables		No. of Children  Examined	Percentage
<b>Habit of teeth cleaning</b>	Yes	410	94
	No	25	6
<b>Teeth cleaning instrument</b>	Tooth brush	280	64
	Miswak	40	9
	Finger	36	8
	Tooth brush + miswak + finger	79	18
	Tooth paste	177	40
	Tooth powder	157	36

<b>Teeth cleaning material</b>	Tooth powder + charcoal	67	15
	Toothpaste + toothpowder + charcoal	34	7
<b>Frequency of teeth cleaning (times per day)</b>	Once	340	78
	≥Twice	95	22
<b>Teeth cleaning duration</b>	<1 min	68	15
	1 min	74	17
	2 min	80	18
	Not definite time	160	36
	>2 min	53	12
<b>Habit of tongue cleaning</b>	Yes	30	6
	No	405	94
<b>Teeth cleaning period</b>	Before breakfast	268	63
	Whenever remember	75	17

	<b>Before breakfast + Before sleep at night</b>	<b>50</b>	<b>11</b>
	After breakfast + Before sleep at night	42	9
<b>Parental oral hygiene knowledge</b>	Yes	71	16
	No	364	84
<b>Family oral problem</b>	Yes	280	64
	No	155	36

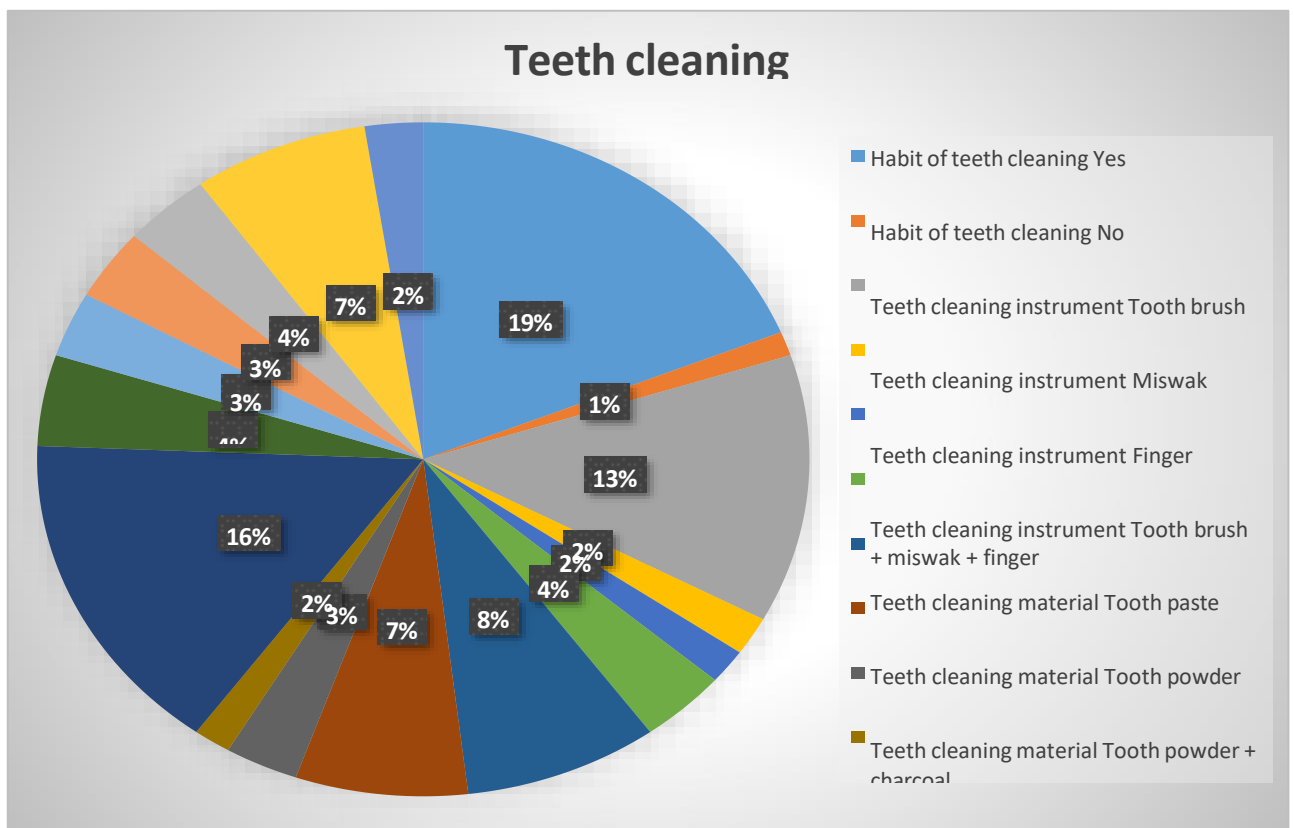


Figure 3: Cleanliness habit of the examined children

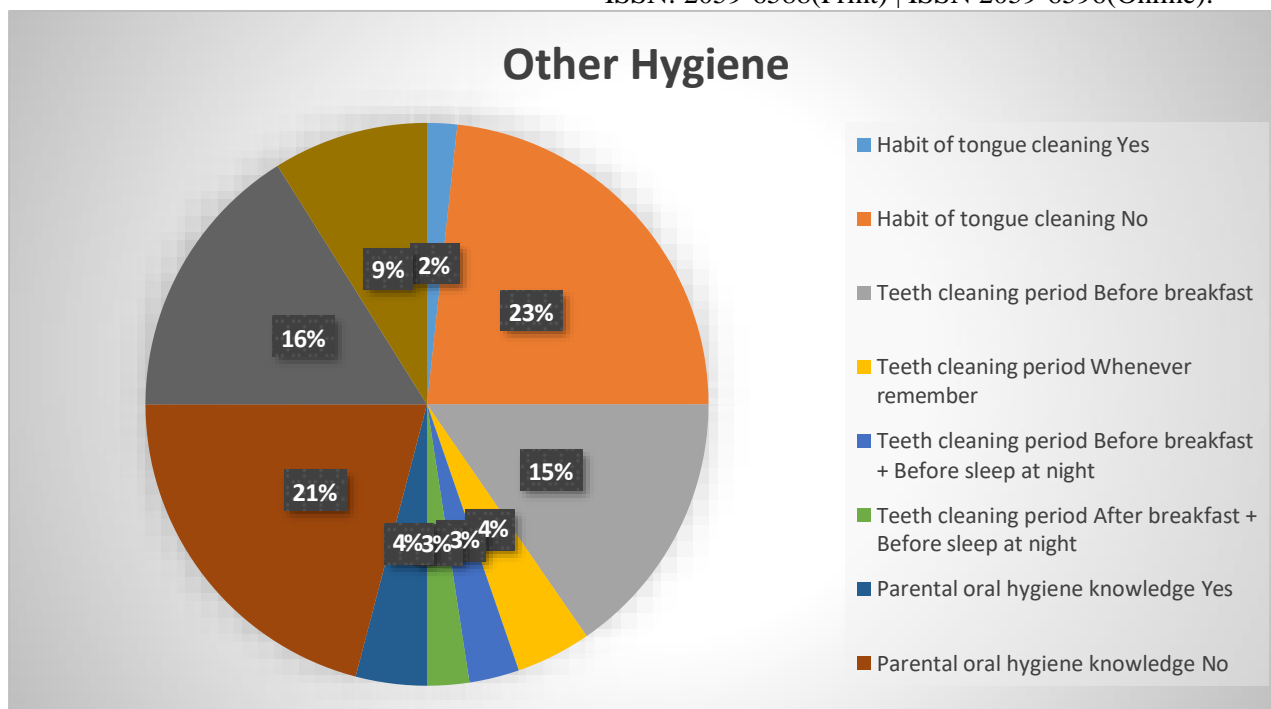


Figure 4: Other Hygiene

Concerning propensities, most detailed cleaning teeth yet recurrence and method shifted impressively. Over a third brushed once every day just, underneath proposals. Length of brushing was frequently surged too. This leaves dental plaque in one piece for cariogenic biofilms to duplicate. Furthermore, unfortunate tongue cleaning propensities and absence of fixed schedules showed lacking guidance. Just 71 guardians exhibited cleanliness information, showing a chance for more prominent local area mindfulness programs. Dietary utilization designs were likewise disturbing, with broad admission of cariogenic snacks high in free sugars like chocolates and chips, frequently consistently.

### Daily Eating

This piece of the research assessed youngsters' utilization examples of cariogenic food varieties and refreshments, which are emphatically embroiled in caries improvement. Concerning admission, by far most (410/435) detailed normal utilization. Further breakdown displayed over half (231/435) appreciated it day to day, representing the best danger to oral pH equilibrium and mineral substance because of incessant sucrose openness. Week by week (18/435) and periodic (92/435) chocolate utilization actually surpassed suggested rules. Likewise, the high pervasiveness of chip dietary patterns (350/435), with over half (224/435)

sharing day to day, demonstrates raised caries risk from delayed non-milk expelled nibble admission.

Soda utilization and recurrence conveyed comparable patterns, with 290/435 youngsters constantly drinking them, and almost half (132/435) doing as such consistently. Delayed acidic drink openness advances demineralization and acidogenic bacterial expansion in plaque and spit. Reassuringly, breastfeeding inception was inescapable at 418/435 kids however analyzing term uncovered fluctuating impressions. Over a third (153/435) got it for under a half year, possibly denying the oral cavity of defensive variables during a time of formative powerlessness. Nonetheless, 148/435 were breastfed for 25 three years which addresses valuable timing for in susceptibility move and diminishing utilization of carcinogenic pacifiers and food varieties.

With respect to drinking, the larger part (397/435) of kids fostered this sound propensity. In any case, an alarmingly high extent (339/435) consumed it improved as opposed to plain, counterbalancing defensive mineral substance with ferment able sugars. Legitimate oral well being training ought to beat added sugars down in any event, while consuming calcium-strengthened refreshments. Generally speaking, the widespread revealed admission of chocolate, chips, soda pops alongside much of the time improved milk presented carcinogenic perils requiring alleviation methodologies. Designated dietary advising should accentuate recurrence decrease and subbing treats with nutritious bites lower in refined carbs.

Of equivalent concern were social variables impacting the oral micro biome. Breastfeeding under two years in 153/435 kids didn't give an enduring benefit, requiring general well being projects to help expanded nursing lengths any place doable. Realizing societies quality enable to improved drinks and caloric-ally-thick luxuries, thus local area wide educational changes offer haunting challenges. Nevertheless, these population groups' teeth are as defensive as their shell-like appearance, and their caries rates could be affected by the frequent carcinogenic application of the items while neglecting spit less hygiene. In general, it can be stated that a complex counteraction strategy that is aimed at providing the necessary coordination between the societal trends and the environment outlook seems quite viable. This has led to the use of cross-sectional data to generate predictive measures of education for targeted preventive actions. (Table 3).

Table 3: Eating habit of the children

Variables		<b>No. of Children Examined (n = 435)</b>	<b>Percentage</b>
<b>Habit of eating chocolate</b>	Yes	410	94
	No	25	6
<b>Frequency of eating chocolate</b>	Everyday	231	53
	Weekly	18	4
	Occasionally	92	18
<b>Habit of eating chips</b>	Yes	350	80
	No	85	20
<b>Frequency of eating chips</b>	Everyday	224	51
	Weekly	57	13
	Occasionally	154	36
<b>Habit of drinking soft drinks</b>	Yes	290	66
	No	45	34
<b>Frequency of drinking soft drinks</b>	Everyday	132	30
	Weekly	44	10
	Occasionally	154	60
<b>Habit of drinking milk</b>	Yes	397	91
	No	38	9
<b>Properties of drinking milk</b>	With sugar	339	75
	Without sugar	96	25
<b>Habit of breastfeeding in early life</b>	Yes	418	96
	No	17	4
<b>Duration of breastfeeding (months)</b>	0–24	153	35
	25–36	148	34

	37-48	95	21
	≥49	39	10

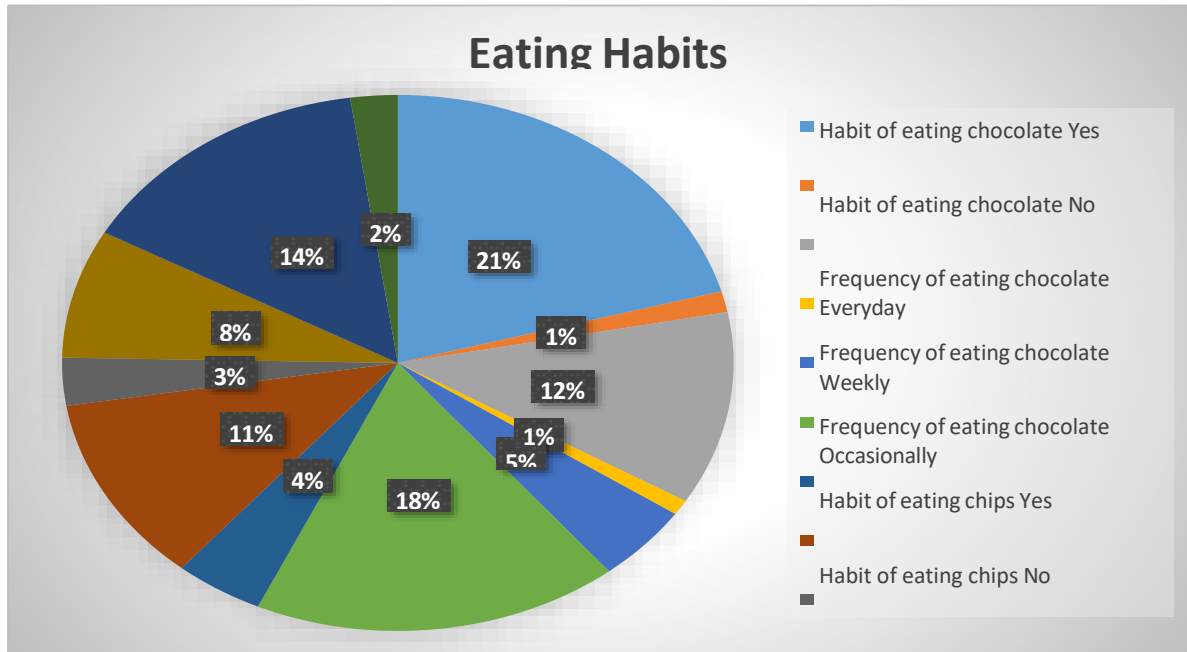


Figure 5 : Eating habit of the children (a)

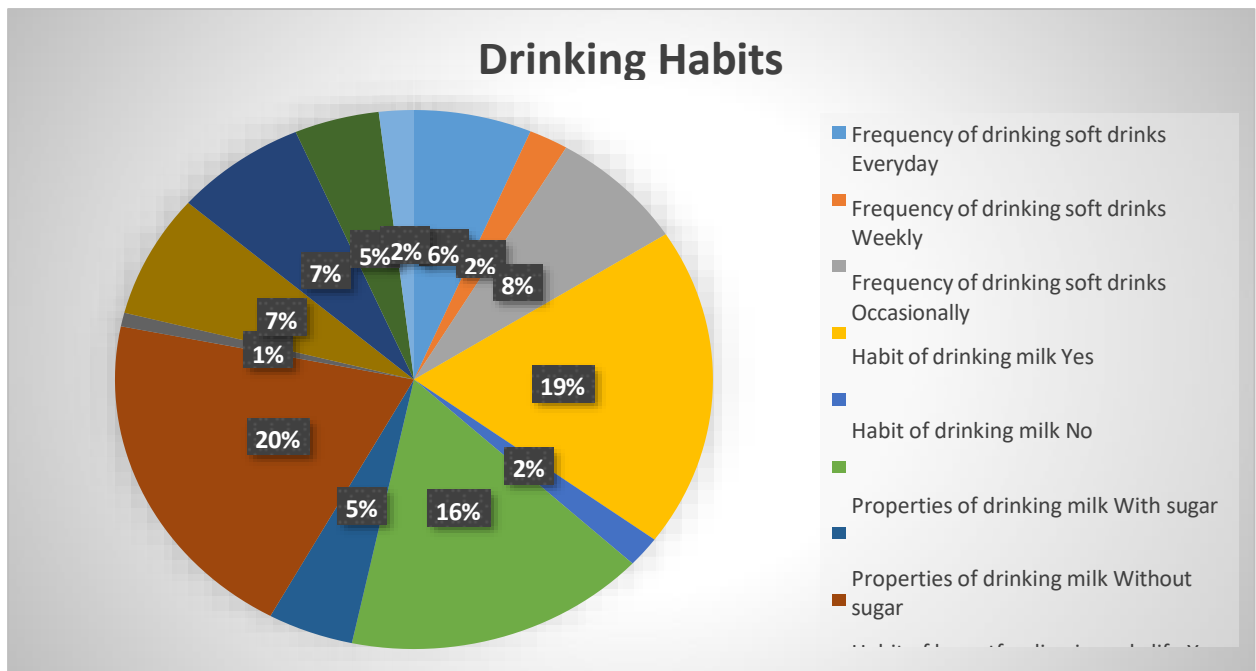


Figure 6: Eating and drinking habit of the children (b)

Overall, a variety of ecological, behavioral, and economical factors combine to affect the dental health of children in the area. It is anticipated that assisted avoidance efforts will address social, familial, and individual boundaries through training, care access initiatives, and advancements in oral health that are tailored to high-gambling groups. Appropriate staggered intercession procedures can be developed using caries information analyzed against variables. As the time for mediation approaches, a multi-layered approach is warranted due to the intricate exchange of random factors seen. Making changes to one's way of life can be extremely challenging when societal norms are involved. Although education can shed light on problems, it is also anticipated that natural changes will aid in conducting change. Free or sponsored dental services combined with outreach initiatives could help families that are at risk due to poverty maintain access limits.

### **Risk Factors of Dental Caries**

This assuring cross-sectional review provided vast clue to usual, direct, natural, and social bet determinations concerning oral health results among kids residing in Area Lodhran of Pakistan. With everything taken into account outlining could separate the trade between these components to educated frail subgroups justified need intercession. Starting with intrinsic properties, age implied the trademark peril incline; extra cautiously designated youths resulting in 8-10 years plus the subsequent late mixed dentition stage possessing a significantly increased sensitivity long-term. Harry and Tomato again did not seem to tread on such a teaching strategy that supplemented direction with irregularities for the implementation of exclusive programming. However, the ability of family history was genetic susceptibility, as 280 of the adolescents reported oral problems among their family members. These were contained in financial profiles to capture these thoughts by subjects in context-specific ways. Low system payoff and maternal influence required permission while an advancement/work clash inhibited sound thought. Regarding preferences, a shift in an unfavorable level of neatness consistence emerged as a potential opportunity. In this regard, brushing deficiencies such as irregularity, consolidated term, and inconsistent timing failed to affect plaque, leaving it perfect for cariogenic biofilm repetition.





All the same, endless obligation referring to proper technique direction appeared to be an issue of many who seemed to lack adequate time division. Regarding the gingival condition near brushing, the general oral self care managing oneself losses were infrequent normal tongue scrubbing, and no existing standard cleaning programs. At the familial center, gatekeeper obliviousness proceeded clearly to a preventable degree since only 71 watchmen were distinct who knew endorsed practices to show. Lifestyle plans of attacking revealed severe down-sides by means of a fuselage carriage and extreme cariogenic structure propinquity and emboldened augmentation of nourishing judgments such as those linked with milk. The quantities of free sugars in the refined snacks ceded affirmation without control for a large extent. Similarly, length of breastfeeding was revealed to have a fantastic opportunity to improve through increased, general, unestablished terms bringing benefits in widened. It was consciousness to maintain with the social change and the luxuries or other expectancies therefore needed some level of thinking. Overall sugar transparency across diverse aspects disrupted the core detrimental baseline harmony. Neighborhood determinants emerged gradually through hidden measures. It is shown that metropolitan related with higher bet profiles may originate from the fast-moving plans, obesogenic condition and limited social connection emerged different from the rural usual which support self-sufficient life.

Furthermore, distant places are too hard to locate for the purpose of the transparency interrupts to mind. Last, principles for cariogenic food and for deficient oral tidiness on data showed that

normal changes are direct required for change. In view of each of these arguments, some high-need groups explained rationales for focusing on specific increases, such as encouraging schoolchildren to integrate sugars without any limit or guidance on changed diets. Families with oblivion at the helm cultivated/manual ways to live and low wages sustained essential oral reasoning and gift education. Some of the country settlements regarding creative compact programming to redesign organization availability are discussed in this article. Instead of separating targets, mediation should generally employ a syndetic approach that treats individual, cultural, familial, and ecosystemic characteristics mutually. Preventive program organizers are able to organize significant staggered procedures that are tailored to the requirements of the local area with additional examination of caries information defined by risk covariates.

## **DISCUSSION**

A total of 435 children were clinically examined across age groups, gender and home location to assess dental caries prevalence in District Lodhran, Pakistan. Key findings were that older children aged 8-10 had higher risk due to longer exposure time for caries development. Moreover, 280 children reported a family history of oral issues, demonstrating genetic susceptibility. Home location also impacted oral health, with urban children at greater risk possibly due to fast lifestyles limiting access. Rural communities faced geographic barriers to services too. Financial factors played a role as lower income families earning  $\leq 20,000$  PKR monthly with less maternal education had fewer resources for proper treatment and supplies supporting oral health. Children from farming or labor backgrounds faced more barriers to care and education on oral cleanliness. Regarding habits, most reported brushing teeth but frequency and method varied significantly. More than a third brushed once daily only, below recommendations. Dietary patterns were also concerning, with high intake of cariogenic snacks containing free sugars like chocolates and chips, often daily. Better drainage and sodas disrupt pH balance. Several factors combine to impact children's dental health in the area. Tailored prevention efforts addressing social, familial and individual barriers through training, access initiatives and advances in oral health are needed. A multi-level approach is warranted due to intricate interactions of random factors. Changes to diet and resources combined with outreach could help at-risk families. Similar to different investigations, age was viewed as a huge gamble factor, with more established youngsters (8-10 years) confronting higher caries predominance because of longer openness time (Yon *et al.*, 2015; Bilal<sup>a,b</sup> *et al.*, 2024). Be that

as it may, a few examinations tracked down higher rates among more youthful youngsters, showing populace contrasts (Erwin *et al.*, 2022).

Financial hindrances like lower parental training and pay confining admittance to mind and supplies matches other emerging countries (Khuram *et al.*, 2024; Afzal *et al.*, 2024). Be that as it may, discoveries changed on impact of parental occupation which might rely upon nearby modern designs (Zerman *et al.*, 2022).

Deficient brushing rehearses agree with past examination ascribing high sickness weight to less-than-ideal cleanliness (Sattar *et al.*, 2024; Ritwik *et al.*, 2020). However, they conceded it was hardly surprising that influenced by the financial status, ecological difference may change components relating the areas (Dean, 2021).

Presence of large quantity of sugars in the snack and the refreshment is also in concordance with the roles of these products in the world that promotes caries as it has been published by Jalvevik *et al.*, (2022). Nevertheless, social practices do inform explicit dietary threats that prescribe localized responses according to the following sources (Vujicic, 2019; Buchanan *et al.*, 2019).

In a more general form, this study links up with greater population studies and offers considerably more variability across provinces on determinants. When one goes to correlation with other settings, locally applicable intercessions are enriched by cross-contextual oriented understanding. Some exploration tracked down no massive distinction in caries by orientation (Nuvvula & Mallineni., 2015), while others announced higher pervasiveness among guys (Chung *et al.*, 2030).

As per diet utilization of sports/caffeinated drinks containing sugar and causticity were distinguished dangers in a Canadian example (Nota *et al.*, 2020), featuring the need to consider socially important wellsprings of cariogenic consumption. According to relational peculiarities, the bigger family sizes and more noteworthy number of kin were associated with expanded caries in an Iranian partner (Stensson *et al.*, 2021), highlighting what social determinants inside the family mean for oral well-being results.

The study's implications extend beyond District Lodhran, offering insights that could be applicable to other regions with similar socioeconomic and demographic profiles. The findings are expected to contribute to the global body of knowledge on dental caries and support the

development of universal strategies for preventing and managing this pervasive oral health issue. Through collaborative efforts involving local communities, healthcare professionals, and policymakers, the study aspires to foster a sustainable and impactful improvement in pediatric oral health.

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