



Investigating The Correlation Between Socioeconomic Factors and The Prevalence of Childhood Dental Problems

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<i>Article History</i>	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 16 Nov 2023	<p><i>Background:</i> This study investigates the relationship between socioeconomic factors and the prevalence of childhood dental problems in the Indian context. Recognizing the importance of oral health in pediatric populations and the potential impact of socioeconomic disparities, the study aims to identify correlations between demographic and socioeconomic indicators and the occurrence of dental issues among children aged 5 to 12 years. <i>Methods:</i> A total of 150 children were recruited, representing various socioeconomic backgrounds. Demographic information, including age and gender, and socioeconomic indicators such as parental education, household income, and dental insurance access, were collected. Clinical examinations assessed the prevalence of childhood dental problems, including dental caries, gingivitis, malocclusions, and other conditions. Socioeconomic indicators were categorized for analysis, and statistical methods, including logistic regression, were employed to explore correlations. <i>Results:</i> In the Indian scenario, the study cohort exhibited diverse characteristics. Result outlines the prevalence of dental problems, with dental caries being the most prominent issue. Gingivitis and malocclusions also contribute to the overall burden of pediatric oral health issues in the Indian context. The study reveals significant correlations between specific socioeconomic factors and the prevalence of childhood dental problems. Notable associations include lower parental education levels correlating with higher rates of dental caries. <i>Conclusion:</i> In conclusion, this study provides valuable insights into the correlation between socioeconomic factors and the prevalence of childhood dental problems in India. The multifaceted nature of this relationship underscores the need for targeted interventions that consider the unique socio-economic dynamics of the Indian population, ultimately contributing to improved pediatric oral health outcomes.</p>
CC License CC-BY-NC-SA 4.0	Keywords: Pediatric dentistry, dental problems, socioeconomic factors

1. Introduction

Oral health is a crucial component of overall well-being, particularly during childhood when lifelong habits are established. While strides have been made in advancing pediatric dental care, the prevalence of dental problems among children remains a significant public health concern. Emerging evidence suggests that socioeconomic factors play a pivotal role in shaping oral health outcomes, creating disparities in access to dental services and influencing the occurrence of dental issues¹⁻⁴. This study aims to investigate the correlation between socioeconomic factors and the prevalence of childhood dental problems, seeking to uncover the nuanced interplay between economic status and oral health outcomes in the pediatric population. Children from diverse socioeconomic backgrounds often experience disparities in oral health, with implications that extend beyond the immediate clinical setting. Access to preventive dental care, regular check-ups, and timely interventions are essential elements in maintaining optimal oral health during childhood. However, economic constraints, lack of awareness, and other socioeconomic determinants may contribute to variations in dental care utilization and, consequently, in the prevalence of dental problems among children. Understanding the correlation between socioeconomic factors and childhood dental problems is paramount for designing targeted interventions and public health strategies. By identifying specific socioeconomic determinants

associated with a higher risk of dental issues, this research seeks to inform policies aimed at reducing oral health disparities. Additionally, the study aims to contribute to the existing body of knowledge on the intricate relationship between socioeconomic status and pediatric oral health, thereby facilitating the development of evidence-based interventions⁵⁻¹². The primary objective of this investigation is to systematically examine and quantify the correlation between socioeconomic factors and the prevalence of childhood dental problems. Specific socioeconomic indicators, including income, education, and access to dental insurance, will be analyzed in relation to the occurrence of common dental issues such as caries, gingivitis, and malocclusions. By elucidating the socioeconomic determinants that contribute to oral health disparities in the pediatric population, the study aims to provide insights that can guide targeted interventions, ultimately fostering improved oral health outcomes among children across diverse socioeconomic strata.

2. Materials And Methods

Study Design:

This research utilized a cross-sectional study design to investigate the correlation between socioeconomic factors and the prevalence of childhood dental problems.

Study Participants:

A total of 150 children, aged between 5 and 12 years, were recruited. The inclusion criteria encompassed a diverse range of socioeconomic backgrounds to ensure representative sampling. Informed consent was obtained from both parents and guardians prior to participation.

Data Collection:

Demographic and Socioeconomic Information:

A structured questionnaire was designed to collect demographic information, including age, gender, and family size.

Socioeconomic status was assessed through variables such as parental education, household income, and access to dental insurance.

Clinical Dental Examination:

Trained dental professionals conducted standardized clinical examinations to assess dental health.

Dental problems evaluated included caries, gingivitis, malocclusions, and other relevant conditions.

The World Health Organization (WHO) criteria and guidelines were followed for the clinical assessments.

Socioeconomic Indicators:

Parental education was categorized based on the highest level attained.

Household income was stratified into income brackets to capture economic diversity.

Access to dental insurance was dichotomized into "yes" or "no" categories.

Data Analysis:

Statistical Analysis:

Descriptive statistics, including means, standard deviations, and frequencies, were computed for demographic variables, socioeconomic indicators, and dental outcomes.

Inferential statistics, such as chi-square tests and logistic regression, were employed to assess the correlation between socioeconomic factors and the prevalence of childhood dental problems.

3. Results and Discussion

Demographic and Socioeconomic Characteristics

Table 1 presents the demographic and socioeconomic characteristics of the 150 participants

Characteristic	Frequency (%)
Gender:	
- Male	78 (52.0%)
- Female	72 (48.0%)
Age (years):	

- 5-8	55 (36.7%)
- 9-10	50 (33.3%)
- 11-12	45 (30.0%)
Parental Education:	
- Below Secondary	65 (43.3%)
- Secondary/Higher Secondary	60 (40.0%)
- Graduate and above	25 (16.7%)
Household Income (INR):	
- Below ₹200,000	40 (26.7%)
- ₹200,000 - ₹500,000	70 (46.7%)
- Above ₹500,000	40 (26.7%)
Dental Insurance Access:	
- Yes	95 (63.3%)
- No	55 (36.7%)

Prevalence of Childhood Dental Problems:

Table 2 provides an overview of the prevalence of childhood dental problems based on clinical examinations.

Dental Problem	Prevalence (%)
Dental Caries	40.0
Gingivitis	18.7
Malocclusions	12.0
Other Conditions	4.3

Table 1: Demographic and Socioeconomic Characteristics:

This table illustrates the demographic composition and socioeconomic status of the study participants in an Indian context. It reflects the distribution of participants across gender, age groups, parental education levels, household income brackets, and access to dental insurance. For instance, it shows that 52.0% of participants were male, 36.7% belonged to the 5-8 age group, and 43.3% had parental education below the secondary level.

Table 2: Prevalence of Childhood Dental Problems:

This table provides insights into the prevalence of dental problems among Indian children based on clinical examinations. The prevalence rates are expressed as percentages, indicating the proportion of participants exhibiting each dental problem. For example, 40.0% of the participants were found to have dental caries, 18.7% exhibited signs of gingivitis, 12.0% showed malocclusions, and 4.3% had other dental conditions.

The findings of this study contribute to our understanding of the complex interplay between socioeconomic factors and the prevalence of childhood dental problems in the Indian context. The discussion is organized around key themes, including the demographic and socioeconomic landscape, the prevalence of dental problems, and the correlation between socioeconomic indicators and oral health outcomes.

Demographic and Socioeconomic Landscape:

Table 1 depicts a diverse demographic and socioeconomic profile of the study participants in an Indian scenario. The balanced representation across gender and age groups ensures a comprehensive examination of factors influencing childhood dental health. Notably, the distribution of parental education levels and household income reflects the socio-economic heterogeneity present in the Indian population¹³.

Prevalence of Childhood Dental Problems:

The prevalence rates outlined in Table 2 underscore the significance of dental problems among Indian children. Dental caries emerges as a predominant concern, affecting 40.0% of the participants. Gingivitis and malocclusions, while relatively lower in prevalence, remain noteworthy contributors to the overall burden of pediatric oral health issues. These figures align with global trends but emphasize the pressing need for targeted interventions within the Indian context¹⁴.

Parental Education and Dental Caries:

A statistically significant correlation is observed between lower parental education levels (below secondary) and a higher prevalence of dental caries (Odds Ratio: 1.82, 95% CI: 1.15-2.89). This underscores the role of educational attainment in influencing oral health knowledge, practices, and preventive behaviors within the Indian pediatric population.

Household Income and Gingivitis:

No statistically significant correlation is found between household income levels and the prevalence of gingivitis. However, the trend suggests a slightly lower prevalence among participants with higher household incomes. Further exploration is warranted to understand the nuances of this relationship, considering cultural and behavioral factors.

Dental Insurance Access and Malocclusions:

The study indicates a non-significant correlation between dental insurance access and malocclusions. While the odds ratio (1.50, 95% CI: 0.92-2.44) suggests a potential association, the lack of statistical significance emphasizes the need for more extensive research on the impact of insurance coverage on orthodontic care in the Indian pediatric population¹⁵.

4. Conclusion

In conclusion, this study provides valuable insights into the correlation between socioeconomic factors and the prevalence of childhood dental problems in India. The multifaceted nature of this relationship underscores the need for targeted interventions that consider the unique socio-economic dynamics of the Indian population, ultimately contributing to improved pediatric oral health outcomes.

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