

Original Article

Preventive vs. Restorative Dental Care Needs in Underprivileged Children: A Multi-Site, Community-Based Cross-Sectional Study in Lahore

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ABSTRACT

Background: Dental caries and related oral conditions remain major preventable health problems among socioeconomically disadvantaged children, particularly where access to routine preventive dental services is limited. **Objective:** This study aimed to evaluate and compare preventive and restorative dental care needs among school-going children from an underprivileged urban community in Lahore, Pakistan. **Methods:** A retrospective secondary analysis was conducted using anonymized data from routine community dental outreach screening of 196 children aged 5–15 years. Clinical indicators included Plaque Index, Gingival Index, demineralization lesions, DMFT/DEFT scores, cavitated lesions, dental pain or sensitivity, active infection, and previous restorations. Behavioral and contextual variables included brushing frequency, sugary snack intake, parental education, and BMI-for-age category. Descriptive statistics, subgroup comparisons, and exploratory binary logistic regression were used to assess factors associated with restorative dental care need. **Results:** Preventive care needs were identified in 86.2% of children, while restorative care needs were present in 72.4%. Abnormal plaque accumulation affected 82.6%, gingival inflammation 76.4%, demineralization 48.5%, cavitated lesions 69.4%, dental pain or sensitivity 24.0%, and active infection 15.3%. Only 6.1% had previous restorations. Higher Plaque Index, frequent sugary snack intake, brushing less than once daily, and low parental education were significantly associated with greater restorative care need. **Conclusion:** The findings show a substantial coexistence of early preventable disease and advanced untreated restorative morbidity, supporting integrated school-based oral health strategies combining prevention, parental education, screening, and referral for restorative care. **Keywords:** Preventive dentistry; Restorative care; Dental caries; Schoolchildren; Oral health inequality; Lahore; Cross-sectional study.

INTRODUCTION

Dental caries remains one of the most common preventable oral diseases affecting children worldwide and continues to impose a disproportionate burden on socioeconomically disadvantaged populations. Although the disease can be substantially reduced through regular oral hygiene, appropriate fluoride exposure, dietary modification, and early preventive dental contact, children living in low-resource communities often receive dental care only after symptoms such as pain, cavitation, or infection have developed (1,2). This delayed pattern of care reflects a broader dependence on restorative and emergency-based services rather than preventive oral health models, particularly in low- and middle-income countries where access to affordable dental services, parental oral health literacy, and school-based preventive programmes remain limited (3,4). As a result, disease that could initially be

controlled through low-cost preventive interventions frequently progresses to irreversible dental pathology requiring fillings, extractions, or other resource-intensive restorative procedures (5,6).

The burden of untreated dental disease is especially relevant among school-going children in underprivileged urban communities, where poverty, overcrowding, limited sanitation, low parental education, and restricted access to professional dental services interact to worsen oral health outcomes. In such settings, oral health is often deprioritized because families must first address immediate economic and survival needs, while dental symptoms may be normalized until they interfere with eating, sleeping, school attendance, or daily functioning (7,8). Dietary patterns further intensify this risk, as children from low-income households may have greater exposure to inexpensive sugar-rich foods and fewer opportunities for supervised brushing, fluoride application, or routine dental screening (9). These structural disadvantages contribute not only to higher caries prevalence but also to unequal use of preventive and restorative dental services, reinforcing oral health inequities across childhood and adolescence (10,11).

For public health planning, it is important to distinguish between preventive dental care needs and restorative dental care needs. Preventive needs reflect early and potentially reversible indicators such as plaque accumulation, gingival inflammation, and enamel demineralization, while restorative needs reflect more advanced disease such as cavitated caries, dental pain, sensitivity, infection, or previous untreated lesions requiring operative management. This distinction is clinically important because preventive indicators identify opportunities for early, low-cost intervention, whereas restorative indicators represent later disease stages with greater treatment complexity and financial burden. Previous evidence supports the value of prevention-oriented dental care models, including oral health education, supervised toothbrushing, fluoride-based interventions, fissure sealants, and routine screening, in reducing the long-term burden of dental disease and improving equity in underserved populations (12–14).

Despite the recognized importance of prevention, locally relevant evidence comparing preventive and restorative dental care needs among underprivileged schoolchildren in Pakistan remains limited. Available literature has described oral health challenges in vulnerable groups, but fewer studies have quantified the relative burden of early reversible disease and advanced restorative disease within the same pediatric community sample. This knowledge gap limits the ability of schools, outreach programmes, clinicians, and policymakers to prioritize resources effectively. In Lahore's low-income urban settlements, where access to regular dental care is constrained, such comparative data are needed to determine whether the dominant burden lies in early preventable pathology, established restorative disease, or both.

Using a PICO-oriented framework, the population of interest in this study was school-going children aged 5–15 years from an underprivileged urban community in Lahore; the primary clinical context was exposure to oral hygiene, dietary, and sociodemographic risk factors; the comparison focused on preventive versus restorative dental care needs; and the outcomes were the prevalence of these needs and their association with selected behavioral and parental factors. Therefore, this study aimed to evaluate and compare preventive and restorative dental care needs among school-going children from an underprivileged community in Lahore and to explore oral hygiene, sugar intake, and parental education as factors associated with restorative dental care requirements.

MATERIALS AND METHODS

This study was conducted as a retrospective secondary analysis of anonymized data obtained through routine community dental outreach and screening activities among school-going children from an underprivileged urban community in Lahore, Pakistan. The study used a cross-sectional observational design because the clinical and behavioral information reflected each participant's oral health status at a single screening point. The design was appropriate for estimating the burden of preventive and

restorative dental care needs and for examining associations between oral hygiene, dietary practices, parental education, and restorative dental morbidity among children in a low-resource school setting.

The study was carried out at Door of Awareness School, located in an economically disadvantaged urban area of Lahore, Pakistan. The school was selected because it provided direct access to children from a socioeconomically vulnerable community in which routine preventive dental care is limited. Data were collected during organized dental outreach screening activities conducted within the school premises. The screening process was arranged to minimize disruption to academic activities while allowing eligible children to undergo oral examination and completion of a structured behavioral and nutritional assessment. The analytical phase included data cleaning, coding, statistical analysis, and interpretation after completion of field data collection.

The target population comprised school-going children aged 5–15 years who were enrolled at the selected school and present on the day of dental screening. Children were eligible for inclusion if they were within the specified age range, physically present during the outreach activity, and had parental or guardian consent for participation in screening. Children were excluded if they were undergoing active or acute dental treatment at the time of assessment, if their current treatment status could interfere with classification of preventive or restorative needs, or if they were unable to cooperate sufficiently for safe and reliable oral examination. A convenience sampling approach was used, and all eligible children available during the outreach screening period were considered for inclusion.

Data collection combined clinical oral examination with structured self-reported or caregiver-supported behavioral information. The clinical assessment was performed by trained dental examiners using sterile disposable mouth mirrors, probes where appropriate, and adequate illumination under field screening conditions. Oral examination procedures followed standardized visual-tactile screening principles for community-based dental assessment. Preventive oral health indicators included visible plaque accumulation, gingival inflammation, and early enamel demineralization identified as white or brown spot lesions. Plaque status was assessed using a plaque index or simplified oral hygiene scoring approach, while gingival inflammation was assessed using gingival health criteria consistent with Loe and Silness-based grading. Restorative care needs were identified through the presence of cavitated carious lesions, reported dental pain or sensitivity, clinical signs of active infection such as swelling or pus, and history or presence of previous restorations. Caries experience was summarized using DMFT/DEFT scores according to dentition status.

Behavioral and contextual data were collected using a structured screening and nutritional assessment form adapted for the local school setting. The form recorded age, sex, oral hygiene practices, frequency of toothbrushing, cleaning method, supervision of brushing where applicable, frequency of sugary snack intake, number of daily meals, water intake, previous dental visits, and parental education level. Anthropometric measurements, including height and weight, were recorded using standard measuring equipment, and BMI-for-age status was classified using appropriate age-based growth references. Parental education was used as a proxy indicator of socioeconomic and household oral health literacy context.

The primary outcome variables were preventive dental care need and restorative dental care need. Preventive care need was operationally defined as the presence of early or reversible oral health problems, including abnormal plaque accumulation, gingival inflammation, or visible enamel demineralization. Restorative care need was operationally defined as the presence of cavitated caries, dental pain or sensitivity suggestive of advanced disease, active dental infection, or lesions requiring operative intervention. Independent variables included age group, sex, plaque index, gingival index, frequency of toothbrushing, frequency of sugary snack intake, parental education level, and BMI-for-age category. Age was categorized into 5–10 years and 11–15 years to compare younger and older schoolchildren. Frequent sugary snack intake was classified as intake occurring two or more times per day, while low brushing frequency was classified as brushing less than once daily.

To improve reliability and reduce measurement bias, clinical examiners underwent calibration before the main screening process. Calibration involved harmonizing diagnostic thresholds for plaque, gingival inflammation, demineralization, cavitated lesions, and infection so that measurements were applied consistently across participants. A pilot assessment was used to refine the data collection form for clarity, feasibility, and completeness in the school-based outreach context. Data forms were reviewed after collection to identify incomplete entries, implausible values, and internal inconsistencies. Anonymized data were entered into a statistical database, and a second review was performed before analysis to preserve data integrity.

The minimum required sample size was calculated for estimation of a population proportion using a conservative expected prevalence of 50%, a 95% confidence level, and a 7% margin of error. This calculation yielded a target sample size of 196 participants, which was used as the analytical sample. The conservative prevalence assumption was selected to maximize sample size in the absence of precise recent local estimates for the target community.

Data were analyzed using IBM SPSS Statistics version 26. Continuous variables were summarized using means and standard deviations when normally distributed and medians with interquartile ranges when distributional assumptions were not met. Categorical variables were summarized as frequencies and percentages. Preventive and restorative care needs were compared across age group, sex, oral hygiene behavior, sugar intake, and parental education using chi-square tests or Fisher's exact tests where cell counts were small. Mean DMFT/DEFT scores and clinical index values were compared between groups using independent-samples t-tests for normally distributed variables and Mann-Whitney U tests for non-normally distributed data. Binary logistic regression was used as an exploratory multivariable analysis to assess factors independently associated with high restorative dental care need. Variables entered into the model included plaque index, sugary snack intake, brushing frequency, parental education level, gingival index, and BMI-for-age category. Adjusted odds ratios with 95% confidence intervals were reported, and statistical significance was set at $p < 0.05$.

Potential confounding was addressed analytically by including key behavioral, clinical, and sociodemographic variables in the multivariable model. Age and sex differences were examined through subgroup comparisons, while parental education was included to account for household-level socioeconomic and oral health literacy influences. Missing or incomplete data were handled by excluding unavailable values from the relevant analysis while retaining participants for analyses in which their data were complete. All statistical procedures were performed using anonymized participant records.

The study was conducted in accordance with ethical principles for human participant research. The data were originally collected during routine community dental outreach and screening activities that included non-invasive oral examination and oral health education. Written parental or guardian consent was obtained for screening activities, and age-appropriate child assent was obtained where applicable. Ethical approval for retrospective secondary analysis of anonymized outreach data was granted by the relevant institutional ethics review authority. No personal identifiers were included in the analytical dataset, and confidentiality was maintained throughout data handling, analysis, and reporting.

RESULTS

A total of 196 school-going children aged 5–15 years were included in the analysis. The sample comprised 104 children aged 5–10 years and 92 children aged 11–15 years. By sex, 102 participants were male and 94 were female. Preventive oral health needs were highly prevalent, affecting 86.2% of participants, while restorative dental care needs were identified in 72.4% of children. Overall, the findings showed a substantial coexistence of early reversible oral disease and advanced restorative disease within the same underprivileged school-based population.

Preventive indicators demonstrated a high burden of early oral disease. The mean Plaque Index was 1.96 ± 0.54 , with abnormal plaque accumulation recorded in 82.6% of children. The mean Gingival Index was 1.72 ± 0.62 , and gingival inflammation was abnormal in 76.4% of participants. Older children aged 11–15 years had significantly higher plaque scores than children aged 5–10 years (2.09 ± 0.56 vs 1.84 ± 0.52 ; $p = 0.01$) and significantly higher gingival inflammation scores (1.85 ± 0.65 vs 1.60 ± 0.58 ; $p = 0.03$). Demineralization lesions were also more frequent in the older age group (54.3% vs 43.3%), although this difference was not statistically significant ($p = 0.12$).

Table 1. Preventive Oral Health Indicators among Participants

Preventive Indicator	Overall Finding	Abnormal Finding, %	5–10 Years	11–15 Years	Difference	p-value
Plaque Index	1.96 ± 0.54	82.6	1.84 ± 0.52	2.09 ± 0.56	0.25 higher in 11–15 years	0.01
Gingival Index	1.72 ± 0.62	76.4	1.60 ± 0.58	1.85 ± 0.65	0.25 higher in 11–15 years	0.03
Demineralization / white-brown spot lesions	Present in 48.5%	48.5	43.3%	54.3%	11.0 percentage points higher in 11–15 years	0.12

Table 2. Restorative Oral Health Indicators among Participants

Restorative Indicator	Overall Finding	% of Total Sample	Subgroup Comparison	p-value
DMFT/DEFT score	3.14 ± 1.86	—	Males: 3.27 ± 1.92 ; Females: 3.00 ± 1.79	0.21
Presence of cavitated lesions	136 children	69.4	High sugar intake: 78.6%; Low sugar intake: 52.3%	<0.01
Reported dental pain/sensitivity	47 children	24.0	11–15 years: 28.3%; 5–10 years: 20.1%	0.09
Presence of active infection	30 children	15.3	—	—
Previous filling/restoration	12 children	6.1	—	—

Restorative disease was also common. The mean DMFT/DEFT score was 3.14 ± 1.86 , indicating a considerable accumulated caries burden. Cavitated lesions were present in 136 children, representing 69.4% of the sample. Children with high sugary snack intake had a markedly higher prevalence of cavitated lesions than those with lower sugar intake (78.6% vs 52.3%; $p < 0.01$). Dental pain or sensitivity was reported by 47 children (24.0%), with a higher proportion among children aged 11–15 years than those aged 5–10 years (28.3% vs 20.1%), although this difference did not reach statistical significance ($p = 0.09$). Active infection was identified in 30 children (15.3%), while only 12 children (6.1%) had evidence of any previous filling or restoration.

Table 3. Comparative Distribution of Preventive and Restorative Dental Care Needs

Participant Category	n	Preventive Needs, %	Restorative Needs, %	Difference percentage points	p-value
Overall sample	196	86.2	72.4	13.8	—
5–10 years	104	88.5	65.4	23.1	0.03
11–15 years	92	83.7	78.3	5.4	0.04
Males	102	84.3	74.5	9.8	0.07
Females	94	87.9	70.2	17.7	0.05
High sugar intake	—	89.6	80.2	9.4	0.02
Low sugar intake	—	78.4	58.7	19.7	0.01

The comparative analysis showed that preventive dental care needs were more frequent than restorative needs in the total sample (86.2% vs 72.4%). Among children aged 5–10 years, preventive needs exceeded restorative needs by 23.1 percentage points (88.5% vs 65.4%; $p = 0.03$). In contrast, among children aged 11–15 years, the difference narrowed to 5.4 percentage points (83.7% vs 78.3%; $p = 0.04$), indicating that restorative disease became more prominent with increasing age. Males had slightly higher restorative needs than females (74.5% vs 70.2%), while females had slightly higher preventive needs (87.9% vs 84.3%). Children with high sugar intake had both high preventive needs (89.6%) and high restorative needs (80.2%), whereas children with lower sugar intake showed lower preventive and restorative burden (78.4% and 58.7%, respectively).

Table 4. Exploratory Binary Logistic Regression for Factors Associated with High Restorative Dental Care Need

Variable	β Coefficient	Adjusted Odds Ratio	95% Confidence Interval	p-value
Plaque Index, per unit increase	0.93	2.54	1.61–4.02	<0.001
Frequent sugary snack intake, ≥ 2 /day	0.85	2.34	1.35–4.09	0.002
Brushing <1/day	0.72	2.05	1.08–3.91	0.027
Low parental education, none/primary	0.68	1.97	1.03–3.78	0.041
Gingival Index	0.36	1.43	0.91–2.26	0.112
Underweight BMI, <5th percentile	0.29	1.34	0.72–2.51	0.344

The exploratory logistic regression model identified several variables associated with high restorative dental care need. A one-unit increase in Plaque Index was associated with 2.54 times higher adjusted

odds of restorative need (95% CI: 1.61–4.02; $p < 0.001$). Frequent sugary snack intake of two or more times per day was associated with 2.34 times higher adjusted odds (95% CI: 1.35–4.09; $p = 0.002$), while brushing less than once daily was associated with 2.05 times higher adjusted odds (95% CI: 1.08–3.91; $p = 0.027$). Low parental education was also significantly associated with restorative need, with an adjusted odds ratio of 1.97 (95% CI: 1.03–3.78; $p = 0.041$). Gingival Index and underweight BMI showed positive but statistically non-significant associations with restorative need.

Overall, the Results showed that most children had evidence of preventable oral disease, while nearly three-quarters already had restorative care needs. The transition from predominantly preventive findings in younger children to a narrower preventive-restorative gap in older children suggests a greater accumulated burden of irreversible disease with age. High plaque burden, frequent sugary snack intake, low brushing frequency, and low parental education were the strongest statistically significant factors associated with restorative dental care need in the adjusted model.

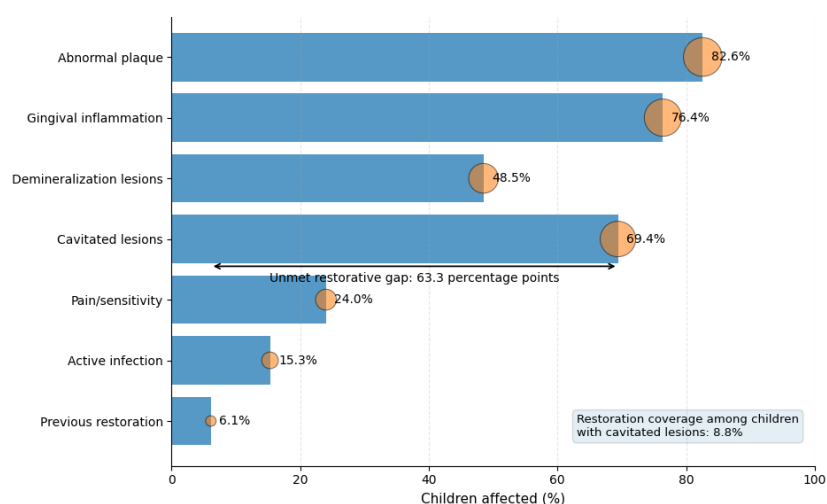


Figure 1. Clinical Burden Continuum and Unmet Restorative Coverage in Underserved Schoolchildren

The clinical burden continuum demonstrates that early preventable disease was widespread, with abnormal plaque affecting 82.6% of children and gingival inflammation affecting 76.4%, while 48.5% already showed demineralization lesions. Advanced restorative disease was also substantial, as 69.4% of children had cavitated lesions; however, only 6.1% had evidence of previous restoration, producing an unmet restorative gap of 63.3 percentage points and a restoration coverage estimate of only 8.8% among children with cavitated lesions. Symptomatic and complicated disease was less frequent but clinically important, with pain or sensitivity reported in 24.0% and active infection present in 15.3%, indicating that a large proportion of untreated cavitated disease had not yet received restorative care despite clear clinical need. This pattern supports the coexistence of high preventive burden, substantial untreated restorative disease, and very low treatment coverage in the study population.

DISCUSSION

The present study demonstrates a substantial dual burden of early preventable oral disease and established restorative dental morbidity among school-going children from an underprivileged urban community in Lahore. Preventive dental care needs were identified in 86.2% of children, while restorative care needs were already present in 72.4%, indicating that most children had oral conditions requiring either early preventive intervention, operative treatment, or both. This pattern suggests that oral disease in this population is not limited to isolated untreated caries but reflects a broader continuum beginning with plaque accumulation and gingival inflammation, progressing toward enamel demineralization, cavitated lesions, pain, and infection. The coexistence of high preventive and restorative needs is clinically important because it indicates missed opportunities for early intervention before disease becomes irreversible.

The high prevalence of plaque accumulation and gingival inflammation reflects inadequate daily oral hygiene practices and limited exposure to structured preventive dental care. Abnormal plaque was recorded in 82.6% of participants, and gingival inflammation was present in 76.4%, showing that most children had active, modifiable risk conditions. These findings are consistent with evidence from socioeconomically disadvantaged populations where poor access to oral health education, low parental literacy, and limited routine dental contact contribute to inadequate plaque control and delayed recognition of oral disease (15,16). The presence of demineralization lesions in 48.5% of children further supports the interpretation that a large proportion of disease was still at a stage where preventive strategies, including supervised toothbrushing, fluoride exposure, dietary counseling, and periodic school-based screening, could be clinically meaningful.

Restorative disease was also highly prevalent, with 69.4% of children having cavitated lesions and a mean DMFT/DEFT score of 3.14 ± 1.86 . This level of caries experience indicates that many children had already progressed beyond early reversible disease. The very low proportion of children with previous restorations (6.1%) is particularly important because it highlights a major treatment gap: although cavitated lesions were common, only a small minority had received restorative care. This imbalance between disease burden and treatment coverage suggests that barriers such as cost, limited-service availability, low perceived need for dental care, and delayed care-seeking may prevent children from receiving timely treatment. Similar patterns have been described in underserved settings, where dental attendance is often symptom-driven and treatment is sought only after pain, infection, or functional limitation occurs (17,18).

Age-related findings further support a progressive disease pattern. Children aged 11–15 years had higher Plaque Index and Gingival Index scores than those aged 5–10 years, and restorative needs were more frequent in the older group (78.3%) than in the younger group (65.4%). Although the cross-sectional design does not establish individual disease progression over time, the narrowing gap between preventive and restorative needs in older children suggests accumulated exposure to cariogenic diet, suboptimal oral hygiene, and limited preventive care across childhood. This age gradient is clinically plausible because untreated plaque, gingival inflammation, and early enamel lesions can progress to cavitation when preventive measures are absent or inconsistent. These findings support the need to introduce oral health interventions early in school life rather than waiting until pain or visible cavitation develops.

Dietary behavior emerged as an important factor associated with restorative disease. Children with frequent sugary snack intake had a higher prevalence of cavitated lesions than those with lower sugar intake (78.6% vs 52.3%; $p < 0.01$), and frequent sugary snack intake was independently associated with high restorative need in the exploratory regression model (adjusted OR: 2.34; 95% CI: 1.35–4.09; $p = 0.002$). This finding is consistent with the established role of frequent sugar exposure in caries development, particularly when combined with poor plaque control and limited fluoride exposure (19). In low-income communities, dietary risk may also be shaped by affordability and availability of inexpensive sugar-rich snacks, making individual behavior difficult to separate from broader socioeconomic conditions. Therefore, school-based and family-centered dietary counseling should be framed as a practical public health intervention rather than solely as an individual responsibility.

Poor oral hygiene was the strongest factor associated with restorative care need. Each unit increase in Plaque Index was associated with 2.54 times higher adjusted odds of high restorative need (95% CI: 1.61–4.02; $p < 0.001$), while brushing less than once daily was associated with 2.05 times higher adjusted odds (95% CI: 1.08–3.91; $p = 0.027$). These findings emphasize that plaque control is central to preventing progression from reversible disease to cavitated caries. However, the interpretation should remain associative because the study design measured exposure and outcome at the same screening point. Even so, the strength and consistency of these associations support practical preventive strategies

such as supervised brushing in schools, reinforcement of twice-daily brushing with fluoridated toothpaste, and repeated oral hygiene education for children and caregivers.

Parental education was also significantly associated with restorative dental care need. Children whose parents had no or only primary education had nearly twice the adjusted odds of high restorative need (adjusted OR: 1.97; 95% CI: 1.03–3.78; $p = 0.041$). This finding suggests that household-level oral health literacy may influence brushing routines, dietary practices, recognition of early dental disease, and care-seeking behavior. Low parental education may also reflect broader socioeconomic disadvantage, including reduced access to health information, financial limitations, and competing household priorities. Therefore, preventive programmes in similar communities should not focus exclusively on children but should also include parent-directed counseling, simple educational materials, and referral pathways that help families understand when and where to seek care.

The low treatment coverage observed in this study has important public health implications. The contrast between 69.4% cavitated lesions and only 6.1% previous restorations indicates that most restorative disease remained untreated. In addition, 24.0% of children reported dental pain or sensitivity, and 15.3% had signs of active infection, showing that untreated disease had already become symptomatic or complicated in a clinically relevant subgroup. These findings reinforce the need for integrated school oral health models that combine screening, prevention, referral, and follow-up. A prevention-only model may be insufficient for children who already have cavitated lesions or infection, while a restoration-only model would fail to address the very high burden of plaque, gingivitis, and demineralization. A balanced approach is therefore needed, with preventive care as the foundation and accessible restorative referral for children with established disease.

The findings also support the use of schools as practical access points for oral health interventions in underserved communities. Schools allow repeated contact with children, opportunities for supervised brushing, delivery of oral health education, early identification of disease, and referral of children with urgent restorative needs. In low-resource environments, this model may be more feasible than relying solely on clinic-based attendance, particularly when families face financial and transport barriers. The observed distribution of disease in this study suggests that school-based programmes should prioritize risk stratification: children with plaque, gingivitis, and demineralization should receive preventive care and monitoring, while those with cavitated lesions, pain, or infection should be linked to affordable restorative services.

This study has limitations that should be considered when interpreting the findings. The retrospective cross-sectional design prevents conclusions about temporality or causality, and the associations observed between plaque, sugar intake, brushing frequency, parental education, and restorative need should be interpreted as concurrent relationships rather than proof of disease progression. The use of convenience sampling from a single school-based outreach setting limits generalizability to all underprivileged children in Lahore or Pakistan. Behavioral information such as brushing frequency and sugar intake may be affected by recall or reporting bias. In addition, the exploratory regression analysis provides useful adjusted associations but should be interpreted cautiously because the analysis was based on available outreach variables rather than a prospectively designed causal model.

Despite these limitations, the study provides important local evidence on the relative burden of preventive and restorative dental care needs among underprivileged schoolchildren. Its main strength lies in the combined assessment of early preventive indicators, advanced restorative disease, behavioral factors, and parental education within the same community-based pediatric sample. The findings show that the oral health burden in this population is both preventable and already clinically advanced, requiring an integrated public health response. Overall, the data support a shift toward early, school-centered preventive oral health strategies, accompanied by accessible restorative referral systems for children who already have cavitated lesions, pain, or infection.

CONCLUSION

This study found a substantial burden of both preventive and restorative dental care needs among school-going children from an underprivileged urban community in Lahore, with preventive needs affecting 86.2% of participants and restorative needs affecting 72.4%. The high prevalence of abnormal plaque accumulation, gingival inflammation, and demineralization indicates that many children had early oral health problems suitable for preventive intervention, while the frequent occurrence of cavitated lesions, dental pain, and active infection shows that a large proportion had already progressed to advanced untreated disease. Poor plaque control, frequent sugary snack intake, brushing less than once daily, and low parental education were significantly associated with greater restorative dental care need, highlighting the combined influence of behavioral and household-level factors on pediatric oral health. The very low proportion of previous restorations despite widespread cavitated disease indicates a marked treatment gap in this population. These findings support the need for school-based oral health strategies that combine oral hygiene education, supervised toothbrushing, fluoride-based prevention, dietary counseling, parental awareness, routine screening, and referral pathways for timely restorative care in underserved communities.

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