Comparative Study of Dental Health Status and Its Determinants among Children Attending Government and Private Schools in Kanpur City

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ABSTRACT

The purpose of this study was to evaluate the prevalence of dental caries and gingivitis and its relation to various determinants like dietary habits, habits related to oral health, and oral hygiene practice among private and government school children of age 6–12 years in Kanpur City. A total of 1,550 children (775 from government school and 775 from private school) were selected. Overall, 60% children presented with caries. Prevalence of caries was significantly more associated with government school children (63.1%) compared with private school children (56.9%). The mean deft scores were high in government school children (1.08 ± 1.91) compared with private school children (0.93 ± 1.53). This was statistically significant (p < 0.05). The DMFT scores were also high among government school children (0.84 ± 1.25) compared with private school children (0.67 ± 1.19). This was statistically significant (p < 0.05). On the whole, out of 1,550 children only 17.8% children presented with gingivitis, in which majority had mild form of gingivitis when compared with moderate and severe forms. The prevalence of gingivitis was relatively high among government school children (55%) compared with private school children (45%). This was statistically significant (p < 0.05). Summing up, a conclusion could be drawn that the prevalence of both dental caries and gingivitis depends on the state of the oral hygiene habits and practices, correspondingly, due to schoolchildren’s knowledge of individual oral hygiene and skills.

Keywords: Dental caries, Gingival growth, Prevalence.

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INTRODUCTION

“Prevention is better than cure”—if this motto is taught to all the children, all over the world, surely dental diseases would be checked and controlled at a very early stage. General health and well-being cannot be attained in absence of good oral health, which significantly affects the quality of life. Among the various prevalent but preventable oral diseases, dental caries and gingivitis are the most commonly encountered dental problems among school-going children. The most predominant factors among them are an accumulation of plaque, dietary habits, and susceptibility to host factors. Other factors like socioeconomic status, education level, and habits related to oral health and oral hygiene practices play a role to a certain extent, either in the development or progression of dental disease, sometimes there is a positive correlation between dental caries and gingivitis with these contributory factors.

This study had been done to evaluate the dental health status, so that it gives a better idea about the oral health status of the schoolchildren of age 6–12 years attending government and private schools in Kanpur city, Uttar Pradesh.

AIMS AND OBJECTIVES OF THE STUDY

• To assess the prevalence of dental caries and gingivitis among private and government school children of age 6–12 years in Kanpur city.
• To find out the possible association between the prevalence of dental caries and gingivitis in relation to dietary habits, habits related to oral health, and oral hygiene practices.
• To plan out appropriate preventive measures and to recommend accordingly.

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Sample Size
A pilot study was conducted among 120 private and government school children (totally 4 schools were taken out of which 2 were private and 2 were government schools) of 6–12 years of age in Kanpur city, with the objective to estimate the prevalence of dental caries and gingivitis and their possible association with dietary habits, habits related to oral health, and oral hygiene practices.

From the pilot study, it was found that the overall prevalence of dental caries was 50%, using this, the sample size was calculated as 1,550.

\[
\text{Sample Size (ss)} = \frac{Z^2 \times (p) \times (1 - p)}{c^2}
\]

Where:
- \( Z = Z \) value (e.g., 1.96 for 95% confidence level),
- \( p = \) Percentage picking a choice, expressed as decimal (0.5 used for sample size needed).
- \( c = \) Confidence interval, expressed as decimal (e.g., 0.04 = ±4).

Using the above formula, the sample size was estimated to be 1,537 (close to 1,550) with a 5% margin of error (high precise) for 95% confidence interval and for 50% prevalence.

Method of Collection of Data
A total of 30 schools of which 15 private and 15 government schools were selected by simple random sampling method to achieve the sample size of 1,550 and the children were equally divided between the two school groups.

Survey Design
The survey was carried out using a specific proforma, which consisted of two parts.

The first part consisted of general information of schoolchildren regarding the main staple food, diet, sweet consumption, oral hygiene practices, and other information which were recorded through an interview.

The second part consisted of the clinical oral examination. Oral examination of schoolchildren was carried out under natural light using plane mouth mirror, explorer, CPI (621) probe.

Clinical Examination
The recording was noted down by the House surgeons who were trained and calibrated before the start of the survey. The sterilization of instruments was done by chemical method. No radiographs were taken.

Study Variables Used in Survey Design
Age-groups: The children were divided among 6–7, 8–9, 10–11, and 12 years of age groups.

Sex: Male/Female.

Caries: Prevalence and severity of dental caries were measured through deft and DMFT index in both primary and permanent dentition according to the World Health Organization criteria (1997).²

Gingival status was assessed using Gingival Index by Loe and Silness, 1963."³

Statistical Analysis
Descriptive statistical analysis has been carried out in the present study. Results on continuous measurements are presented on mean ± SD (Min–Max) and results on categorical measurements are presented in number (%). Significance is assessed at 5% level of significance. Chi-square/Fisher’s exact test has been used to find the significance of study parameters on categorical scale between two or more groups. 95% confidence interval has been computed to find the significant features.

Results
The study group comprised 1,550 school children, out of which, 775 students were from 15 government schools and 775 students were from 15 private schools.

Out of 1,550, 620 (40.0%) children were caries-free (deft/DMFT = 0) and 930 (60.0%) children presented with caries (deft/DMFT > 0).

Table 1 presents out of 775 children in the government school, 286 (36.9%) were caries-free and 489 (63.1%) children presented with caries. Whereas in private schools, out of 775 children, 334 (43.1%) were caries-free and 441 (56.9%) children presented with caries.

Figure 1 shows prevalence of caries was more associated with government school children compared to private school children. This was seen as statistically significant (\( p < 0.05 \)).

Figure 2 shows the mean deft score for the overall group was 1.01 ± 1.73. The mean deft score in government school children was 1.08 ± 1.91 and in private school children, it was 0.93 ± 1.53. These values were statistically significant (\( p < 0.05 \)). Out of which the mean of d(t) component in a government school was 0.97 ± 1.75 and in private school, it was 0.72 ± 1.32, which were statistically significant (\( p < 0.05 \)). The mean of e(t) component in government school children was 0.04 ± 0.24 and in private school children, it was 0.05 ± 0.21, which was not statistically significant (\( p > 0.05 \)). Whereas, the mean of f(t) component in government school children was 0.08 ± 0.39 and in private school children it was 0.15 ± 0.57, which were statistically significant (\( p < 0.05 \)).

Figure 3 indicates the mean DMFT score for overall group was 0.76 ± 1.22. The mean DMFT score in government school children was 0.84 ± 1.25 and in private school children it was 0.67 ± 1.19. These values were statistically significant (\( p < 0.05 \)). Out of which the mean of D(T) component in government school was 0.64 ± 1.01 and in private school it was 0.54 ± 1.03, which were statistically significant (\( p < 0.05 \)). The mean of M(T) component in government school children was 0.06 ± 0.23 and in private school children it was 0.03 ± 0.16, which were statistically significant (\( p < 0.05 \)). Whereas, the mean of F(T) component in government school children was

Table 1: Incidence of caries

| Caries status  | Govt school | Pvt school | Total |
|----------------|-------------|------------|-------|
| Caries present | 489         | 441        | 930   |
| Caries-free    | 286         | 334        | 620   |
| Total          | 775         | 775        | 1550  |

Inference: Incidence of caries present is significantly more associated with Government school children with \( \chi^2 = 6.194; p = 0.013^* \)
0.15 ± 0.46 and in private school children it was 0.12 ± 0.44, which were not statistically significant (p > 0.05).

The mean deft and DMFT scores in government schools were higher when compared with private schools.

Tables 2(A) and 3(A) show the mean deft score was high among 6–7 years age children and the mean DMFT score increased with age from 6 to 12 years, with peak score being among 12 years age group, showing the cumulative effect of dental caries with age. This was seen statistically significant in both government and private schools.

Tables 2(B) and 3(B) present in private school the mean deft score were high among females (1.00) compared with males (0.87) but the difference between the groups was not statistically significant (p > 0.05) whereas, the mean DMFT score were similar among public school males as well as females (0.84) and the difference between the groups was not statistically significant (p > 0.05).

Tables 2(C) and 3(C) show the mean caries score both in deciduous and permanent dentition, increased with increase in frequency of sweet consumption and maximum caries was seen among children who consumed sweets more than three times a day or those who had them irregularly both in public and private schools. The difference was statistically significant (p < 0.05).

Tables 2(D) and 3(D) determine the mean deft score was high among both private and government school children (1.37 and 1.45) who used tooth powder to clean their teeth than the children who used toothpaste (0.93 and 0.85) and other materials (1.33 and 0.93) and the difference was statistically significant (p < 0.05). Whereas, no significant difference between caries status and frequency of toothbrushing in government school children was noted.

In the present study, out of 1,550 children examined (Table 4 and Fig. 4), number of children with healthy gingiva was 1,274 (82.2%) and the number of children who had gingivitis was 276 (17.8%). Out of 276 children who had gingival inflammation, 152 (55.0%) children belonged to government school and 124 (45.0%) children belonged to private school. Gingivitis is significantly more associated with government school children.

Tables 5(A) and 6(A) present that prevalence of gingival inflammation increased with the age. This was not statistically significant among government school but it was statistically significant in private school children. Depending upon the degree of severity, mild form of gingivitis predominated over moderate and severe forms. The difference was statistically significant (p < 0.05).

Tables 5(B) and 6(B) show that in government school more females were affected (55.5% with mild and 57.6% with moderate gingival inflammation) than males (44.5% with mild and 42.4% with moderate gingival inflammation) whereas, in private school more males (57.3% with mild and 52.4% with moderate gingival inflammation) were affected than females (42.7% with mild and 47.6% with moderate gingival inflammation) but this was not statistically significant.

Tables 5(C) and 6(C) show the correlation of prevalence and intensity of gingivitis with the oral hygiene habits in both the schools. This was statistically significant. More students presented with gingivitis who followed finger and other method to clean their teeth. This was seen statistically significant in government school but not in private school. Similarly, more gingivitis cases were seen associated with toothpowder or other material for teeth cleaning and were more prevalent among children attending government schools. These values were statistically significant in both the schools. 87.4% government school children and 78% children from private school cleaned their teeth once a day presented with mild gingivitis. These values were not statistically significant in government school but seen statistically significant in private school.
Table 2: Mean d(t), e(t), f(t), and def(t) according to age, gender, frequency of sweet consumption (SCF), method of toothbrushing (method), material for toothbrushing (MTC), and frequency of toothbrushing (FTC) in government school

| Variables | d(t) | e(t) | f(t) | def(t) | p value | D(T) | M(T) | F(T) | DMF(T) | p value |
|-----------|------|------|------|--------|---------|------|------|------|--------|---------|
| (A) Age   |      |      |      |        |         |      |      |      |        |         |
| • 6–7     | 2.09 | 0.10 | 0.09 | 2.27   | <0.001**| 0.13 | 0.01 | 0.06 | 0.20   | <0.001**|
| • 8–9     | 1.51 | 0.07 | 0.13 | 1.72   |         | 0.24 | 0.02 | 0.03 | 0.28   |         |
| • 10–11   | 0.21 | 0.00 | 0.04 | 0.25   |         | 0.94 | 0.08 | 0.17 | 1.17   |         |
| • 12      | 0.07 | 0.00 | 0.07 | 0.10   |         | 1.26 | 0.12 | 0.35 | 1.73   |         |
| (B) Gender|      |      |      |        |         |      |      |      |        |         |
| • Male    | 0.95 | 0.04 | 0.07 | 1.07   | 0.866   | 0.62 | 0.06 | 0.17 | 0.84   | 0.981   |
| • Female  | 0.98 | 0.04 | 0.09 | 1.09   |         | 0.66 | 0.05 | 0.14 | 0.84   |         |
| (C) SCF   |      |      |      |        |         |      |      |      |        |         |
| • Irregular| 1.40 | 0.06 | 0.15 | 1.59   | <0.001**| 0.89 | 0.06 | 0.24 | 1.19   | <0.001**|
| • Once    | 0.86 | 0.04 | 0.07 | 0.96   |         | 0.80 | 0.08 | 0.17 | 1.04   |         |
| • Twice   | 0.02 | 0.00 | 0.00 | 0.02   |         | 0.01 | 0.00 | 0.00 | 0.01   |         |
| • Thrice  | 1.89 | 0.06 | 0.10 | 2.05   |         | 0.79 | 0.08 | 0.20 | 1.06   |         |
| (D) Oral hygiene practices |        |      |      |        |         |      |      |      |        |         |
| Method    |      |      |      |        |         |      |      |      |        |         |
| • Finger  | 1.73 | 0.05 | 0.11 | 1.89   | <0.001**| 0.32 | 0.05 | 0.05 | 0.41   | 0.004** |
| • Brush   | 0.90 | 0.04 | 0.08 | 1.01   |         | 0.67 | 0.06 | 0.16 | 0.88   |         |
| MTC       |      |      |      |        |         |      |      |      |        |         |
| • Paste   | 0.82 | 0.04 | 0.08 | 0.93   | 0.013*  | 0.72 | 0.07 | 0.17 | 0.96   | 0.003** |
| • Powder  | 1.28 | 0.03 | 0.10 | 1.37   |         | 0.50 | 0.03 | 0.11 | 0.62   |         |
| • Other   | 1.18 | 0.07 | 0.04 | 1.33   |         | 0.46 | 0.04 | 0.16 | 0.66   |         |
| FTC       |      |      |      |        |         |      |      |      |        |         |
| • Once    | 0.98 | 0.04 | 0.07 | 1.08   | 0.805   | 0.63 | 0.05 | 0.15 | 0.83   | 0.014*  |
| • Twice   | 0.86 | 0.05 | 0.14 | 1.03   |         | 0.81 | 0.07 | 0.18 | 1.06   |         |
| • Thrice  | 1.25 | 0.08 | 0.08 | 1.42   |         | 0.00 | 0.00 | 0.00 | 0.00   |         |

** non significant
* significant
| Table 3: Mean $d(t)$, $e(t)$, $f(t)$, and $def(t)$ according to age, gender, frequency of sweet consumption (SCF), method of toothbrushing (method), material for toothbrushing (MTC), and frequency of toothbrushing (FTC) in private school |
|---------------------------------------------------------------|
| **Variables** | $d(t)$ | $e(t)$ | $f(t)$ | $def(t)$ | $p$ value | $D(T)$ | $M(T)$ | $F(T)$ | $DMF(T)$ | $p$ value |
| (A) Age | | | | | | | | | | |
| • 6–7 | 1.14 | 0.12 | 0.27 | 1.55 | <0.001** | 0.04 | 0.00 | 0.05 | 0.09 | <0.001** |
| • 8–9 | 1.24 | 0.07 | 0.23 | 1.58 | 0.22 | 0.03 | 0.11 | 0.36 | 0.36 |
| • 10–11 | 0.50 | 0.00 | 0.11 | 0.61 | 0.93 | 0.02 | 0.06 | 0.92 | 0.92 |
| • 12 | 0.00 | 0.00 | 0.00 | 0.00 | 1.98 | 0.06 | 0.26 | 1.30 | 1.30 |
| (B) Gender | | | | | | | | | | |
| • Male | 0.69 | 0.03 | 0.14 | 0.87 | 0.242 | 0.54 | 0.04 | 0.14 | 0.71 | 0.300 |
| • Female | 0.75 | 0.06 | 0.17 | 1.00 | 0.55 | 0.02 | 0.10 | 0.62 | 0.62 |
| (C) SCF | | | | | | | | | | |
| • Irregular | 0.67 | 0.11 | 0.11 | 1.59 | 0.368 | 0.72 | 0.04 | 0.20 | 0.93 | <0.001** |
| • Once | 0.70 | 0.03 | 0.14 | 0.96 | 0.57 | 0.03 | 0.10 | 0.68 | 0.68 |
| • Twice | 0.76 | 0.06 | 0.12 | 0.02 | 0.55 | 0.02 | 0.12 | 0.66 | 0.66 |
| • Thrice | 0.75 | 0.06 | 0.34 | 1.15 | 0.24 | 0.00 | 0.05 | 0.29 | 0.29 |
| (D) Oral hygiene practices | | | | | | | | | | |
| Method | | | | | | | | | | |
| • Finger | 1.96 | 0.10 | 0.35 | 2.40 | <0.001** | 0.21 | 0.04 | 0.12 | 0.37 | 0.004** |
| • Brush | 0.63 | 0.04 | 0.14 | 0.83 | 0.57 | 0.02 | 0.12 | 0.69 | 0.69 |
| MTC | | | | | | | | | | |
| • Paste | 0.67 | 0.04 | 0.12 | 0.85 | <0.001** | 0.57 | 0.03 | 0.13 | 0.69 | 0.003** |
| • Powder | 1.06 | 0.09 | 0.30 | 1.45 | 0.40 | 0.01 | 0.08 | 0.50 | 0.50 |
| • Other | 0.56 | 0.07 | 0.29 | 0.93 | 0.59 | 0.05 | 0.07 | 0.71 | 0.71 |
| FTC | | | | | | | | | | |
| • Once | 0.97 | 0.06 | 0.21 | 1.26 | <0.001** | 0.75 | 0.04 | 0.16 | 0.91 | 0.014* |
| • Twice | 0.01 | 0.01 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| • Thrice | 2.67 | 0.00 | 0.00 | 2.67 | 0.33 | 0.00 | 1.00 | 1.33 | 1.33 |

** non significant  
* significant
**DISCUSSION**

Epidemiological studies can be used as an incentive to increase community consciousness about oral health and to promote community participation in preventive actions and make the reorientation of oral health services toward prevention and oral health promotion easier.

This study has been designed to find out the prevalence of dental caries and gingivitis among 6–12 years age government and private school children in Kanpur city and its relation to various determinants like age, sex, dietary habits, habits related to oral health, and oral hygiene practice and to compare in which group the prevalence of above-mentioned conditions are more.

The present study showed, out of 1,550 children examined on the whole 40.0% of children were caries-free and 60.0% of children presented with caries. These findings are quite similar to the results conducted by Dash et al.\(^5\) which showed that total percentage of caries prevalence were 64.3% among 5–15 years of age group children in Cuttack, Karunakaran et al.\(^6\) found the prevalence of caries to be 69.57% in Namakkal district Tamil Nadu, Kalaskar et al.\(^7\) surveyed and found caries prevalence was 65.70% in school going children of Vidarbha region.

In the present study, the mean deft scores in a government school were 1.08 ± 1.91 and in private school, it was 0.93 ± 1.53 and the mean DMFT score was high among government school children (0.84 ± 1.25) when compared with private school (0.67 ± 1.19) which pointed that government school scores were higher as compared to private school and this was statistically significant (\(p < 0.05\)). The reason being low socioeconomic status, lack of

| Gingivitis | Govt school | Pvt school | Total |
|-----------|------------|------------|-------|
| Healthy   | 623        | 651        | 1274  |
| Mild      | 119        | 82         | 201   |
| Moderate  | 31         | 40         | 71    |
| Severe    | 2          | 2          | 4     |
| Total     | 775        | 775        | 1550  |

Inference: Gingivitis is significantly more associated with government school children with \(\chi^2 = 8.567; p = 0.036^*\)

| Variables | Criteria | Healthy (n = 623) | Mild (n = 119) | Mod-severe (n = 33) | Significance |
|-----------|----------|------------------|---------------|---------------------|--------------|
| (A) Age   | 6–7      | 160              | 29            | 3                   | \(\chi^2 = 8.129; p = 0.229\) |
|           | 8–9      | 161              | 27            | 7                   | 21.2         |
|           | 10–11    | 152              | 29            | 13                  | 39.4         |
|           | 12       | 150              | 34            | 10                  | 30.3         |
| (B) Gender| Male     | 320              | 53            | 14                  | 42.4         |
|           | Female   | 303              | 66            | 19                  | 57.6         |
| (C) Oral hygiene practices | Type of teeth cleaning | Finger | 38 | 6.1 | 22 | 18.5 | 3 | 9.1 | \(\chi^2 = 20.574; p < 0.001^{**}\) |
|           | Brush    | 585              | 97            | 30                  | 90.9         |
|           | Materials used for teeth cleaning | Paste | 460 | 73.8 | 41 | 34.5 | 5 | 15.2 | \(\chi^2 = 111.11^* p < 0.001^{**}\) |
|           | Powder   | 115              | 48            | 21                  | 63.6         |
|           | Other    | 48               | 7.7           | 7                   | 21.2         |
| Frequency of teeth cleaning | Once | 535              | 104           | 30                  | 90.9         |
|           | Twice    | 80               | 12.8          | 12                  | 10.1         |
|           | Don't clean everyday | 8          | 1.3           | 3                   | 2.5          |

Table 5: Association demographic, habits, and clinical variables with gingivitis in government school children
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Table 6: Association demographic, habits, and clinical variables with gingivitis in private school children

| Variables             | Criteria   | Healthy (n = 651) | Mild (n = 82) | Mod-severe (n = 42) | Significance |
|-----------------------|------------|-------------------|---------------|---------------------|--------------|
|                       |            | No %              | No %          | No %                | p-value      |
| (A) Age               |            |                   |               |                     |              |
| 6–7                   |            | 169 26.0          | 19 23.2       | 6 14.3              | $\chi^2 = 12.357; p = 0.054+$ |
| 8–9                   |            | 170 26.1          | 17 20.7       | 6 14.3              |              |
| 10–11                 |            | 162 24.9          | 19 23.2       | 14 33.3             |              |
| 12                    |            | 150 23.0          | 27 32.9       | 16 38.1             |              |
| (B) Gender            |            |                   |               |                     |              |
| Male                  |            | 319 49.0          | 47 57.3       | 22 52.4             | $\chi^2 = 2.110; p = 0.348$ |
| Female                |            | 332 51.0          | 35 42.7       | 20 47.6             |              |
| Mixed                 |            | 433 66.5          | 52 63.4       | 26 61.9             |              |
| (C) Oral hygiene practices |          |                   |               |                     |              |
| Type of teeth cleaning| Finger    | 44 6.8            | 6 7.3         | 2 4.8               | $\chi^2 = 0.305; p = 0.858$ |
|                       | Brush      | 607 93.2          | 76 92.7       | 40 95.2             |              |
| Materials used for teeth cleaning | Paste | 549 84.3          | 56 68.3       | 22 52.4             | $\chi^2 = 40.714 p < 0.001^{**}$ |
|                       | Powder     | 77 11.8           | 15 18.3       | 15 35.7             |              |
|                       | Other      | 25 3.8            | 11 13.4       | 5 11.9              |              |
| Frequency of teeth cleaning | Once | 460 70.7          | 64 78.0       | 38 90.5             | $\chi^2 = 11.174 p = 0.025^*$ |
|                       | Twice      | 189 29.0          | 17 20.7       | 4 9.5               |              |
|                       | Don't clean everyday | 2 0.3        | 1 1.2         | 0 0.0               |              |

According to World Health Organization 2013,15 the importance given to this age is because it is the age that children leave primary schools.

In both the schools, 72.8% of children had mild gingivitis, 25.7% had moderate gingivitis and only 0.01% had a severe form of gingivitis. The present study showed that the prevalence of gingival inflammation increased with the age. This was not statistically significant among government schools but it was seen statistically significant in private school children.

In a government school, more females were affected than males. Whereas, in private school, more males were affected than females. The present study showed the correlation of prevalence and intensity of gingivitis with poor oral hygiene habits. This was statistically significant. Summing up, a conclusion could be drawn, that the prevalence of gingivitis depends on the state of the oral hygiene habits, correspondingly, due to schoolchildren's knowledge of individual oral hygiene and skills. Prevalence and severity of gingivitis were reduced by improving oral hygiene. Similar results were presented internationally by Rajab et al.16 and Sayegh et al.17 in their studies.

Suggestions and Recommendations

- Proper dietary control with restricted sugar consumption through a school dental health education program is advocated.
- Plaque control by promoting a daily regimen of toothbrushing, preferably with a fluoridated toothpaste will be effective in preventing and controlling dental caries and gingivitis.
- Good brushing techniques with the appropriate use of fluoridated toothpaste should be promoted in the prevention of dental caries.
- School-based fluoride mouthrinsing programs should be initiated both in government and private schools for effective control of dental caries.
- School dental health education programs should be undertaken on regular basis involving parents and school teachers along
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with children. In this program, diet and nutritional counseling and advocacy for use of fluoridated dentifrice should be undertaken, especially for pregnant and lactating mothers.

- It should be encouraged for parents to see that lunch boxes of their children consist of fewer confectionery items and more of vegetables and fruits—“Safe for the teeth/Tooth friendly”.
- There should not be any provision for the sale of confectioneries within the school premises. In this regard, school authorities should undertake responsibility.
- It is ideal to have a school dental clinic to be set up at school premises only, to carry out comprehensive and incremental dental care.
- However, to implement an effective preventive program we need more detailed data on the prevalence of dental diseases covering all factors and parameters from a larger sample size.

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