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Knowledge And Awareness Among Elementary School Children Regarding Oral Health Hygiene: A Comparative Study Between Private And Government Schools

Dr. Parinita Mohindru[1], Jaskaran Singh[2], Kamaljot Kaur Rattu[3]

[1]Associate Dentist, Kkafe Dental Smiles, Amritsar, Punjab, India. E-mail: dentist.parinita.mohindru@gmail.com
[2]Bachelor's of Dental Surgery (BDS) Student, Punjab Government Dental College and Hospital, Amritsar, Punjab, India. E-mail: drjas29@gmail.com
[3]DDS, Department of Dentistry, Pacific Dental Services, Rohnert Park, California, USA. Email:kaurdrkamal@gmail.com

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Abstract
Background: Oral health plays a crucial role in maintaining the overall well-being of the body. Poor oral hygiene in childhood can lead to long term systemic complications and chronic disorders. Oral hygiene has remained a neglected and ignored problem that has over the years
become a huge public health burden. Early awareness is essential for prevention and maintenance of good oral health and thereby a healthy body.
Aim: To assess and compare the knowledge, awareness, and oral hygiene practices among elementary school children in private and government schools.
Materials and Methods: A cross-sectional comparative study was conducted among 270 children aged 6–12 years, with 145 of them belonging to private schools and about 125 of them being from government schools. A structured questionnaire consisting of 5 sections was used to evaluate the following parameters: oral hygiene practices , knowledge and awareness , attitude toward oral hygiene, influence of school on oral health and knowledge regarding preventive dental care. Data was analyzed using percentage distribution and comparative analysis.
Results: The findings revealed that children from private schools demonstrated relatively better oral hygiene knowledge and practices. Overall, oral health awareness among elementary children is insufficient as habits of preventive oral hygiene practices are lacking in both groups .There is a need for early intervention and oral health education at school level.
Conclusion: Overall awareness and practices related to oral hygiene were inadequate in both groups, with a more pronounced deficiency among government school children. There is a need for structured oral health education programs targeting school children.
Keywords:

- Oral Health
- Oral Hygiene
- School Children
- Elementary School Children
- Oral Health Awareness
- Oral Health Knowledge

Introduction

Oral health is identified globally as an essential element of general health and overall quality of life (18). It includes a wide array of parameters like the health of the teeth, gums, oral mucous membrane , tongue, and associated structures. The oral cavity not only enables very essential daily activities such as chewing, swallowing but also roles like speaking, smiling and social interaction (6). Good oral health helps children to function with ease, without pain, infection, or embarrassment (1). On the contrary , poor oral hygiene can result in numerous dental and systemic complications that adversely affect physical growth, psychological development, nutritional intake, communication, and academic performance. Since childhood forms a critical developmental phase of life during which long term habits are established, right oral hygiene attitude among children becomes a health priority.

The World Health Organization emphasizes that oral health extends beyond the absence of disease and includes the maintenance of functional, social, and psychological well-being. Oral diseases such as dental caries, gingivitis, periodontitis, infections and malocclusion are among the common conditions affecting children worldwide. The incidence of these conditions among school children reflects deficiencies in education standards, access to healthcare services and socioeconomic status, particularly in developing nations where healthcare resources remain rudimentary.

Childhood is considered as the ideal period for the inculcation of healthy habits such as regular tooth brushing ,using a fluoride based toothpaste, flossing, rinsing after meals, reducing sugary food consumption, and attending periodic dental check-ups. As children are very receptive to behavior modification during these formative years and such habits persist till adulthood, teaching oral hygiene practices at an early age is required for preventing future dental problems and promoting healthy lifestyles (10) (4) (14). Lack of awareness often contributes to the development of dental diseases among children.

The eruption of permanent teeth during school going period highlights the importance of maintaining a good oral hygiene even more. Between the ages of six and twelve years, children undergo a transitional phase in which both primary and permanent teeth coexist (12). Newly erupted teeth are greater vulnerable to dental caries because the enamel is still not fully mature. If oral hygiene is neglected, children become highly susceptible to gum inflammation, plaque accumulation, colonization by bacteria, and subsequent destruction of dental tissues, especiallythe enamel (15). On the other hand regular oral care and preventive guidance during school years are necessary to take care of oral health and prevent long-term complications.

Dental caries is one of the most prevalent oral diseases among children and adolescents (5). It is caused by an interaction of multiple factors like bacteria and other microorganisms, dietary intake, susceptibility and immunity of the host, and oral hygiene measures. Dental caries is preventable with the correct methodology but it still continues

to affect children all over the globe (11). In addition to dental caries, periodontal diseases are common among school-aged children (5). In untreated cases such disorders have the potential to exaggerate pain, pulpal infection, abscess formation, difficulty in eating, all culminating in poor performance at school.These infections can also interfere with speech development, social interaction, and self-esteem.

There is a strong relationship between oral and systemic health (3). Recent times demand oral health to be viewed in a holistic manner, connecting it to other parameters of the body as well, rather than an independent entity(9). Poor dental health can disturb nutrition and dietary intake due to reduced chewing ability and thereby food intake (8). Inadequate nutrition impairs physical growth as well as cognitive development.

The psychological consequences and social stigmas associated with poor oral health among children are highly significant (13). Dental disorders negatively impact facial appearance and speech, and in turn lower public confidence. Children might also experience social embarrassment and issues with self esteem. Hence maintaining good health of teeth is essential for emotional upliftment of the child.

Among the several factors that contribute to differences in dental health awareness and hygiene practices among children, socioeconomic status is one of the most influential. Families with higher income and educational standards are more aware about preventive healthcare . They also have better and greater access to dental setups and trained professionals (17). In contrast, economically disadvantaged families succumb to financial limitations, lack of proper amenities and insufficient awareness regarding oral health. These determinants contribute to differences in oral health outcomes among children from different strata of schools.

The educational status of parents plays an equally pivotal role in fostering oral health behavior of children. Parents serve as primary role models and home acts as the first school for children (19). Parents who are less educated, fall prey to myths and misconceptions, especially in a traditional society like India. It is a bogus perspective that deciduous teeth are to ultimately exfoliate and hence do not need any treatment in general. Such a notion contributes to the progression of dental diseases in childhood (21). Mothers play a special role with regard to child oral health. Mothers with a positive outlook toward preventive care are more likely to supervise their children's brushing habits and seek timely dental treatment . On the other hand the lack of parental awareness can result in neglected oral hygiene delayed dental treatment, ultimately culminating in long term issues.

The atmosphere at the school also exerts an impact on children's behavior. Educational institutions are ideal settings for conveying health information. Teachers and peer groups also influence behaviors during this stage (7). School oral health education programs ,lectures, audiovisual presentations, poster making, campaigns and sessions can improve children's attitude towards dental health. Studies have demonstrated how well school oral health programs relieve dental diseases by promoting oral hygiene practices among children. Dental screenings, fluoride application, pit and fissure sealants have proved to be a great boon. It proves to be an even more advantageous tool in rural underprivileged regions where access to dental care is limited.

Differences between private and government schools impacts oral health awareness among children. Private schools are better equipped with improved infrastructure, latest resources and greater parental involvement. Students attending private schools usually are able to bear the high expenditure of such institutions, because they belong to families with higher socioeconomic status and better educational backgrounds. Hence they automatically have greater exposure to health services, healthy dietary regimens, and opportunities for timely dental visits (20).Unfortunately, government schools usually cater to children from low income families and poor educational backgrounds. Research has shown that children studying in government schools display poor oral behaviors and higher indices of dental caries compared to private school students. Here limited resources contribute to inadequate oral health awareness.

Government schools built in rural areas face additional challenges and problems such as non availability of skilled healthcare professionals, poor sanitation- ventilation, lack of dental health programs and hardly any healthcare opportunities. This further highlights the need for comparative studies to analyze differences in oral hygiene among children studying in private and government educational institutions.Though urban communities witness improved awareness with regard to dental care, rural belts still experience poor oral health services and education. The pediatric population of India is robust. It further mandates implementation of oral health programs , especially at the school level (4).

Government organizations and educational settings should collaborate to strengthen oral health promotion initiatives in schools. Oral health screening camps and preventive dental services should be conducted in all elementary schools (16). Public oral health campaigns via multi media and technology should be promoted. Playful teaching methodology should be employed to enhance child engagement and retention of knowledge.

Schools and other institutions provide the best platform for delivering oral health education when the target audience is children. Through combined efforts and coordination involving schools, parents, dentists, and authorities in power, it is possible to cultivate healthy oral hygiene behaviors and dampen the brunt of oral diseases for generations to come.

Review Of Literature

Several studies have highlighted the importance of oral health awareness in prevention of dental diseases. Research shows that individuals use toothbrushes and toothpaste, but the correct method and frequency of brushing are still not upto the mark. Majority of individuals brush just once daily, which is insufficient for maintaining adequate oral hygiene. It is seen that awareness about adjunct cleanliness aids such as dental floss and mouthwash still remains low, even among populations with higher educational status. Most candidates seek dental treatment only when experiencing extreme discomfort. Preventive dental visits are not common, rather one approaches the dentist only in case of an emergency pain. Furthermore, studies have witnessed that the knowledge among masses regarding the link between oral health and systemic health is quite limited. Poor oral hygiene has been related to cardiovascular conditions, diabetes, and respiratory tract infections. Research portrays that school based oral health education programs have been found to significantly enhance awareness and improve hygiene practices among children, suggesting that early intervention proves to be highly effective.

Aim And Objectives

Aim

To assess and compare oral health knowledge and awareness among elementary school children in private and government schools.

Objectives

1.To evaluate oral hygiene practices among children

2.To assess knowledge regarding oral health hygiene

3.To compare awareness levels between private and government school children

4.To identify gaps in oral health knowledge and behavior

5.To suggest preventive strategies

Materials And Methods

Study Design

A cross-sectional questionnaire-based comparative study.

Study Setting

Selected private schools and government schools.

Study Population

- Total sample: 270 children
- Private schools: 145
- Government schools: 125
- Age group: 6–12 years

Inclusion Criteria

- Children present on the day of survey
- Children willing to participate

Exclusion Criteria

- Children with systemic illness contributing to oral disease
- Incomplete responses of participants

Sampling Technique

Simple random sampling method.

Data Collection Tool

A structured questionnaire divided into the following sections:

- Demographic details
- Oral hygiene practices
- Knowledge and awareness
- Attitude toward oral hygiene
- Influence of school on oral health
- Knowledge regarding preventive dental care

Data Collection Procedure

Primary data collected via administration of questionnaire. Children were guided and supervised while filling the questionnaire. Questions were explained in simple language.

Statistical Analysis

- Data entered into tables
- Percentage and comparative analysis performed

Questionnaire

Section A: Demographic Details

•Age: years

•Gender:

☐Male

☐Female

•Type of School:

☐Private School

☐Government School

•Class/Grade:

☐1st

☐2nd

☐3rd

☐4th

☐5th

☐6th

•Area of Residence:

☐Urban

☐Rural

Section B: Oral Hygiene Practices

•How often do you brush your teeth?

☐Once daily

☐Twice daily

☐More than twice

•When do you usually brush your teeth?

☐Morning only

☐Night only

☐Morning and night

☐random time

•What do you use to clean your teeth?

☐Toothbrush and toothpaste

☐Tooth powder

☐Finger

☐Neem stick

☐Other:

•How often do you change your toothbrush?

☐Every month

☐Every 3 months

☐Every 6 months

☐Only when damaged

•Do you rinse your mouth after eating food?

☐Always

☐Sometimes

☐Never

•Do you clean your tongue?

☐Yes

☐No

•Do you use dental floss?

☐Yes

☐No

☐Don't know what floss is

Section C: Knowledge and Awareness

•Do you think brushing teeth is important?

☐Yes

☐No

•How many times should we brush our teeth in a day?

☐Once

☐Twice

☐More than twice

☐Don't know

•Can eating too many sweets cause tooth decay/cavities

☐Yes

☐No

☐Don't know

•Can dirty teeth lead to bad breath and gum problems?

☐Yes

☐No

☐Don't know

•Is visiting a dentist important even if there is no pain?

☐Yes

☐No

☐Don't know

•Do you think oral health affects general body health?

☐Yes

☐No

☐Don't know

•Who taught you about brushing and oral hygiene?

☐Parents

☐Teachers/ school

☐Dentist

☐Television/Internet

☐Friends

☐Nobody

Section D: oral health and school

•Do your teachers talk about oral hygiene at school?

☐Yes

☐No

•What do you usually eat during school recess?

☐Fruits

☐Homemade food

☐Chips/snacks

☐Chocolates/candies

☐Soft drinks

•does your school conduct dental camps or oral hygiene programs

☐yes

☐no

•Would you participate in school dental health activities?

☐Yes

☐No

Section E: Knowledge Regarding Preventive Dental Care

•Have you heard about fluoride toothpaste?

☐Yes

☐No

•Do you know that milk and healthy foods help keep teeth strong?

☐Yes

☐No

•Can bleeding gums be a sign of gum disease?

☐Yes

☐No

☐Don't know

Results

Table 1. Oral Hygiene Practices (N = 270)

Question	Response	Frequency	Percentage (%)
How often do you brush your teeth?	Once daily	120	44.4
	Twice daily	138	51.1
	More than twice	12	4.5
When do you usually brush?	Morning only	122	45.2
	Night only	8	3.0
	Morning and night	129	47.8
	Random time	11	4.0
What do you use to clean teeth?	Toothbrush & toothpaste	242	89.6
	Tooth powder	10	3.7
	Finger	9	3.3

The findings related to oral hygiene practices among the participants revealed that slightly more than half of the children (51.1%) reported brushing their teeth twice daily, while 44.4% brushed only once daily and 4.5% brushed more than twice a day. Nearly half of the respondents (47.8%) brushed both in the morning and at night, whereas 45.2% brushed only in the morning. The majority of the children (89.6%) used a toothbrush and toothpaste for cleaning their teeth.

Regarding toothbrush replacement, 50.7% changed their toothbrush every three months, while 19.3% replaced it every six months. About 60.4% of the participants reported always rinsing their mouth after meals, and 69.6% practiced tongue cleaning. However, the use of dental floss was notably poor, with only 8.9% reporting its use, while 24.1% of the children were unaware of what dental floss was.

Table 2. Knowledge and Awareness (N = 270)

Question	Response	Frequency	Percentage (%)
Is brushing important?	Yes	256	94.8
	No	14	5.2
How many times should teeth be brushed?	Once	36	13.3
	Twice	201	74.4
	More than twice	11	4.1
	Don't know	22	8.2
Can sweets cause tooth decay?	Yes	198	73.3
	No	28	10.4
	Don't know	44	16.3
Can dirty teeth cause bad breath/gum problems?	Yes	208	77.0
	No	19	7.0
	Don't know	43	15.9
Is dentist visit important without pain?	Yes	130	48.1
	No	71	26.3
	Don't know	69	25.6
Does oral health affect general health?	Yes	149	55.2
	No	52	19.3
	Don't know	69	25.6

Assessment of oral health knowledge demonstrated that a vast majority of the participants (94.8%) believed that brushing teeth is important. Nearly three-fourths of the children (74.4%) correctly identified that teeth should be brushed twice daily. Awareness regarding the harmful effects of sugary foods was relatively high, with 73.3% recognizing that excessive consumption of sweets could cause tooth decay. Similarly, 77.0% of the respondents understood that poor oral hygiene could lead to bad breath and gum problems. Nevertheless, knowledge about preventive dental care was limited, as only 48.1% considered regular dental visits necessary even in the absence of pain. Furthermore, just over half of the participants (55.2%) were aware of the relationship between oral health and general body health.

Table 3. Source of Oral Health Information (N = 270)

Source	Frequency	Percentage (%)

Parents	121	44.8
Teachers/School	65	24.1
Dentist	28	10.4
Television/Internet	21	7.8
Friends	16	5.9
Nobody	19	7.0

Parents emerged as the primary source of oral health information for the study participants, accounting for 44.8% of responses. Teachers and schools contributed to oral health education in 24.1% of the cases, highlighting the important role of educational institutions in health promotion. Dentists served as a source of information for only 10.4% of the children, while television and internet media accounted for 7.8%. Friends were identified as a source by 5.9% of respondents. Notably, 7.0% of the children reported that they had never received any information regarding oral hygiene from any source.

Table 4. Oral Health and School (N = 270)

Question	Response	Frequency	Percentage (%)
Teachers discuss oral hygiene	Yes	159	58.9
	No	111	41.1
Food eaten during recess	Fruits	44	16.3
	Homemade food	115	42.6
	Chips/snacks	56	20.7
	Chocolates/candies	38	14.1
	Soft drinks	17	6.3
School conducts dental camps	Yes	89	33.0
	No	181	67.0
Will participate in dental activities	Yes	235	87.0
	No	35	13.0

With respect to school-related oral health practices, 58.9% of the children reported that their teachers discussed oral hygiene in school, while 41.1% stated otherwise. Analysis of dietary

habits during school recess showed that homemade food was the most commonly consumed item (42.6%), followed by chips and snacks (20.7%), fruits (16.3%), chocolates and candies (14.1%), and soft drinks (6.3%). Only one-third

of the participants (33.0%) reported that their schools conducted dental camps or oral health programs. Encouragingly, a large majority of the

respondents (87.0%) expressed willingness to participate in school-based dental health activities.

Table 5. Preventive Dental Care Knowledge (N = 270)

Question	Response	Frequency	Percentage (%)
Heard of fluoride toothpaste	Yes	106	39.3
	No	164	60.7
Milk and healthy foods strengthen teeth	Yes	215	79.6
	No	55	20.4
Bleeding gums indicate gum disease	Yes	121	44.8
	No	49	18.1
	Don't know	100	37.0

The assessment of preventive dental care knowledge disclosed inadequate awareness among the participants. Only 39.3% of the children had heard about fluoride toothpaste, whereas 60.7% were not aware of it. On the other hand, a majority of respondents (79.6%) recognized the importance of milk and healthy foods in maintaining strong teeth. Knowledge regarding signs of gum disease was comparatively limited, with 44.8% correctly identifying bleeding gums as an indicator of gum disease, while 37.0% were uncertain and 18.1% failed to recognize the association. These findings indicate considerable gaps in children's understanding of preventive oral healthcare measures.

Discussion

The present study reveals considerable disparities in oral health awareness between the two sectors, private and government school children. These findings correlate with previous research and studies, indicating that socioeconomic factors have a major impact on oral health behavior.

Private school children showcase better knowledge and hygiene practices, probably due to higher parental education status, better exposure to technology and latest information, and access to timely dental services . However, even among private school children, habits such as flossing and daily dental visits were not found to be adequate. On the other hand , government school children showed lower level of awareness and poor oral hygiene practices, which can be attributed to lack of health education programs at school and negligible access to dental care. The findings emphasize the urgent need for comprehensive oral health care education programs, especially at the level of schools.

References

1. Tomar SP, Kasar PK, Tiwari R. Study of oral hygienic practices and oral health status among school children in Jabalpur, Madhya Pradesh: a cross-sectional study. Int J Community Med Public Health. 2016;3(2):403-407. doi:10.18203/2394-6040.ijcmph20160093.
2. Al-Darwish MS. Oral health knowledge, behaviour and practices among school children in Qatar. Dent Res J (Isfahan). 2016 Jul-Aug;13(4):342-353. doi:10.4103/1735-3327.187885.
3. Almalki SA, Adil AH, Mustafa M, Karobari MI. Assessing oral health knowledge among public school children in Saudi Arabian subpopulation. J Health Popul Nutr. 2024;43(1):126. doi:10.1186/s41043-024-00617-0.

4. Yuwanati M, Mhaske S, Keswani H, Jain L. Evaluation of oral health awareness among public school children: a school-based study from Bhopal. Arch Med Health Sci. 2018;6(2):214-219. doi:10.4103/amhs.amhs_86_17.
5. Gurav KM, Shetty V, Vinay V, Bhor K, Jain C, Divekar P. Effectiveness of oral health educational methods among school children aged 5–16 years in improving their oral health status: a meta-analysis. Int J Clin Pediatr Dent. 2022;15(3):338-349. doi:10.5005/jp-journals-10005-2395.
6. Riolina A, Hartini S, Suparyati. Dental and oral health problems in elementary school children: a scoping review. Pediatr Dent J. 2020;30(2):106-114. doi:10.1016/j.pdj.2020.04.001.
7. Bayraktar Nahir C, Coşgun A, Şahin ND, Altan H. Primary school children's oral hygiene knowledge assessed with different educational methods: a cross-sectional study. BMC Oral Health. 2025;25(1):148. doi:10.1186/s12903-025-05493-6.
8. Tortora G, Farronato M, Gaffuri F, Carloni P, Occhipinti C, Tucci M, et al. Survey of oral hygiene habits and knowledge among school children: a cross-sectional study from Italy. Eur J Paediatr Dent. 2023;24(3):194-200. doi:10.23804/ejpd.2023.1812.
9. Bhuiyan MAA, Anwar HB, Anwar RB, Ali MN, Agrawal P. Oral hygiene awareness and practices among a sample of primary school children in rural Bangladesh. Dent J (Basel). 2020;8(2):36. doi:10.3390/dj8020036.
10. Ghimire D, Mathur A. Knowledge and awareness about oral health in school going children of Chitwan district of Nepal. Am J Psychiatr Rehabil. 2025;28(1):731-738. doi:10.69980/ajpr.v28i1.176.
11. Kumar R, Joshi D. Awareness of dental hygiene amongst the primary school children of low socio-economic strata. Int J Contemp Pediatr. 2017;4(1):28-35. doi:10.18203/2349-3291.ijcp20164439.
12. Yuwanati M, Mhaske S, Keswani H, Jain L. Evaluation of oral health awareness among public school children: a school-based study from Bhopal. Arch Med Health Sci. 2018;6(2):214-219. doi:10.4103/amhs.amhs_86_17.
13. Sharma P, Singh A, Kaur H, Sharma R. Assessment of oral health knowledge, attitude, and practices among school children: a cross-sectional study. J Cardiovasc Dis Res. 2024;15(6):1758-1764.
14. Jayalekshmi CS, Birajdar SS, Keerthana C, Gurav RB. Oral health problems among school children in rural area: a cross-sectional study. Int J Community Med Public Health. 2024;11(3):1277-1281. doi:10.18203/2394-6040.ijcmph20240632.
15. Nath SK, Noor AE, Podder CP, Chowdhury MTH. Oral health behavior and dental caries status: a comparative study between rural and urban school-going children in Dhaka Division. Update Dent Coll J. 2022;12(1):3-7. doi:10.3329/updcj.v12i1.56122.
16. Penigalapati S, Ramachandruni N, Thammi Setty S, et al. Oral health status and treatment needs among school children of urban, rural and tribal communities in Mahabubnagar district, Telangana: a cross-sectional study. J Indian Assoc Public Health Dent. 2023;21(2):146-150. doi:10.4103/jiaphd.jiaphd_209_21.
17. Singh A, Singh K. Prevalence of dental caries among children attending public versus private schools: a cross-sectional comparative analysis. Bioinformation. 2025;21(12):4668-4672. doi:10.6026/973206300214668.
18. Naidoo S, Myburgh N. Nutrition, oral health and the young child. Matern Child Nutr. 2007;3(4):312-321. doi:10.1111/j.1740-8709.2007.00115.x.
19. Yazdani R, Nasr Esfahani E, Kharazifard MJ. Relationship of oral health literacy with dental caries and oral health behavior of children and their parents. J Dent (Tehran). 2018;15(5):275-282.
20. Naavaal S, Lamsal R. Understanding the relationship between children's oral health utilization and parent's use of healthcare services. Front Oral Health. 2025;6:1541045. doi:10.3389/froh.2025.1541045.
21. Kaur B. Evaluation of oral health awareness in parents of preschool children. Indian J Dent Res. 2009;20(4):463-465. doi:10.4103/0970-9290.59455.