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A STUDY TO ASSESS THE KNOWLEDGE AND PRACTICE REGARDING DENTAL HYGIENE AMONG SCHOOL-GOING CHILDREN IN A SELECTED SCHOOL AT KISHANGANJ, BIHAR

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ABSTRACT

Background: Dental hygiene is an important component of child health, and inadequate oral hygiene may contribute to dental caries and other oral health problems. School-based assessment of knowledge and practice can help identify areas for health education. **Objectives:** To assess the level of knowledge and practice regarding dental hygiene among school-going children, determine the correlation between knowledge and practice, and examine their association with selected socio-demographic variables. **Methods:** A quantitative, non-experimental descriptive design was used among 60 children studying in the 6th and 7th standards at Government Sardar Gopal Singh Middle School, Kishanganj, Bihar. Non-probability convenience sampling was used. Data were collected using a socio-demographic proforma, a 12-item self-structured knowledge questionnaire, and a 10-item practice checklist. Descriptive statistics and chi-square analysis were used; correlation between knowledge and practice was assessed using a correlation coefficient. **Results:** Among the 60 children, 48.3% had moderately adequate knowledge, 40.0% had adequate knowledge, and 11.7% had inadequate knowledge. Adequate dental hygiene practice was reported by 85.0%, while 15.0% had inadequate practice. Knowledge was not significantly correlated with practice ($r = -0.102$, $p = 0.436$). No significant association was found between knowledge level and age, gender, dietary pattern, residence, parental education, family income, or previous knowledge. Likewise, practice was not significantly associated with the selected demographic variables. **Conclusion:** Most children demonstrated adequate practice but only moderate knowledge. The absence of a significant relationship between knowledge and practice indicates the need for continuing, age-appropriate and school-based oral health education rather than relying on knowledge alone.

Keywords: dental hygiene; school-going children; knowledge; practice; oral health; school health.

INTRODUCTION

Dental hygiene is an essential component of oral and overall health. Poor dental hygiene may contribute to dental caries, periodontal disease and other oral health problems. Children are particularly important for preventive oral health interventions because healthy habits established during childhood can influence lifelong practices.

School-based dental health education provides an opportunity to promote appropriate oral hygiene practices among children. However, previous studies cited in the research project indicate gaps between children's knowledge and their actual oral health practices, including inadequate brushing habits and limited utilization of dental services.

Background of the Study

Dental hygiene is an essential part of oral and overall health. Poor dental hygiene can contribute to dental caries, gum disease and other oral health problems. Children are an important group for oral health promotion because habits developed during childhood may continue into adulthood. Inadequate knowledge, improper brushing habits, unhealthy dietary practices and limited access to dental care may affect children's oral health. Therefore, assessing dental hygiene knowledge and practices among school-going children is important for planning effective school-based oral health education. The present study was undertaken to assess the knowledge and practice regarding dental hygiene among school-going children in a selected school at Kishanganj, Bihar.

Significance and need for the study

Poor dental hygiene can lead to dental caries, gum disease and other oral health problems. Developing appropriate oral hygiene habits during childhood is important for maintaining oral health throughout life. School-based oral health education provides an opportunity to improve children's awareness and encourage healthy dental practices. Therefore, assessing the knowledge and practice of dental hygiene among school-going children is important for identifying gaps and planning appropriate health education interventions. The present study is significant for school health nurses, teachers and healthcare professionals in developing age-appropriate dental health education and preventive programmes for children. It may also provide baseline information for future research and intervention studies.

Statement of the study

"A Study to Assess the Knowledge and Practice Regarding Dental Hygiene Among School-Going Children in a Selected School at Kishanganj, Bihar."

Objectives of the study

- ❖ To assess the level of knowledge regarding dental hygiene among school-going children.
- ❖ To assess the level of practice regarding dental hygiene among school-going children.
- ❖ To determine the correlation between knowledge and practice regarding dental hygiene among school-going children.
- ❖ To determine the association between knowledge score and selected socio-demographic variables.
- ❖ To determine the association between practice score and selected socio-demographic variables.

Operational Definitions

Assess: Refers to evaluating the knowledge and practice regarding dental hygiene among school-going children.

Knowledge: Refers to the understanding of school-going children regarding dental hygiene, measured using a structured knowledge questionnaire.

Practice: Refers to the dental hygiene practices of school-going children, measured using a practice checklist.

Dental Hygiene: Refers to the practice of maintaining good oral health through regular cleaning and care of the teeth, gums and mouth.

HYPOTHESES

Null Hypotheses (H_0)

- ✓ H_{01}: There will be no significant correlation between the level of knowledge and practice regarding dental hygiene among school-going children.
- ✓ H_{02}: There will be no significant association between the level of knowledge and practice regarding dental hygiene and selected socio-demographic variables.

Research Hypotheses (H_1)

- ✓ H_1: There will be a significant correlation between the level of knowledge and practice regarding dental hygiene among school-going children.
- ✓ H_2: There will be a significant association between the level of knowledge and practice regarding dental hygiene and selected socio-demographic variables.

Assumptions

- School-going children may have inadequate knowledge regarding dental hygiene.
- School-going children may have some knowledge regarding dental hygiene.
- Children may be at risk of dental hygiene problems.

Delimitations

The study was delimited to:

- Children studying in the 6th and 7th standards.
- Children studying at Government Sardar Gopal Singh Middle School, Kishanganj, Bihar.
- A sample of 60 school-going children was included in the study.

Review of literature

Studies related to knowledge and practice of dental hygiene

Prabhu Subbaraman, Maurya Baskaran et al. (2022) conducted a cross-sectional descriptive study among 228 school children in Thirukalukundram Taluk, Chengalpattu district. The study assessed knowledge, attitude and practices related to oral hygiene. About 57.3% knew that bleeding gums indicate gum disease, 61.6% knew symptoms of dental caries, and 77.3% were aware of the importance of brushing before bedtime. However, 74.4% had never visited a dentist even when experiencing discomfort.

Ravi Kumar and Deepak Joshi (2017) conducted a questionnaire-based cross-sectional study among 1,000 school children aged 5–12 years. Dental examination revealed a dental caries prevalence of 31.6%. Only 16.3% of children were fully aware of dental hygiene, 61.7% brushed in the morning, and 52.3% had never visited a dentist.

Umadevi et al. (2020) studied 250 primary school children aged 8–10 years in Kancheepuram district. The study found that 65.6% had good knowledge of oral hygiene, but only 10.8% had good oral hygiene practices, demonstrating a gap between knowledge and practice.

Priya M. et al. (2012) conducted a descriptive study among 592 children in Chennai. The study found significant differences in knowledge and tooth-brushing practices across age groups and reported differences in dental visits according to gender and age.

Research Methodology

The present study was conducted to assess the knowledge and practice regarding dental hygiene among school-going children in a selected school at Kishanganj, Bihar. The methodology was planned according to the objectives of the study.

Research Approach

A quantitative research approach was adopted for the study.

Research Design

A descriptive, non-experimental research design was used to assess the knowledge and practice regarding dental hygiene.

Variables

Independent Variables: Selected socio-demographic variables such as age, gender, dietary pattern, area of residence, parental education, family income and previous knowledge regarding dental hygiene.

Dependent Variables: Knowledge and practice regarding dental hygiene among school-going children.

Study Setting

The study was conducted at Government Sardar Gopal Singh Middle School, Kishanganj, Bihar.

Population

Target Population: School-going children.

Accessible Population: Children studying at Government Sardar Gopal Singh Middle School, Kishanganj.

Sample

The sample consisted of school-going children studying in the selected school.

Sample Size

The sample size was 60 school-going children.

Criteria for Sample Selection

Inclusion Criteria

Children who:

- ✓ Were studying in the 6th or 7th standard.
- ✓ Were willing to participate in the study.
- ✓ Were available at the time of data collection.

Exclusion Criteria

Children who:

- ✓ Were absent during data collection.
- ✓ Were unwilling to participate.
- ✓ Were studying above the 7th standard.

Sample Attrition

The source study does not report any sample attrition or dropout. The final sample consisted of 60 children.

Sampling Technique

A non-probability convenience sampling technique was used to select 60 eligible school-going children.

Sample Size Calculation

The study included a fixed sample of 60 children. The original research report does not provide a formal statistical sample-size calculation or formula.

Tool Development, Description and Scoring Interpretation

The data collection tool was developed after reviewing relevant literature, previous research studies and expert opinions.

The tool consisted of three sections:

Section A: Socio-demographic proforma containing 8 items.

Section B: Self-structured knowledge questionnaire containing 12 questions. Each correct answer received 1 mark, giving a maximum score of 12.

Section C: Practice checklist containing 10 questions. Each correct response received 1 mark, giving a maximum score of 10.

Content Validity

The tool was validated by 16 nursing experts from Mata Gujri College of Nursing. Their suggestions were incorporated, and necessary questions were added, modified or deleted before finalization.

Reliability

The original research report does not clearly provide a numerical reliability coefficient for the knowledge questionnaire or practice checklist. Therefore, a reliability value should not be added without verification from the original records.

Tool Development and Description of Intervention

The tools were developed through a review of literature, previous research and consultation with experts and the research guide. The study was descriptive and non-experimental; therefore, no structured intervention was administered as part of the study.

Content Validity of the Tool

Content validity was established through review by 16 nursing experts. Their recommendations were incorporated into the final data collection tools.

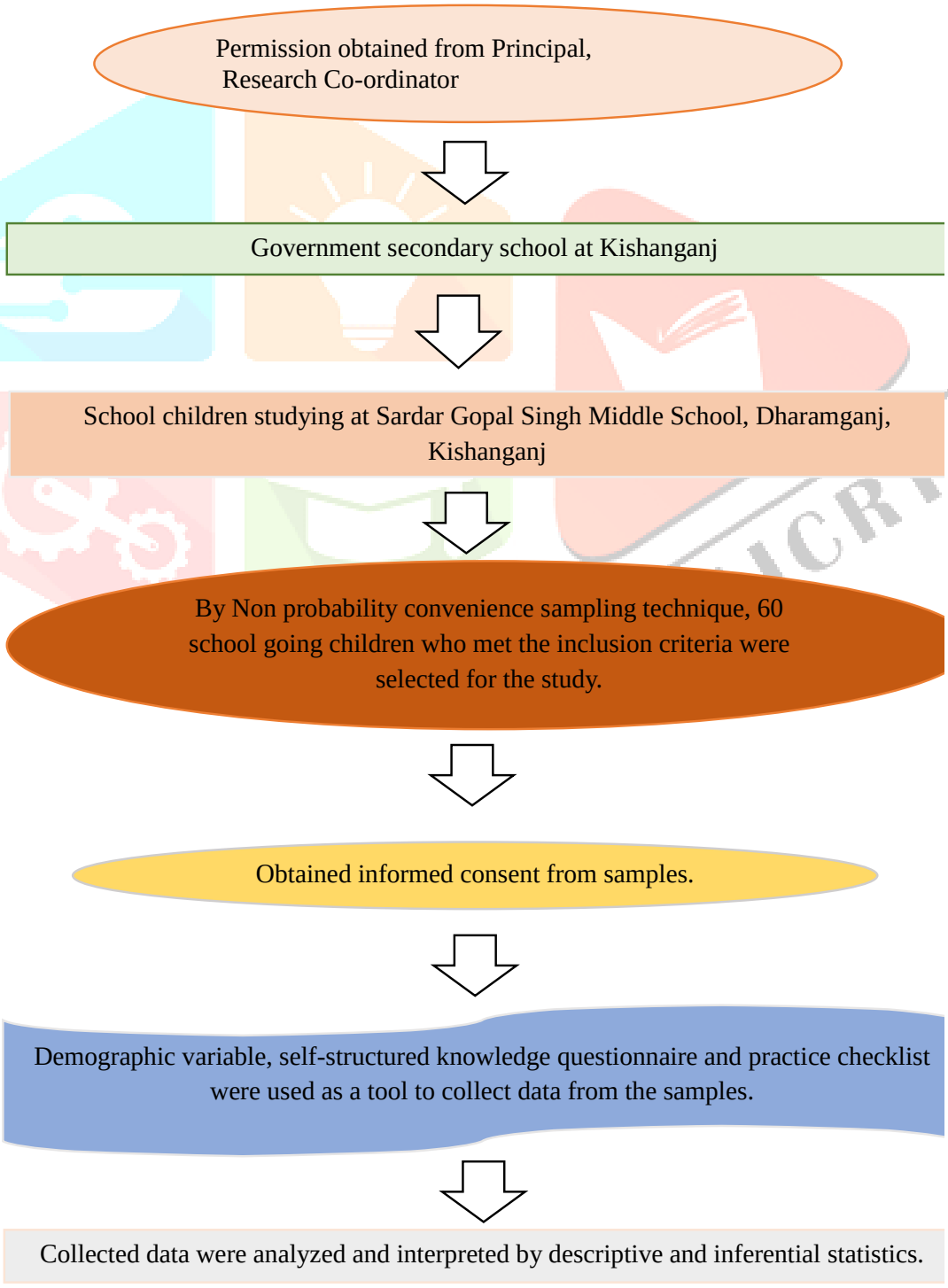
Pilot Study

The available research report does not provide sufficient information about a separate pilot study. Therefore, details such as pilot sample size, procedure and findings should be added only after verification from the original research records.

Method of Data Collection Procedure

Permission was obtained from the concerned school authorities. Eligible children were selected using convenience sampling. Informed consent was obtained from the participants. The socio-demographic proforma, knowledge questionnaire and practice checklist were then used to collect the required data.

Figure 1: SCHEMATIC REPRESENTATION RESEARCH OF STUDY



Plan for Data Analysis

The collected data were analyzed using descriptive and inferential statistics.

Descriptive Statistics

Frequency and percentage were used to describe the socio-demographic characteristics and levels of knowledge and practice.

Inferential Statistics

Chi-square test was used to determine the association between knowledge/practice and selected socio-demographic variables. A correlation coefficient was used to determine the relationship between knowledge and practice.

Ethical Consideration

Permission was obtained from the concerned school authorities before data collection. Informed consent was obtained from the participants, and confidentiality of the information provided by the children was maintained. The original study documentation also includes a tool validity certificate and expert validation records.

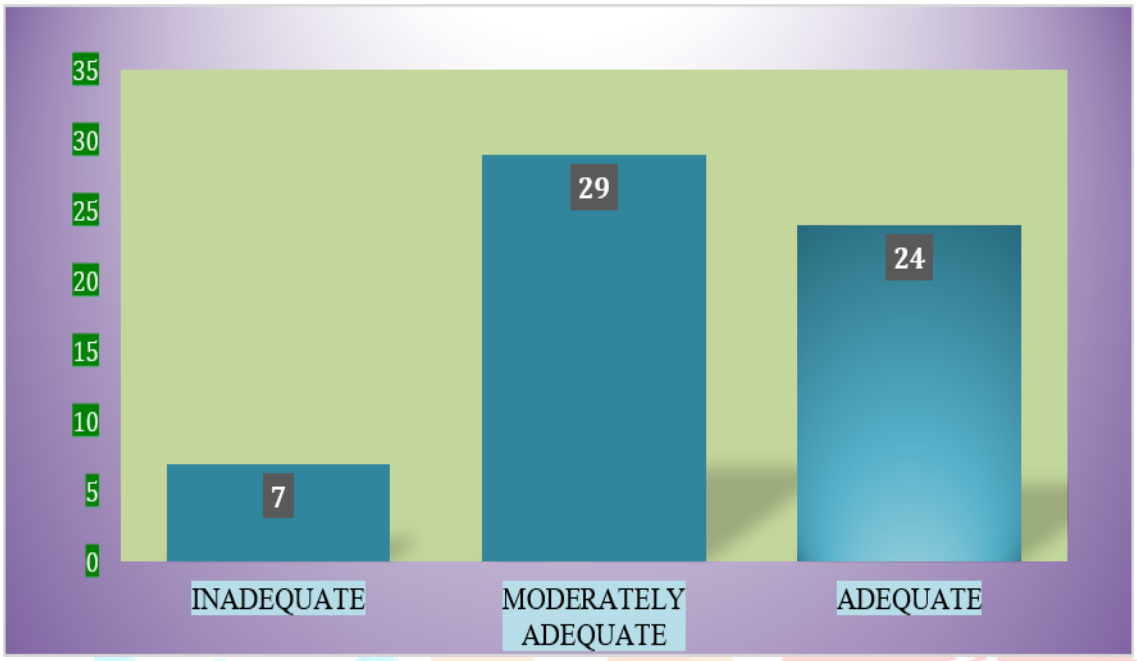
DATA ANALYSIS AND INTERPRETATION

The collected data were analyzed according to the objectives of the study using descriptive and inferential statistics. The results were presented in terms of frequency, percentage, correlation and chi-square test.

The socio-demographic characteristics of the 60 school-going children included age, gender, dietary pattern, area of residence, father's educational status, mother's educational status, monthly family income, and previous knowledge regarding dental hygiene. Among the participants, 14 (23.3%) were aged 10–12 years and 46 (76.7%) were above 12 years. There were 24 (40%) males and 36 (60%) females. Regarding dietary pattern, 11 (18.3%) were vegetarian and 49 (81.7%) followed a mixed diet. Thirteen (21.7%) children belonged to rural areas and 47 (78.3%) to urban areas. The majority of fathers had higher secondary education (48.3%), while most mothers had primary education (50%). Regarding previous knowledge, 41 (68.3%) children reported having previous knowledge about dental hygiene, while 19 (31.7%) reported no previous knowledge.

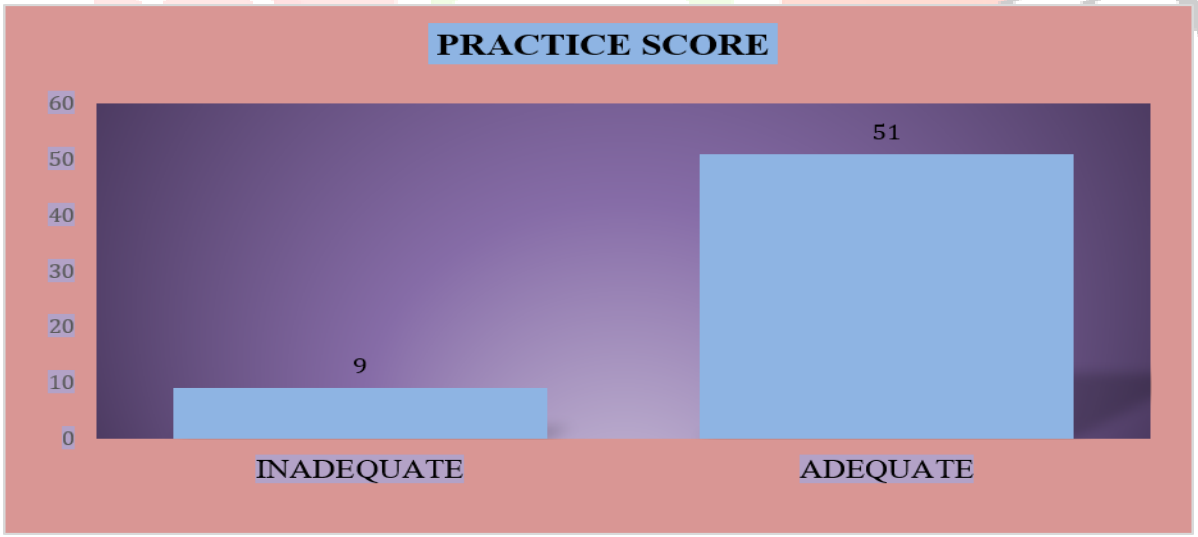
Objective 1: To assess the level of knowledge regarding dental hygiene among school-going children.

Among 60 school-going children, 29 (48.3%) had moderately adequate knowledge, 24 (40.0%) had adequate knowledge, and 7 (11.7%) had inadequate knowledge regarding dental hygiene. Thus, the majority of children had moderately adequate knowledge.



Objective 2: To assess the level of practice regarding dental hygiene among school-going children.

Among 60 children, 51 (85.0%) had adequate dental hygiene practice, while 9 (15.0%) had inadequate practice. Thus, the majority of school-going children demonstrated adequate dental hygiene practices.



Objective 3: To determine the correlation between knowledge and practice regarding dental hygiene.

The correlation analysis showed no statistically significant correlation between knowledge and practice regarding dental hygiene ($p > 0.05$). Therefore, the null hypothesis was accepted.

Objective 4: To determine the association between knowledge score and selected socio-demographic variables.

There was no statistically significant association between knowledge level and selected socio-demographic variables, including age, gender, dietary pattern, area of residence, father's education, mother's education, monthly family income and previous knowledge regarding dental hygiene ($p > 0.05$).

Objective 5: To determine the association between practice score and selected socio-demographic variables.

There was no statistically significant association between practice level and age, gender, dietary pattern, area of residence, parental education, monthly family income or previous knowledge regarding dental hygiene ($p > 0.05$).

The study showed that most children had moderately adequate knowledge (48.3%) and adequate dental hygiene practice (85%). However, knowledge and practice were not significantly correlated, and neither knowledge nor practice was significantly associated with the selected socio-demographic variables. These findings indicate the importance of continuing school-based dental health education to strengthen children's knowledge and maintain appropriate oral hygiene practices.

DISCUSSION

The present study found that 48.3% of children had moderately adequate knowledge and 85% had adequate dental hygiene practices. Similar findings were reported by Konwar and Borah (2019), where 53% of school children had average oral hygiene knowledge.

There was no significant correlation between knowledge and practice regarding dental hygiene. Similarly, no significant association was found between knowledge or practice and the selected socio-demographic variables.

These findings highlight the importance of regular school-based dental health education to strengthen knowledge and maintain appropriate oral hygiene practices among school-going children.

CONCLUSION

The present study concluded that most school-going children had moderately adequate knowledge (48.3%) and adequate dental hygiene practices (85%). No significant correlation was found between knowledge and practice, and no significant association was observed between knowledge or practice and the selected socio-demographic variables.

The findings emphasize the need for regular school-based dental health education to improve knowledge and reinforce healthy dental hygiene practices among children.

NURSING IMPLICATIONS

Nursing Practice

Nurses can provide regular dental health education to school children, demonstrate correct tooth-brushing techniques, encourage healthy dietary habits, and promote regular dental check-ups.

Nursing Education

Nursing education should include the importance of oral health promotion and appropriate methods of teaching dental hygiene to children. Student nurses can participate in school-based dental health education programmes.

Nursing Administration

Nursing administrators can support and organize school dental health programmes, screening camps and health education activities in collaboration with schools and dental professionals.

Nursing Research

The study provides a basis for further research on dental hygiene among school children. Future researchers can conduct larger studies and evaluate the effectiveness of structured dental health education programmes.

Limitations

- ✓ The study was conducted among only 60 school-going children.
- ✓ The study was limited to 6th and 7th standard students.
- ✓ The study was conducted in only one selected school at Kishanganj, Bihar.
- ✓ Convenience sampling was used; therefore, the findings may have limited generalizability.

Recommendations

- ✓ Similar studies may be conducted with a larger sample size.
- ✓ The study may be replicated in multiple schools to improve generalizability.
- ✓ Structured dental health education programmes may be conducted and evaluated.
- ✓ Regular dental screening and health education programmes may be organized in schools.
- ✓ Similar studies may be conducted in different rural and urban settings.

Suggestions for this study

- ✓ Conduct an interventional study to assess the effectiveness of structured dental health education.
- ✓ Include parents and teachers in future oral health education programmes.
- ✓ Use larger and more representative samples in future studies.
- ✓ Conduct follow-up studies to assess whether improved knowledge leads to sustained dental hygiene practices.
- ✓ Future studies may include additional factors such as access to dental services, dietary habits and frequency of dental visits.

Acknowledgement

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Conflict of interest statement

The authors declare that there is no conflict of interest related to this study.

Ethical statement

Permission was obtained from the concerned school authorities before conducting the study. Informed consent was obtained from the participants, and confidentiality and privacy of the information collected from the children were maintained throughout the study. The source research report documents permission, consent and confidentiality procedures.

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