



A COMPARATIVE STUDY OF ORAL HYGIENE PRACTICES AMONG RURAL, SEMI-URBAN AND URBAN POPULATIONS OF NORTH BENGAL, WEST BENGAL

Dentistry

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ABSTRACT

Background: Oral hygiene practices are important determinants of oral health. Differences in education, accessibility to dental services, socioeconomic circumstances and health awareness may contribute to variation in oral hygiene practices between rural, semi-urban and urban populations. **Aim:** To compare oral hygiene practices and dental-care-seeking behaviour among rural, semi-urban and urban populations attending the Dental Outpatient Department of North Bengal Medical College and Hospital. **Materials and Methods:** A cross-sectional study was conducted from January to April 2023 among 1,800 participants aged 18–62 years. Participants were selected by simple random sampling without replacement from patients attending the Dental OPD. Information regarding demographic characteristics, tooth-brushing frequency, oral-cleaning materials and dental attendance was collected through interview using a pre-designed history sheet. Clinical examination was also performed. Results: Of the 1,800 participants, 714 (40%) were rural, 652 (36%) semi-urban and 434 (24%) urban. Once-daily brushing was reported by 63%, 59% and 53%, respectively; twice-daily brushing by 20%, 30.8% and 41%; and neem stick/finger use by approximately 18%, 9.5% and 5.2%. Only 6.43% reported regular dental visits, while 93.57% visited only when needed. **Conclusion:** Residential differences were observed in oral hygiene practices. Rural participants reported lower twice-daily brushing and greater use of traditional oral-cleaning methods. Preventive oral-health education and access to routine dental care may be important in rural communities.

KEYWORDS

Oral Hygiene; Tooth Brushing; Dental Attendance; Rural Population; Semi-urban Population; Urban Population; North Bengal

INTRODUCTION

Oral hygiene practices are fundamental to the prevention of dental caries and periodontal disease. Regular tooth brushing and appropriate oral-cleaning practices help control dental plaque and maintain oral health. However, oral hygiene behaviour varies between populations and may be influenced by demographic, cultural, socioeconomic and geographical factors.

In India, rural communities may experience barriers to preventive dental care because of limited availability of dental services, awareness and differences in health-seeking behaviour. Traditional practices such as the use of neem sticks or fingers may coexist with toothbrush-based practices.

North Bengal contains rural, semi-urban and urban populations with varying access to healthcare services. Understanding differences in oral hygiene practices may help identify areas requiring targeted preventive interventions.

Aim

To compare oral hygiene practices among rural, semi-urban and urban populations of North Bengal.

Objectives

To determine the frequency of tooth brushing among rural, semi-urban and urban participants.

To compare the use of toothbrushes and traditional oral-cleaning methods.

To assess differences in preventive dental-care-seeking behaviour.
To identify residential differences relevant to community oral-health programmes.

Materials and Methods

Study Design and Period

A cross-sectional observational study was conducted from January to April 2023.

Study Setting

The study was conducted among patients attending the Dental Outpatient Department of North Bengal Medical College and Hospital, Siliguri, West Bengal.

Study Population

A total of 1,800 participants aged 18–62 years were included.

The age distribution was 576 (32%) aged 18–30 years, 774 (43%) aged 31–50 years and 450 (25%) aged 51–62 years. There were 1,008 (56%) males and 792 (44%) females.

Residence	Number	Percentage
Rural	714	40%
Semi-urban	652	36%
Urban	434	24%
Total	1800	100%

Sampling

Participants were selected using simple random sampling without replacement.

Inclusion Criteria

Age 18–62 years.

Mentally healthy individuals.

Individuals able to participate in the interview and examination.

Exclusion Criteria

Individuals with severe disease.

Individuals unable to communicate adequately.

Data Collection

Information was collected by interview using a pre-designed history sheet. Variables included demographic characteristics and oral hygiene practices, including tooth-brushing frequency and methods of oral cleaning.

Clinical Examination

Clinical examination was carried out under adequate illumination using a mouth mirror, explorer, periodontal probe and wooden tongue depressor. The Simplified Oral Hygiene Index (OHI-S) described by Greene and Vermillion was used for assessment of oral hygiene.

Data Analysis

Data were entered and analysed using Microsoft Excel 2007. Descriptive statistics were used.

RESULTS

Tooth-Brushing Frequency

Practice	Rural	Semi-urban	Urban
Once daily	63%	59%	53%
Twice daily	20%	30.8%	41%
Neem stick/finger	18%	9.5%	5.2%

Twice-daily brushing was reported most frequently by urban participants and least frequently by rural participants.

Traditional Oral-Cleaning Practices

Use of neem sticks or fingers was more commonly reported among rural participants than among semi-urban and urban participants.

Dental Attendance

Only 6.43% of the overall study population reported visiting a dentist regularly. The remaining 93.57% reported visiting a dentist only when they felt it was necessary.

DISCUSSION

The study demonstrates a residential gradient in oral hygiene practices. Twice-daily brushing was reported by 41% of urban participants compared with 30.8% of semi-urban and 20% of rural participants. Traditional oral-cleaning methods were also more common among rural participants.

Regular dental attendance was low across the study population, indicating that dental services were used predominantly when a problem was perceived rather than as part of routine preventive healthcare.

Because participants were recruited from a hospital Dental OPD, the findings should not automatically be interpreted as representative of the entire population of North Bengal.

Limitations

The study was cross-sectional and cannot establish causal relationships.

Participants were recruited from a Dental OPD rather than through a community-based population survey.

Some oral hygiene practices were self-reported and may be affected by recall or reporting bias.

The original dataset did not provide detailed inferential statistical results for each oral hygiene practice.

The source table and narrative use inconsistent terminology for the third oral-cleaning category; this should be verified against the original data sheet before submission.

CONCLUSION

Residential differences were observed in oral hygiene practices. Rural participants reported less frequent twice-daily brushing and greater use of traditional oral-cleaning methods, whereas twice-daily brushing was more common among urban participants. Routine dental attendance was low, with only 6.43% reporting regular visits.

Recommendations

Strengthen community-based oral-health education in rural areas.

Promote twice-daily tooth brushing using appropriate fluoride toothpaste.

Encourage preventive dental visits.

Integrate oral-health education into primary healthcare programmes.

Improve availability of dental services in underserved rural communities.

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