



Assessment among 18–25-year-old patients regarding knowledge and awareness about oral health and behaviour- A questionnaire-based study

Dr. Kalvikarasi V¹, Dr. D Gayathri², Dr. Pavithra Boobalan¹, Dr. Suryanarayanan¹, Dr. Shanmugam R¹, Dr. Rashmi¹

¹ Senior Lecturer, Department of Prosthodontics and Crown & Bridge, Adhiparasakthi Dental College & Hospital, Melmaruvathur, Tamil Nadu, India

² Adhiparasakthi Dental College & Hospital, Melmaruvathur, Tamil Nadu, India

Abstract

Background: Oral health behaviour established during young adulthood significantly influences long-term dental outcomes. Despite increased awareness, preventive practices remain inconsistent.

Aim: To assess knowledge, awareness, and oral health behaviour among patients aged 18–25 years.

Materials and Methods: A descriptive cross-sectional study was conducted among 250 patients aged 18–25 years attending a dental outpatient department. A structured and validated questionnaire assessed demographic characteristics, oral hygiene practices, knowledge of oral diseases, adverse habits, and dental visit patterns. Data were analyzed using SPSS version 25.0. Descriptive statistics were expressed as frequencies and percentages. Chi-square test was applied to determine associations between variables. Statistical significance was set at $p < 0.05$.

Results: Among 250 participants, 145 (58%) were females and 105 (42%) were males. Brushing twice daily was reported by 72%, while 28% brushed once daily. Fluoride toothpaste use was 81%, floss usage 25%, and mouthwash use 38%. Regular dental visits (every 6–12 months) were reported by 46%, whereas 54% visited only during pain. A statistically significant association was found between gender and brushing frequency ($\chi^2 = 6.84$, $p = 0.009$), and between educational level and fluoride toothpaste use ($\chi^2 = 8.21$, $p = 0.004$).

Conclusion: Although general awareness regarding oral hygiene was satisfactory, preventive practices such as flossing and routine dental visits were inadequate. Targeted oral health education programs are recommended.

Keywords: Oral health awareness, young adults, preventive dentistry, dental behaviour, oral hygiene practices

Introduction

Oral health is a fundamental component of overall health and quality of life. Dental caries and periodontal diseases continue to be the most prevalent oral health conditions worldwide. According to the World Health Organization, untreated dental caries affects approximately 2.3 billion individuals globally, highlighting its substantial public health burden [1].

Young adults aged 18–25 years represent a critical transitional phase marked by increasing independence in health-related decision-making. Oral health behaviours established during this period play a decisive role in determining long-term oral health outcomes. Despite increased access to health information and preventive resources, several studies report inadequate oral hygiene practices and suboptimal utilization of preventive dental services among young adults [2].

Assessing knowledge, awareness, and oral health behaviours in this population is therefore essential for identifying existing gaps and developing effective preventive strategies and targeted public health interventions.

Materials and Methods

Study Design

Descriptive cross-sectional study.

Study Population

250 patients aged 18–25 years attending the outpatient department of a dental institution.

Inclusion Criteria

- Age between 18–25 years
- Willing to participate
- Provided informed consent

Exclusion Criteria

- Medically compromised individuals
- Patients undergoing extensive dental procedures

Data Collection Tool

A structured, pre-validated questionnaire consisting of 20 close-ended questions divided into:

1. Demographics
2. Oral hygiene practices
3. Knowledge of oral diseases
4. Adverse habits
5. Dental visit patterns

Reliability testing showed Cronbach's alpha = 0.84.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS version 25.0. Descriptive statistics (frequency and percentage) were calculated. Chi-square test was applied to assess associations between categorical variables. Statistical significance was set at $p < 0.05$.

Results

1. Demographic Distribution

Variable	Frequency (n=250)	Percentage
Female	145	58%
Male	105	42%

Age Distribution

- 18–21 years: 140 (56%)
- 22–25 years: 110 (44%)

Variable	Frequency	Percentage
Brushing once daily	70	28%
Brushing twice daily	180	72%
Manual toothbrush	235	94%
Electric toothbrush	15	6%

2. Oral Hygiene practices

Variable	Frequency	Percentage
Soft Bristles	175	70%
Medium bristles	75	30%
Fluoride toothpaste use	203	81%
Floss usage	63	25%
Mouthwash usage	95	38%

3. Oral Health Problems

Condition	Frequency	Percentage
Tooth pain/sensitivity	75	30%
Bleeding gums	58	23%
Bad breath	42	17%

4. Adverse Habits

Habit	Frequency	Percentage
Tobacco use	20	8%
Alcohol consumption	48	19%

5. Dental Visit Pattern

Visit Pattern	Frequency	Percentage
Every 6 months	80	32%
Once a year	35	14%
Only when in pain	135	54%

SPSS Statistical Interpretation

Association between Gender and Brushing Frequency

Chi-square analysis revealed a statistically significant association between gender and brushing frequency ($\chi^2 = 6.84$, $df = 1$, $p = 0.009$). Females demonstrated higher prevalence of twice-daily brushing compared to males, indicating better oral hygiene behaviour among female participants.

Association between Educational Status and Fluoride Toothpaste Use

A significant association was found between higher educational level and use of fluoride toothpaste ($\chi^2 = 8.21$, $df = 2$, $p = 0.004$). Participants with undergraduate education showed greater awareness regarding fluoride benefits.

Flossing Practice and Age Group

No statistically significant association was observed between age group and flossing habits ($\chi^2 = 1.92$, $p = 0.16$), suggesting uniformly low floss usage across both age categories.

Tobacco Use and Oral Health Problems

Participants reporting tobacco use demonstrated a higher prevalence of bleeding gums (45%) compared to non-users

(21%). This association was statistically significant ($\chi^2 = 5.73$, $p = 0.017$), indicating tobacco as a contributing factor to periodontal symptoms.

Brushing Frequency and Dental Visits

A statistically significant association was observed between brushing frequency and regular dental visits ($\chi^2 = 7.54$, $p = 0.006$). Individuals brushing twice daily were more likely to attend routine dental check-ups.

Discussion

The present cross-sectional study evaluated oral health knowledge, awareness, and behaviour among 18–25-year-old patients. Young adulthood represents a transitional phase where independent health-related decisions are established, significantly influencing long-term oral health outcomes.

In the present study, 72% of participants reported brushing twice daily. This finding is consistent with Al-Omiri *et al.*,^[1] who reported that approximately 68–75% of university students practiced twice-daily brushing. Similarly, Zhu *et al.*^[2] observed that nearly 70% of Chinese university students brushed twice daily. However, lower prevalence rates (approximately 55%) were reported by Peltzer and Peng³ among young adults in developing regions, indicating socioeconomic and cultural variations in oral hygiene behaviour.

Although brushing frequency was satisfactory, adjunctive oral hygiene practices were limited. Only 25% of participants reported using dental floss. Comparable findings were reported by Halawany *et al.*^[4], where floss use among Saudi young adults was below 30%. Likewise, a study conducted among Indian college students by Dagli *et al.*^[5] demonstrated poor interdental cleaning practices despite acceptable brushing habits. This suggests that while awareness regarding brushing is widespread, comprehensive preventive practices remain inadequate.

Fluoride toothpaste usage in the present study was reported by 81% of participants. This is in agreement with findings by Al-Hussayen^[6], who reported that 78% of young adults used fluoridated toothpaste. Petersen *et al.*^[7] emphasized that fluoride awareness plays a crucial role in caries prevention; however, knowledge does not always translate into correct and consistent usage. The relatively high prevalence of fluoride use in this study may reflect improved accessibility and educational exposure.

A statistically significant association was observed between gender and brushing frequency ($p < 0.05$), with females demonstrating better oral hygiene practices. This finding corroborates studies by Kateeb^[8] and Warren *et al.*^[9], who reported that females generally exhibit superior oral health attitudes and behaviours compared to males. This gender disparity has been attributed to greater aesthetic concerns, health consciousness, and preventive orientation among females.

Regarding dental visit patterns, 54% of participants reported visiting a dentist only when experiencing pain. This symptomatic approach to dental care has been widely documented. Varenne *et al.*^[10] reported that the majority of young adults in developing countries seek dental care primarily for curative rather than preventive reasons. Similarly, Kumar *et al.*^[11] observed that nearly 60% of Indian young adults visited dentists only during emergencies. These findings highlight the persistent lack of emphasis on preventive dental visits.

The present study also demonstrated a statistically significant association between tobacco use and bleeding gums ($p < 0.05$). This finding aligns with the well-established relationship between tobacco consumption and periodontal disease. Johnson and Hill ^[12] reported that smokers are at increased risk for gingival inflammation, periodontal destruction, and impaired healing. Tobacco remains a major modifiable risk factor for periodontal disease among young adults.

Despite moderate levels of awareness, a clear gap between knowledge and behaviour was observed. While participants demonstrated reasonable understanding of brushing and fluoride use, preventive behaviours such as flossing and routine dental visits were suboptimal. Similar discrepancies have been reported globally. Petersen *et al.* ^[7] emphasized that awareness alone is insufficient to produce sustained behavioural change without structured educational reinforcement and community-based preventive programs.

When compared with previous international and Indian studies, the present findings reveal comparable brushing practices but persistent deficiencies in comprehensive preventive oral health behaviour. These results underscore the necessity for targeted oral health promotion strategies, including institutional awareness programs, digital health campaigns, and motivational interviewing approaches to encourage preventive dental care among young adults.

Overall, the study reinforces the global need to bridge the gap between oral health knowledge and actual behavioural compliance in the 18–25-year age group.

Limitations

- Cross-sectional design limits causal inference
- Self-reported responses may introduce recall bias
- Institutional-based sample limits generalizability

Conclusion

The study demonstrates satisfactory awareness regarding basic oral hygiene practices among 18–25-year-old patients. However, preventive measures such as flossing and regular dental visits remain inadequate. Gender and educational status significantly influence oral health behaviour.

Targeted preventive education and community-based oral health promotion programs are recommended to improve behavioural outcomes.

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