

Comparative evaluation between first year dental students and interns regarding oral health and hygiene habits: A questionnaire survey

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Key contribution: This study reveals that clinical training significantly influences dental students' personal oral hygiene habits, with interns demonstrating better evidence-based practices than first-year students, highlighting the need for ongoing reinforcement of self-care principles throughout dental education.

ABSTRACT

Objective: This study aimed to evaluate the awareness of oral health and hygiene habits among the first year dental students and interns.

Materials and Methods: A descriptive cross- sectional survey was circulated among the first year dental students and interns using a self constructed questionnaire comprising 15 questions based on oral health and hygiene habits.

Results: A number of 50 first year dental students and 50 interns were investigated. Concern for oral hygiene and related habits was observed in 92.7% of interns, whereas only 86.4% of first-year dental students showed similar awareness.

Conclusion: To conclude, the study demonstrated that interns are more concerned about their oral hygiene and habits than first year dental students. As dental students gain more academic and hands-on experience, their knowledge and personal habits related to oral health improve. Teaching students about proper oral hygiene early in their training could help them develop good habits that last a lifetime.

Keywords: oral health, oral hygiene habits, dental students, dental interns, awareness

INTRODUCTION

Oral health is more than just having a confident smile it is a cornerstone of overall well-being, influencing not only physical health but also mental and social quality of life.¹ Good oral hygiene helps prevent common dental problems like cavities, gum disease, and bad breath, and it also plays a role in reducing the risk of serious systemic conditions such as heart disease and diabetes. Because of these wide-ranging benefits, oral hygiene is recognised as a vital component of public health initiatives across the globe.²

Studying dental students at different stages of their education offers valuable insights into how academic training shapes not only their professional skills but also their own health practices.³ These comparisons are important for evaluating the impact and effectiveness of preventive oral health education within the dental curriculum.⁴

Dentists and dental students serve as more than just healthcare providers they act as role models who can inspire patients to value and maintain their oral health.⁵ Their own hygiene habits and attitudes directly influence how effectively they can motivate others, which is why instilling strong personal oral care routines during dental school is essential.⁶

For most first-year dental students, the journey begins with limited knowledge and little hands-on clinical experience. Interns, by contrast, have completed the majority of their training, gained substantial exposure to patient care, and are expected to put both their theoretical knowledge and practical skills into practice for their own oral health.⁷ While first-year students may still be in the process of adopting evidence-based oral hygiene routines, interns generally demonstrate a stronger commitment to ideal practices, shaped by their years of education and clinical experience.⁸

The shift from classroom-based learning to real-world clinical training is a turning point in dental education. It reinforces the value of preventive measures like maintaining one's own oral hygiene not just in theory, but as part of everyday practice.⁹ Evidence consistently shows that clinical experience helps dental students improve their own oral health behaviors and deepens their understanding of why these practices matter.¹⁰

MATERIALS AND METHODS

A total of 100 participants (50 interns and 50 first year dental students) were participated in the study. The survey was conducted in school of dental sciences, karad, satara, india. Ethical clearance was taken. A questionnaire was self constructed and was distributed among the participants via Google form platform.

RESULTS

The survey was conducted in dental institute, karad, satara, india. It included 100 participants, out of which 50 interns and 50 first year dental students. This survey compared the study between interns and first years about oral hygiene and habits. The comparative analysis between first-year dental students and interns revealed an overall higher awareness and improved oral care behaviors among dental interns. A larger proportion of interns (80%) brushed their teeth two times a day compared to 70% of first-year students, and 78% brushed for the recommended 2 minutes, while only 48% of first-years did the same. Both groups recognized plaque removal and cavity prevention as the primary purpose of brushing, and 86% in each group knew when to replace toothbrushes. While 90% of first-year students and 96% of interns reported brushing and flossing daily, all participants correctly understood the purpose of flossing.

Awareness of the consequences of poor brushing was also high, with 96% of first-years and 100% of interns identifying plaque and cavities as outcomes. Nearly all participants identified sugary foods as a cause of tooth decay, and most understood fluoride's protective role, with interns (98%) outperforming first-years (90%).

All respondents accurately defined plaque and acknowledged the importance of biannual dental visits (92% of first-years and 98% of interns). Additionally, 98% of first-years and all interns recognized bleeding gums as a sign of poor hygiene, and all agreed on the negative impact of sugary snacks. Interns (96%) were more aware than first-years (84%) about the correct action after vomiting, and more interns (96%) than first-years (86%) knew the benefits of chewing sugar-free gum. Collectively, the data suggest that clinical experience and academic progression significantly enhance oral health awareness and hygiene habits among dental students.

Table 1: Responses

Question no.	options	First year		interns	
		Frequency	percentage	Frequency	percentage
1.How often should you brush your teeth?	Once in a week	1	2%	1	2%
	Once daily	13	26%	8	16%
	Twice daily	35	70%	40	80%
	Every time after eating	1	2%	1	2%
2. How long should you brush your teeth each time?	1 minute	0	0%	0	0%
	2 minutes	24	48%	34	78%
	5 minutes	26	52%	16	32%
	Until I feel cleaned	0	0%	0	0%
3. What is the main purpose of using toothpaste?	To whiten teeth	0	0%	0	0%
	To remove bad breath	0	0%	0	0%
	To remove plaque and protect against cavities	50	0%	49	0%
	To make teeth shiny	0	0%	1	0%
4. When should you replace your	After every 6 months	4	8%	5	10%
	Once in a month	3	6%	2	4%

toothbrush?	Once the bristles are frayed or every 3-4 months	43	86%	43	86%
	Once a year	0	0%	0	0%
5. Which of the following helps prevent gum disease?	Eating green leafy vegetables	0	0%	0	0%
	Brushing and flossing daily	45	90%	48	96%
	Only rinsing with water	5	10%	2	4%
	Avoiding sweet and sugary food	0%	0%	0	0%
6. Why is flossing important?	To remove food residual	0	0%	0	0%
	To clean between teeth where a toothbrush can't reach	50	100%	50	100%
	To remove toothpaste residue	0	0%	0	0%
	To make gums stronger	0	0%	0	0%
7. What can happen if you don't brush your teeth regularly?	Teeth may loosen	0	0%	0	0%
	Plaque buildup and cavities	48	96%	50	100%
	Bleeding Gums	2	4%	0	0%
	Teeth grow faster	0	0%	0	0%
8. Which food is most harmful to your teeth?	Cheese	3	6%	0	0%
	Apples	0	0%	0	0%
	Candy and sugary drinks	47	94%	50	100%
	Carrots	0	0%	0	0%
9. What is the role fluoride in toothpaste?	It adds flavor	1	2%	1	2%
	It strengthens tooth enamel and prevents cavities	45	90%	49	98%
	It makes the toothpaste foam	2	4%	0	0%
	It gives a fresh smell	2	4%	0	0%
10. What is plaque?	A type of toothpaste	0	0%	0	0%
	A hard layer protecting teeth	0%	0%	0	0%
	A sticky film of bacteria on teeth	50	100%	50	100%
	The enamel of the tooth	0	0%	0	0%
11. How often should you visit the dentist for a check-up?	Every month	0	0%	0	0%
	Every 6 months	46	92%	49	98%
	Only if you have a toothache	4	8%	1	2%
	Never	0	0%	0	0%
12. What is a sign of gum disease?	Bright white teeth	0	0%	0	0%
	Gums that bleed when brushing	49	98%	50	100%
	No pain or discomfort	0	0%	0	0%
	Stronger teeth	1	2%	0	0%
13. Which of the following is NOT recommended for good oral hygiene?	Brushing twice a day	0	0%	0	0%
	Flossing daily	0	0%	0	0%
	Eating lots of sugary snacks	50	100%	50	100%
	Using fluoride toothpaste	0	0%	0	0%
14. What should you do after vomiting to protect your teeth?	Brush immediately	5	10%	2	4%
	Rinse your mouth with water or mouthwash before brushing	42	84%	48	96%
	Eat something sugary	2	4%	0	0%

	Do nothing	1	2%	0	0%
15. What is the benefit of chewing sugar-free gum?	Increases tooth decay	0	0%	0	0%
	Cleans teeth instead of brushing	5	10%	2	4%
	Stimulates saliva to help neutralize acids	43	86%	48	96%
	Makes teeth yellow	2	4%	0	0%

DISCUSSION

The current study's comparison of oral hygiene knowledge and practices between first-year students and interns demonstrates a clear increase in awareness as students advance academically and gain clinical experience.

In our study, 80% of interns brushed their teeth two times a day, compared to 70% of first-year students, indicating a 10% improvement. Similar outcomes were observed in the study conducted by Peker et al. (2010), where 82.5% of final-year students reported twice-daily brushing as opposed to 67.4% of first-years, highlighting a comparable shift with academic level.¹¹ Similarly, Al-Wesabi et al. (2018) reported 79.3% of senior students followed the twice-daily brushing regimen, which supports our results and reinforces the notion that clinical exposure improves personal oral hygiene behaviours.¹² When brushing duration was considered, 78% of interns brushed for the recommended 2 minutes, while only 48% of first-years did the same, marking a substantial 30% difference. Comparable data from Singh et al. (2017) reported that only 45.2% of first-year students adhered to the 2-minute brushing guideline, whereas 74.1% of final-year students did, nearly mirroring our outcomes.¹³ This steady improvement shows that clinical training focuses not only on how often interns care for their teeth, but also on how well and how carefully they do it.

Awareness about toothbrush replacement was equally high in both groups (86%), which resonates with results from EIGO-JSTIR Study (2022), who found 72.2% of dental students were aware of the recommended three-month replacement rule, indicating that foundational knowledge is established early and retained throughout dental education.¹⁴

Daily oral hygiene practices, including brushing and flossing, were followed by 96% of interns compared to 90% of first-year students. A similar study by Ahsin E, Ahsin S.(2021) revealed that 86.5% of final-year students practiced daily flossing compared to only 53.1% of first-years, indicating a more pronounced gap than observed in our sample but consistent with the direction of improvement.¹⁵

Regarding awareness of the oral consequences of poor brushing, 100% of interns and 96% of first-years identified plaque and cavities as outcomes. These values are higher than those reported by Halboub et al. (2015), who found 89% of final-year students and 77% of first-years demonstrated this awareness, suggesting that contemporary curricula might be more effective in instilling this critical knowledge.¹⁶

Understanding of fluoride's protective role was also significantly higher among interns (98%) compared to first-years (90%), reflecting an 8% increase. The findings of Mbawalla HS et al. (2022) a study reported fluoride awareness in 65.5% of senior students, while only 42.9% of junior students demonstrated such awareness.¹⁷

Moreover, 100% of interns and 98% of first-years in our study recognized bleeding gums as a sign of poor hygiene, paralleling the findings of Yao et al. (2019), where 79% of interns correctly identified this clinical sign compared to 47-63% of first-years.¹⁸

An important behavioural aspect noted was post-vomiting oral care awareness, where 96% of interns and 84% of first-years responded correctly—a 12% improvement. Singh et al. (2017) found similar trends, with only 72% of early-year students showing this awareness compared to 91% of final-year counterparts.¹³

Lastly, recognition of the benefits of chewing sugar-free gum was reported by 96% of interns and 86% of first-years in our study. This is consistent with research by Al-Hussyeen (2010), which showed 94.5% of final-year dental students were aware of its role in caries prevention, while the knowledge among junior students was substantially lower (78%).¹⁹

CONCLUSION

This study demonstrates a notable improvement in oral hygiene knowledge and practices as dental students advance in their education. Interns showed significantly better habits and awareness such as proper brushing techniques, fluoride use, and

recognition of oral health indicators compared to first-year students, likely due to increased clinical exposure. While some basic knowledge, like toothbrush replacement, was strong even among first-years, the overall findings highlight the value of integrating practical and preventive oral health training throughout dental education to shape both skilled professionals and effective health advocates.

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Author contribution:

Neha Patil assisted in conducting the questionnaire survey, performed the statistical analysis and data visualization and wrote the manuscript. Asmita Hamand designed and conducted all of the questionnaire survey and contributed in the manuscript. All authors have read and approved of the final manuscript.

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