

Assessment of Gingival Bleeding via Self-Reported Data: A Survey-Based Analysis

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ABSTRACT

Aim:

To determine the prevalence of self-reported gingival bleeding (SRGB) and the behavioral, demographic, and psychological factors related to it.

Materials and Methods:

The study consisted of 294 randomly chosen students at the Goenka Research Institute of Dental Science. These students were asked to fill out an 11-item structured questionnaire.

Results:

Chi-square tests at a 95% confidence level were carried out on the data. The study found that 85% of the 294 participants reported that they suffered from gingival bleeding. Sixty-four percent of the participants reported that poor dental hygiene was the main reason. There were significant correlations with tobacco use, anxiety, and brushing.

Conclusion:

Self-reported gingival bleeding (SRGB) was found to be highly prevalent among students. To stop the advancement of the condition, professional care, behavioral adjustment, and preventive education are essential.

Keywords: Periodontal disease, gingival bleeding, self-reported dental health, oral hygiene, anxiety, and smoking

INTRODUCTION

It is frequently known that the initial sign of gum problems is the bleeding from the gums. Even though this type of bleeding can be managed and reversed, especially when related to the development of gingivitis, failure to address the situation can cause the condition to worsen and develop into periodontitis. This gum disease is one of the six major diseases in the world and plays a major role in tooth loss.⁵ The assessment of periodontal health by probing for bleeding is a common practice used by clinicians. Higher percentages than 10% signify that there is a greater risk of periodontal disease progression.⁹

The bleeding of gums can be caused by a host of other factors despite dental plaque being the main cause. These include lifestyle-related factors such as age, smoking, psychological stress, limited economic circumstances, genetic health tendencies, general health problems, as well as drug use, e.g., blood thinners.^{6,11} Deficient levels of certain nutrients, especially vitamin C, could potentially exacerbate bleeding and harm gums^{8,16}

Researchers have had no other choice than to rely on more accessible methods such as self-reported gingival bleeding (SRGB) owing to logistical challenges of undertaking comprehensive clinical investigations for all individuals. The assessment of individuals' perceptions of bleeding gums has shown consistency with clinical manifestations of both mild and severe periodontal diseases.^{3,10}

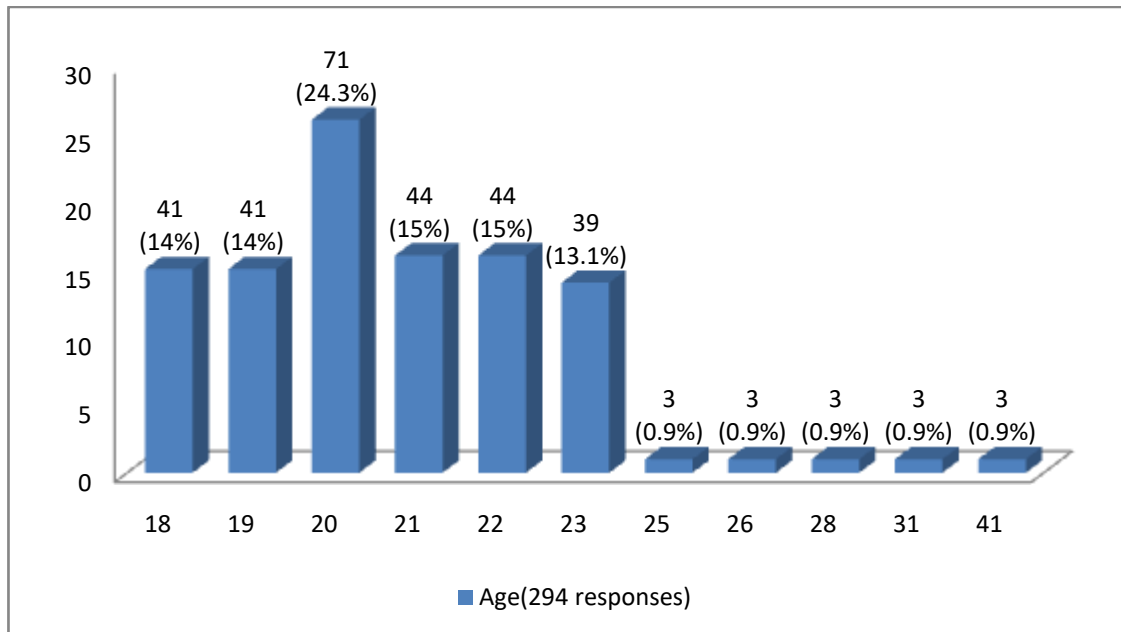
Through a structured survey methodology, this study attempts to identify the percentage of students at Goenka Institute experiencing gum bleeding and the behavioral, psychological, and demographic factors that may influence this outcome.

MATERIALS AND METHODS

Students' knowledge for gingival bleeding as self awareness for periodontal disease was evaluated through a standardized self-explanatory questionnaire distributed in Goenka institute. The questionnaires were handed to the students of Goenka institute. A total of 294 participants were included. The questionnaire consisted of 11 questions assessing gingival bleeding, oral hygiene practices, diet, tobacco use, anxiety, and treatment history.

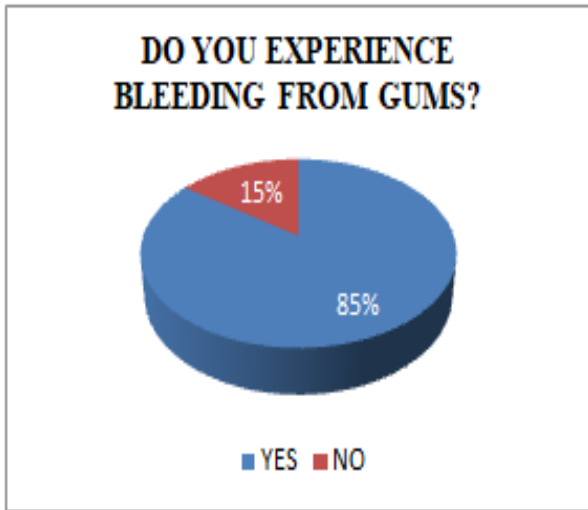
1. Do you experience bleeding from gums?
2. What do you think the primary cause for your gums bleeding?
3. What do you do to prevent gums from bleeding?
4. Do you have vitamin c deficiency?
5. How long do you brush your teeth?
6. What type of toothbrush do you use?
7. Do you smoke or use tobacco?
8. Do you have a family history of bleeding gums?
9. Do you consume acidic food in your daily diet?
10. What symptoms do you experience when your gum bleed?
11. Have you received any treatment for your gums bleed?

The questionnaires were given to the students. The responses were calculated and checked for agreement or non-agreement between and within the groups after the data was imported to a computer and checked using the Excel program. The difference in proportion was checked using the chi-square test and the necessary adjustments. A 95% probability was considered to be statistically significant.

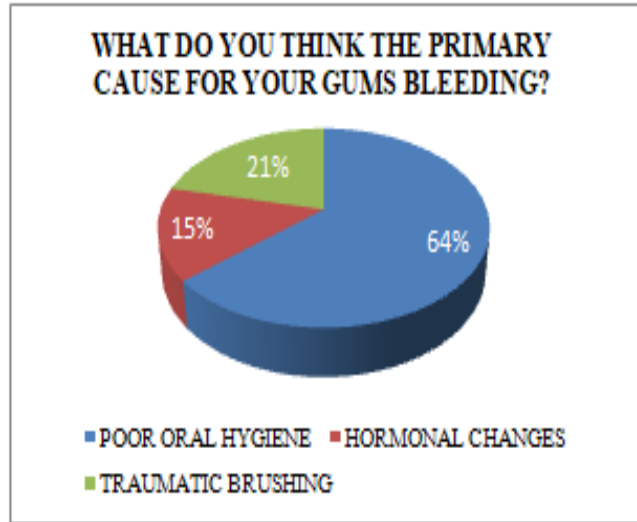


The bar chart illustrates the age-wise distribution of the 294 respondents who participated in the survey on self-reported gingival bleeding. The majority of participants were **20 years old (24.3%)**, representing the most prominent age group in the study. **Ages 21 and 22 each accounted for 15%** of the respondents. **.18 and 19 years followed closely, each comprising 14%** of participants. **.23 years made up 13.1%** of the group. **.Very few participants were in the older age brackets, including 25, 26, 28, 31, and 41 years, each contributing 0.9%**

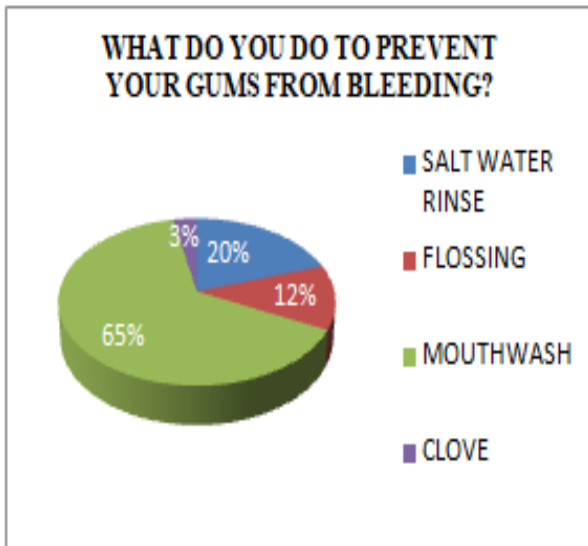
RESULTS



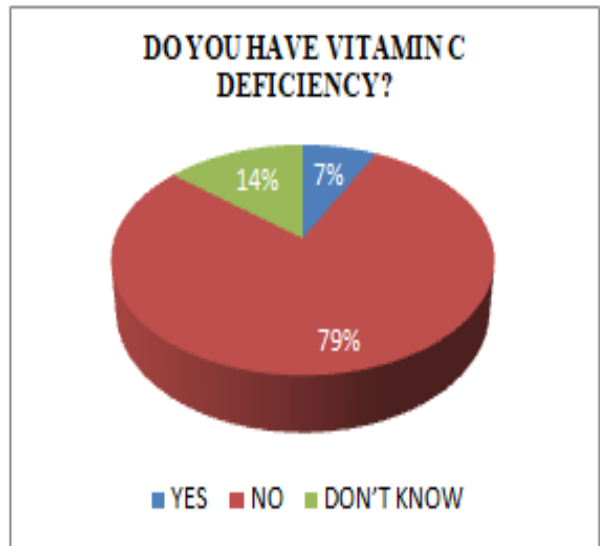
Out of the 294 participating members in the study, 85% subjects experience bleeding gum and 15% didn't experience bleeding gums.



Out of 294 subjects, about 64% patients think bleeding gums is due to poor oral hygiene, 21% think, its due traumatic brushing technique and 15% due to hormonal changes.



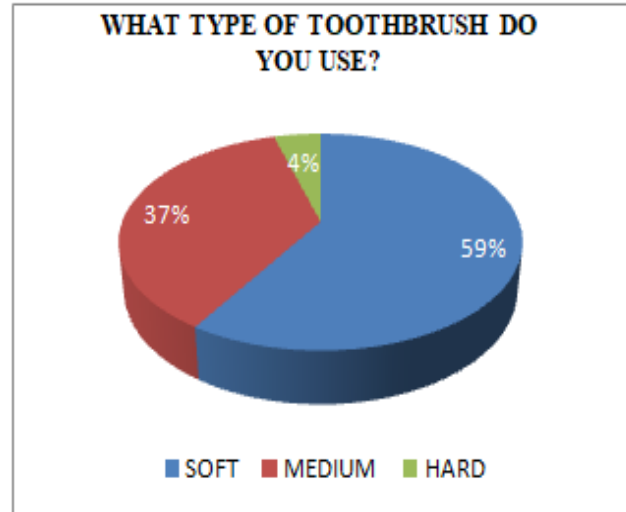
Around 65% patients use mouthwash to prevent bleeding, 20% do salt water rinse, 12% do flossing and 3% use clove oil.



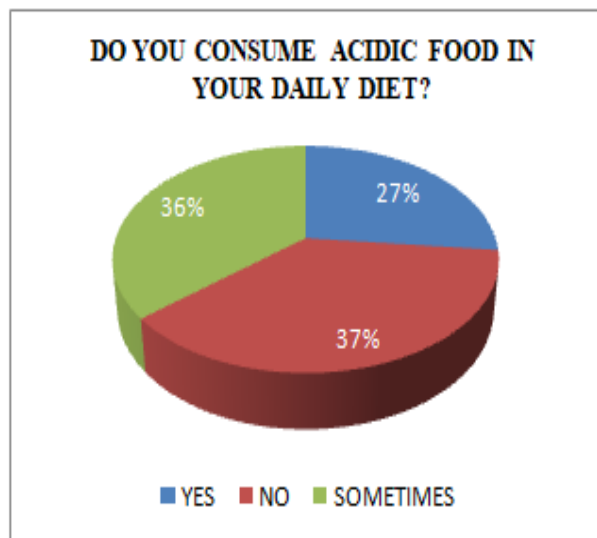
Out 294 subjects, 79% do not have Vitamin C deficiency, 14% patients were not aware and 7% patients were having Vitamin C deficiency.



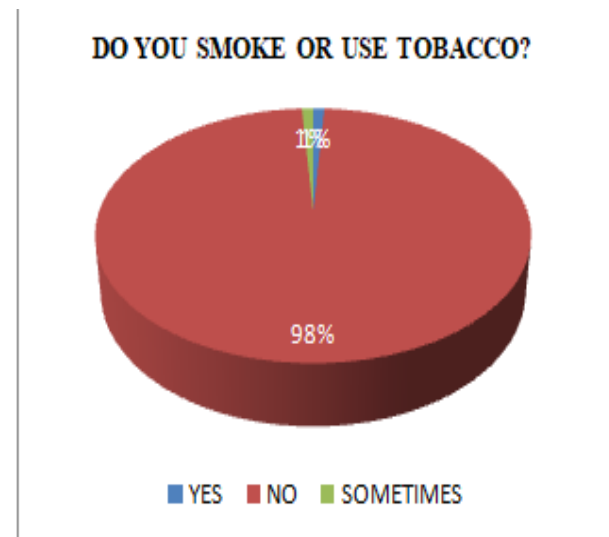
50% patient brush for two minutes, 28% patient brushes for five minutes, 17% patient brushes for one minute and 5% patient brushes for more than five minutes.



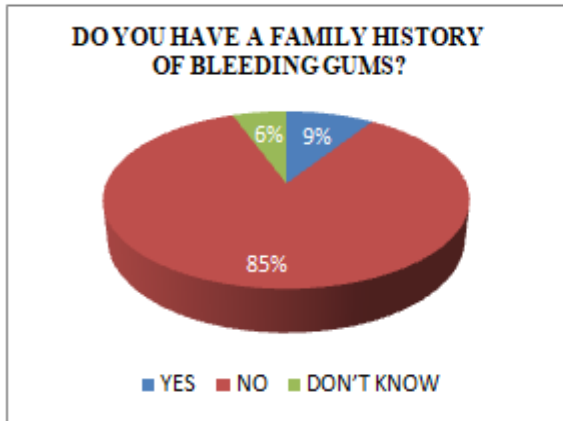
59% patient uses soft bristle brush for brushing, 37 % uses medium bristle brush while 4% uses hard bristle brush.



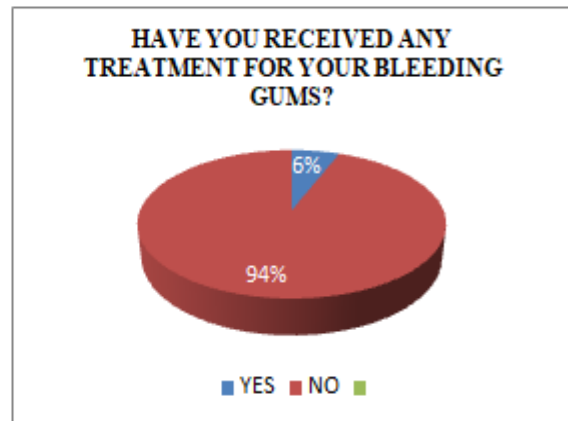
About 37% patient does not consume acidic food in daily diet, 36% patient sometimes consumes acidic food while 27% regularly consumes acidic food in their diet.



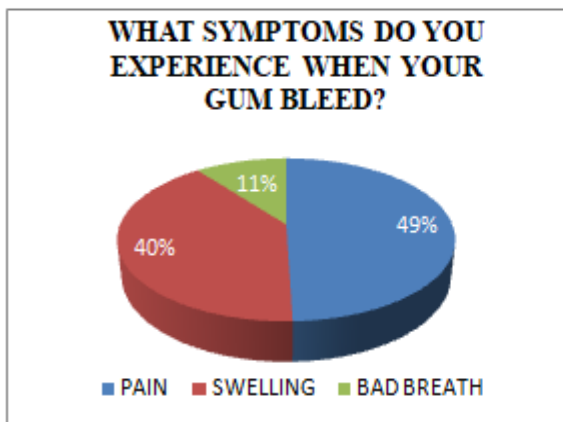
98% does not consume tobacco, 1% consumes tobacco while other 1% sometimes consume tobacco.



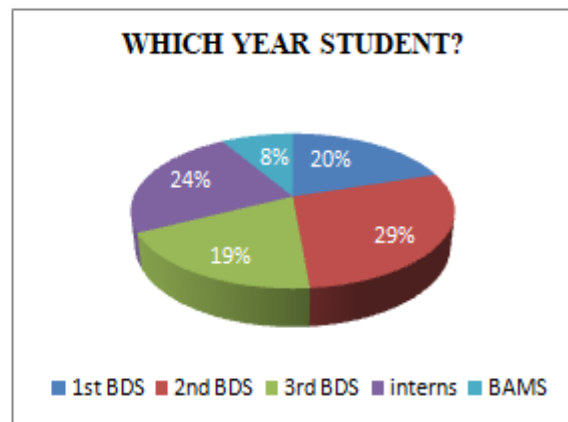
85% patient does not have family history of bleeding, 9% have family history of bleeding while 6% patient were not aware of family history.



Around 94% patient have not received any treatment for bleeding gums, while 6% have received treatment.



Around 49% experience pain when gum bleeds, 40% experience swelling and 11% have bad breath when their gums bleed.



The largest group of respondents was **2nd BDS students**, making up **29%** of the total. **Interns** formed the second-largest group at **24%**, followed by: **1st BDS students: 20%**, **3rd BDS students: 19%**, **BAMS students: 8%**

DISCUSSION

In this current research, the self-reported gingival bleeding (SRGB) prevalence and associated factors were assessed among undergraduate dentistry students. The high burden of gingival health issues in a young and educated age group is highlighted by the overwhelming 85% of the participants reporting to have had gingival bleeding at some point. This is consistent with findings from international research, which have linked self-reported gingival bleeding with the onset of gingival inflammation and the potential for the progression of periodontal disease if not treated.^{5;3}

Also, 64% of the participants believed that poor oral hygiene is the main reason for the occurrence of bleeding gums. This is understandable since the evidence suggests that gingivitis is mainly caused by dental plaque.⁹ Improper oral hygiene and brushing techniques may contribute to the formation of plaques and the consequent irritation and bleeding. It is noteworthy that 65% of the students relied on the use of mouthwash as a way of controlling the bleeding, and 20% of the students relied on the use of saltwater as a control measure. The students are evidently practicing oral hygiene, even though they are not guided by a dental practitioner.

There is a disconnect between self-awareness and clinical interventions, as evidenced by the significant statistic of 94% of patients who hadn't received professional help for their gingival bleeding. This is particularly significant in dental school, as students may use self-management techniques or may not realize the importance of seeking treatment. This is similar to what is observed in a general population, in which patients may view gingival bleeding as a trivial issue.¹

Brushing habits, smoking, and anxiety levels were found to be statistically significant correlates for SRGB. These findings are in accordance with previous studies that identified smoking and stress as modifiable risk factors for periodontal disease^{11,6}. Light smoking is known to increase gingival inflammation and mask the signs of bleeding gums because of vasoconstriction, even though only 2% of the population was found to be using tobacco.^{2,13}

The link between SRGB and anxiety reveals the psychosomatic side of periodontal health. The link between psychological stress and periodontal inflammation through immune modulatory mechanisms is increasingly supported by the literature^{10,7}. The study reveals the importance of the integration of mental health care with oral health care, as adolescents with higher anxiety levels self-reported bleeding more frequently.

As far as the type of toothbrush is concerned, most students, i.e., 59%, used a soft bristle toothbrush. It is generally recommended to use a soft bristle toothbrush to minimize damage to the gingiva. However, 21% of students themselves pointed out that 41% of them use either a medium or harsh bristle toothbrush, which may have caused bleeding due to trauma. These findings are in accordance with previous studies that showed that damage due to improper technique can cause irritation to the gingiva and lead to bleeding.⁴

There were few reports of vitamin C inadequacies among the individuals, which shows that the nutritional consumption of the group might have been sufficient. However, there were 14% of the group who were unsure, and 7% admitted the deficiency, which shows awareness programs are required as dietary insufficiency may worsen the condition of the gums, especially in poor countries.⁸

The cross-sectional nature of the study, the limited sample size of the participants (294), and the reliance on self-reported data, which may be subject to recall and reporting biases, are some of the limitations of the study. Despite the limitations of the study, it provides valuable and insightful information on the behavioral and psychosocial factors affecting gingival health of the participants, who were dentistry students.

CONCLUSION

The higher rate of self-reported gingival bleeding (SRGB) observed in the dentistry students underscores the need for early diagnosis and treatment. This is because, if neglected, the early signs of gingival bleeding may progress to periodontal disease. Anxiety, smoking, and poor dental hygiene were all strongly related to SRGB.^{14,15}

In particular, for individuals with poor dental hygiene practices, powered toothbrushes can help further improve the effectiveness of reducing dental plaques and gingival inflammation due to their ease of use.¹²

In order to halt the progression of the disease, it is essential to promote the practice of good dental hygiene habits, manage anxiety, stop smoking, and employ the most advanced technology, such as powered toothbrushes, and routine dental check-ups.

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