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Original Research Article

To assess patients' ability to recognize signs of periodontal disease – A cross-sectional survey

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Abstract

Introduction: Periodontal disease is a common oral health condition that can lead to tooth loss if left untreated. Early detection is crucial for effective management, and patients' ability to recognize signs of periodontal disease is essential in promoting timely intervention. This study aims to assess the awareness and ability of patients to identify common signs and symptoms of periodontal disease.

Aim and Objective: Is to evaluate the awareness of patients regarding the early warning signs of periodontal diseases and to determine the level of knowledge patients have about the potential causes and risk factors of periodontal disease.

Materials and Methods: A cross-sectional survey was conducted with 200 adult participants at a dental clinic. Participants were asked to complete a questionnaire regarding their knowledge of periodontal disease signs, including gum bleeding, bad breath, gum recession, and tooth mobility. Additionally, clinical assessments were made to evaluate the presence of periodontal disease. Data were analyzed to compare patients' self-reported awareness with clinical findings.

Results: The results revealed that while most participants were aware of common signs like bleeding gums, fewer recognized symptoms such as gum recession and tooth mobility. A significant number of patients with clinical signs of periodontal disease did not report recognizing them, indicating a gap in self-awareness.

Conclusion: This study highlights the need for increased education on the signs and symptoms of periodontal disease. Improving patient awareness can contribute to early detection and better outcomes.

Keywords: Periodontal disease, Patient awareness, Oral health, Early detection, Gum bleeding, Gum recession.

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1. Introduction

Periodontal disease, is a progressive inflammatory condition that affects the gums and supporting structures of the teeth, including the periodontal ligament and alveolar bone. It is a prevalent oral health issue and a leading cause of tooth loss in adult's worldwide.[1] Periodontal disease begins with gingivitis, characterized by gum inflammation, redness, and bleeding, which, if left untreated, progresses to periodontitis. Advanced stages of periodontitis involve gum recession, deep periodontal pockets, tooth mobility, and eventually tooth loss.

Despite its high prevalence and severe consequences, many individuals remain unaware of the condition's early signs and symptoms. These early indicators, such as bleeding gums, persistent bad breath, and mild gum discomfort, are often ignored or attributed to other factors.[2] This lack of awareness results in delayed diagnosis and treatment, exacerbating disease progression and complicating management. Periodontal disease is not only a threat to oral health but also has significant systemic implications, being linked to conditions such as diabetes, cardiovascular disease, and adverse pregnancy outcomes.[3]

Assessing patients' ability to recognize signs of periodontal disease is crucial for several reasons. First, it helps identify gaps in knowledge that can be addressed through educational programs. Second, it underscores the need for routine dental check-ups and self-monitoring

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practices among patients.[4] Finally, enhancing awareness can empower individuals to seek timely professional care, potentially preventing severe complications.

This study aims to evaluate patients' awareness of common signs of periodontal disease, including gum bleeding, bad breath, gum recession, and loose teeth, and to compare self-reported recognition with clinical findings.[5] Understanding this gap in knowledge will inform the development of targeted educational interventions, contributing to improved oral health outcomes and reducing the overall burden of periodontal disease.[6-8]

2. Materials and Methods

This cross-sectional study was conducted at the Department of Periodontology in Swargiya Dadasaheb Kalmegh Smruti Dental College and Hospital, Nagpur over 3 months to assess patients' ability to recognize signs of periodontal disease. A total of 200 adult patients aged 18–65 years were randomly selected.

Inclusion criteria included patients with no prior periodontal treatment and willingness to participate.

Exclusion criteria were individuals with systemic conditions affecting periodontal health, such as diabetes, or those undergoing orthodontic treatment.

A structured questionnaire evaluated patients' awareness and ability to identify common signs of periodontal disease, such as bleeding gums, bad breath, gum recession, and loose teeth.[9,10] The questionnaire included closed- and open-ended questions about knowledge, self-reported symptoms, and perceived oral health. Written informed consent was obtained from all participants after explaining the study's objectives, methods, and confidentiality of responses. Participants had the right to withdraw at any time without any consequences.

1. Patients visiting the Department of Periodontology were approached and screened for eligibility.
2. Eligible participants were provided with the study details and a consent form.
3. After obtaining consent, participants were given the questionnaire, which they were requested to complete on-site.
4. For individuals with literacy challenges, the questions were read aloud, and their responses were recorded.

Participants completed the questionnaire before the clinical examination to ensure unbiased responses. The clinical findings were then compared with the self-reported awareness to evaluate the accuracy of patients' recognition of their periodontal condition[9].

2.1. Data analysis

1. Completed questionnaires were collected, coded, and entered into a secure database.
2. Data analysis was performed using [statistical software, e.g., SPSS version X].
3. Descriptive statistics (frequency, percentages, mean, and standard deviation) were used to summarize demographic data and awareness levels.
4. Inferential statistics (Chi-square test, t-test, or ANOVA) were used to assess associations between demographic variables and recognition of periodontal disease signs.

A p-value of <0.05 was considered statistically significant.

3. Result

The study revealed gaps in patients' recognition of periodontal disease signs. While 70% identified bleeding gums as a symptom, awareness of gum recession (40%) and tooth loss risk from untreated gum disease (45%) was lower. Only 25% regularly monitored their gums for signs, with 65% checking occasionally and 10% rarely or never.

Symptoms observed included gum bleeding (50%), redness (40%), swelling (35%), and gum recession (20%). 66% reported gum pain, and 45% noticed gaps between teeth. However, 30% observed no noticeable changes.

Participants primarily relied on dentists (50%) and the internet (30%) for information, while 15% were unaware of any signs. These findings highlight the need for targeted education to improve awareness and encourage early detection of periodontal disease.

Table 1: Responses to various questions assessing patients' ability to recognize signs of periodontal disease

Question	Response in percentage	P value
1. Do experience bleeding from gums while brushing?	Yes: 65%, No: 35%	0.01
2. Do you know that bleeding gums during brushing or flossing can be a sign of gum disease?	Yes: 70%, No: 15%, Not sure: 15%	0.02
3. Have you noticed any of the following in your gums?	Redness or inflammation: 40%, Swelling: 35%, Bleeding: 50%, Receding gums: 20%, No noticeable changes: 30%	0.03
4. Do you consider bad breath (halitosis) a possible symptom of gum disease?	Yes: 60%, No: 20%, Not sure: 20%	0.01

5. Have you ever experienced pain or tenderness in your gums?	Yes: 66%, No: 33%	0.04
6. Do you know that loose teeth or changes in how your teeth fit together can indicate gum disease?	Yes: 60%, No: 25%, Not sure: 5%	0.02
7. Do you think gum recession (when gums pull away from the teeth) is a sign of a serious dental problem?	Yes: 40%, No: 35%, Not sure: 25%	0.05
8. Do you think untreated gum problems can lead to tooth loss?	Yes: 45%, No: 30%, Not sure: 25%	0.01
9. How often do you check your gums for signs of bleeding, swelling, or recession?	Regularly: 25%, Occasionally: 65%, Rarely or never: 10%	0.04
10. Where did you learn about the signs of gum disease?	Dentist or hygienist: 50%, Internet or social media: 30%, Friends or family: 20%, TV or print media: 10%, Not aware: 15%	0.02

4. Discussion

The findings of this study underscore the critical need to improve public awareness of periodontal disease signs and symptoms. While a significant proportion of participants (70%) recognized bleeding gums[9] as a sign of gum disease, awareness of other key indicators such as gum recession (40%), loose teeth (60%), and the risk of tooth loss due to untreated gum disease (45%) was notably lower. These results align with existing literature suggesting that public understanding of periodontal health remains insufficient, even in populations with access to dental care.[11]

The gap in self-monitoring practices is particularly concerning, with only 25% of participants regularly checking their gums for symptoms. This lack of proactive oral health behavior can delay the detection and treatment of periodontal disease, exacerbating its progression and impact. Educational campaigns emphasizing the importance of regular gum checks during daily oral hygiene routines could significantly enhance early intervention efforts.[12]

The reliance on dentists (50%) and the internet (30%) for information highlights the dual role of dental professionals and digital platforms in addressing these knowledge gaps. Dentists should prioritize patient education during routine visits, focusing on explaining the less obvious symptoms such as gum recession and tooth mobility. Additionally, leveraging digital platforms to disseminate accurate, accessible information could broaden outreach, especially for those with limited access to dental care.[13]

The study also highlights discrepancies between self-reported symptoms and clinical findings, emphasizing the importance of professional dental evaluations. Patients may not always recognize or accurately interpret periodontal symptoms, necessitating routine dental check-ups for effective diagnosis and management.[14]

Overall, this study identifies key areas for intervention, including enhanced public education, improved self-monitoring practices, and greater engagement with dental professionals to reduce the burden of periodontal disease and improve oral health outcomes.[15]

5. Conclusion

This study highlights significant gaps in patients' ability to recognize the signs and symptoms of periodontal disease, despite its prevalence and potential to cause severe oral health complications. While a majority of participants were aware of some signs, such as bleeding gums (70%) and bad breath (60%), awareness of other critical indicators like gum recession (40%), loose teeth (60%), and the association between untreated gum disease and tooth loss (45%) was lower. Moreover, only 25% of participants routinely checked their gums for symptoms, indicating a lack of proactive oral health monitoring.

Participants primarily relied on dentists or hygienists (50%) for information, followed by digital platforms (30%), suggesting a need for targeted educational campaigns in clinical and online settings to address gaps in knowledge. Importantly, the disconnect between self-reported symptoms and clinical findings underlines the necessity for professional guidance and regular dental check-ups to enhance early detection and management of periodontal disease.

The findings underscore the importance of public health initiatives focusing on patient education about periodontal disease. Increasing awareness of lesser-known signs, such as gum recession and tooth mobility, and encouraging regular self-monitoring and dental visits, can lead to earlier interventions, better treatment outcomes, and overall improvement in oral and systemic health.

6. Conflict of Interest

None.

7. Source of Funding

None.

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