CASE REPORT

ASSESSMENT OF PATIENT AWARENESS AND PATIENT'S PERCEPTION ON TANGIBLE EFFECTS OF NON-SURGICAL PERIODONTAL THERAPY: A CROSS-SECTIONAL STUDY

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Abstract

Background: Non-surgical periodontal therapy (NSPT) is fundamental in managing periodontal health and enhancing oral health-related quality of life. Despite its clinical importance, limited research explores patients' awareness and perception of NSPT's benefits and outcomes. This study aimed to evaluate patients' understanding of periodontal disease and their perception of NSPT's tangible effects, with the goal of improving awareness and adherence to periodontal care.

Methods: A structured questionnaire was administered to 150 patients undergoing NSPT (56 males, 94 females; mean age: 30.45±14.01 years). The survey assessed demographic data, knowledge of periodontal disease, perceived treatment efficacy, and self-reported changes in oral health following therapy. Data were analysed using descriptive statistics and Wilcoxon signed-rank tests to evaluate pre- and post-treatment differences.

Results: Prior to therapy, 76.7% of participants reported symptoms of gum disease. Common complaints included bleeding gums (21.3%), swollen gums (10.7%), halitosis (12.7%), tooth mobility (5.3%), and pain (7.3%). After NSPT, 30% experienced reduced gingival swelling, 14.7% reported decreased bleeding, and 16.7% noted improved tooth stability. Wilcoxon analysis confirmed statistically significant improvements across symptoms ($p<0.05$). These findings support existing evidence that NSPT contributes to symptom relief and improved oral health-related quality of life.

Conclusion: NSPT offers substantial patient-perceived benefits. However, awareness and understanding of periodontal disease and its management vary significantly by gender and educational background.

Key words : Periodontitis, Awareness, Cross-sectional Study, Questionnaire

Introduction

Periodontitis is a chronic, multifactorial inflammatory disease initiated by dysbiotic microbial biofilms and sustained by destructive host immune responses, ultimately leading to the

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irreversible loss of periodontal support.[1] Far from being limited to oral health, its consequences extend to quality of life, psychological well-being, and even systemic disease risk, elevating the urgency of timely recognition and management.[2] Classical understanding has evolved significantly, now emphasizing that microbial challenge alone is insufficient to cause disease without the susceptible host response, underscoring the complexity of its pathogenesis.[3]

The present clinical diagnostic techniques, which mainly include bleeding indices, clinical attachment loss, and probing depth, do not fully capture the extent of the disease's impact on patients, even with advances in our understanding of periodontitis. These metrics do not account for behavioral outcomes, pain, or individual views that are essential to long-term dental health [4]. Consequently, a significant gap still exists between clinical measurements and the patient experience. The rising focus on patient-reported outcomes and quality-of-life markers, which are still understudied in ordinary practice, makes this more problematic.[5] Dental care is insufficient and even useless without using these important yet subjective insights.

Non-surgical periodontal therapy (NSPT), which consists of mechanical debridement through scaling and root planning with or without adjunctive agents, is the frontline treatment for periodontitis. Numerous studies have confirmed its efficacy in reducing inflammation and halting disease progression.[6] However, its success relies not just on clinical endpoints but on the patient's understanding, perception, and adherence to post-treatment care. Alarmingly, patients often report limited or no awareness of their periodontal diagnosis, underestimate the severity of the condition, or fail to understand the objectives of the therapy they undergo.[7] This knowledge gap can lead to relapse, poor oral hygiene, and underutilization of maintenance protocols, ultimately diminishing the long-term impact of the therapy.[8]

Even when NSPT results in measurable clinical improvements, many patients remain unaware of what those changes signify or how to sustain them. Cross-sectional studies have reported that a large proportion of patients are unaware they even have gum disease, let alone that treatment has improved their health.[9] Inadequate communication, health literacy barriers, and limited educational reinforcement during clinical visits all contribute to this perception gap.[10] More alarmingly, this lack of awareness is disproportionately evident among individuals with lower education levels and among those from vulnerable populations, making tailored education and empowerment strategies essential.[11]

This study aims to evaluate patients' awareness of periodontal disease and their perceptions of the tangible effects of non-surgical periodontal therapy on their oral health and overall well-being. The objective is to quantify the proportion of patients who understand their periodontal condition and the benefits of NSPT, to evaluate their self-reported changes in symptoms after therapy, and to analyze how demographic factors such as age, gender, and education influence levels of awareness and perception.

Materials And Method:

A descriptive cross-sectional study was conducted at private dental college, Tamil Nadu, over a period of three months from January 2025 to March 2025, to assess patient awareness and perception regarding the tangible effects of NSPT. A total of 150 patients who had undergone NSPT within the previous six months were included in the study using a purposive sampling technique. Inclusion criteria comprised patients aged 18 years and above, those who had completed NSPT

within six months prior to the survey, and those who provided informed consent. Patients were excluded if they had not received NSPT in the last six months, had incomplete treatment history or recall issues, had uncontrolled systemic conditions, or were unwilling to consent or complete the questionnaire.

The required sample size was calculated using G*Power software (version 3.1) based on a previous study by Balu et al,[12] with a power of 90% and an alpha level of 0.05, resulting in a minimum required sample size of 125; 150 participants were recruited to ensure adequate representation. Data were collected using a structured, bilingual (Tamil and English), self-administered questionnaire developed through Google Forms. The questionnaire consisted of 16 items divided into three sections: Section I collected demographic details such as age, gender, and education level; Section II assessed oral hygiene practices and awareness about periodontal disease, including brushing frequency, use of oral hygiene aids, and knowledge of gum disease and its systemic links; Section III evaluated patients' perceptions of NSPT, including symptoms before and after treatment and the perceived effectiveness of the therapy. The content validity of the questionnaire was assessed by three subject experts and achieved a content validity ratio (CVR) of 0.86, indicating strong validity and relevance of the questionnaire items.

Eligible patients were approached in the outpatient department after completion of NSPT. After obtaining informed consent, they were asked to fill out the questionnaire using a digital device. Duplicate entries were restricted through browser settings. Responses were collected and compiled in Microsoft Excel for further analysis. The collected data were coded numerically and analyzed using SPSS version 22.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics such as frequencies and percentages were used to summarize demographic and categorical variables. The Wilcoxon signed-rank test was used to compare pre- and post-treatment symptoms. Chi-square test was used to determine associations between demographic variables and awareness/perception. A p-value < 0.05 was considered statistically significant.

Results:

A total of 150 patients participated in the study, with females (62.7%) outnumbering males (37.3%). The mean age was 30.45 ± 14.01 years. Regarding education, most were undergraduates (60%), followed by postgraduates (14.7%). In terms of oral hygiene, brushing once daily (61.3%) was more common than twice daily (38.7%). Only 27.3% reported using interdental aids, and 44% reported attending regular dental check-ups. A history of gum disease was reported by 76.7%, while 71.3% acknowledged its systemic link, and 88% were aware of NSPT. Graph 1 shows

Comparison of oral hygiene practices showed that participants with higher education were significantly more likely to use interdental aids ($p = 0.025$*), while females were more likely than males to brush twice daily ($p = 0.012$*). However, no significant association was observed between education and brushing frequency ($p = 0.127$) or between education and dental check-up frequency ($p = 0.298$). Graph 2 shows

With regard to periodontal awareness (Table III), education was significantly associated with better knowledge. Participants with higher education were more aware of gum disease ($p = 0.01$*), its systemic implications ($p = 0.02$*), and causative factors including microorganisms, systemic diseases, poor oral hygiene, and genetic predispositions ($p = 0.01$*). Graph 3 shows the comparison between gender and their awareness of oral hygiene and its maintenance.

Before NSPT, the most commonly reported

symptoms were bleeding gums (21.3%), bad breath (12.7%), and swollen gums (10.7%), while 42.7% reported no symptoms. Following NSPT, 30% reported reduced swelling, 16.7% reduced tooth mobility, and 14.7% reduced bleeding. In contrast, 36% reported no change, and 2.7% reported worsening of symptoms. The Wilcoxon signed-rank test confirmed significant improvement after NSPT ($p = 0.049^*$). Graph 4 shows the comparison of pre-treatment and post-treatment (symptoms before NSPT and improvements after NSPT)

Overall, these findings indicate that education level and gender significantly influenced oral hygiene behaviour and periodontal awareness, while NSPT was associated with significant patient-reported improvement in symptoms, underscoring its effectiveness and positive perception.

DISCUSSION:

This study assessed patients' awareness and perception of the tangible effects of NSPT. The results demonstrated a clear association between educational status and awareness regarding periodontal disease, oral hygiene practices, and understanding of NSPT benefits. Participants with higher educational levels were more likely to adopt oral hygiene aids, attend dental check-ups, and correctly identify causes of gum disease. This aligns with the findings of Vante JF et al., who reported that higher literacy rates significantly improved periodontal awareness in a Norwegian population (2015).[13]

Gender-based differences were also evident, with females more frequently reporting better brushing habits and greater concern for their oral health. This gender trend mirrors findings reported by Stadler AS et al. (2017), where women exhibited higher motivation and adherence to periodontal maintenance in a Brazilian cohort.[14, 15] Similar gender-based disparities were observed by Sfeatcu et al., who found that Romanian women demonstrated higher oral health literacy and more proactive dental behaviors than men.[16]

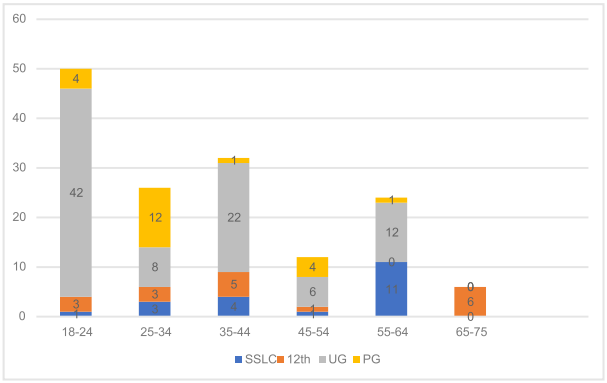
The effectiveness of NSPT was perceived positively by a majority of participants. Statistically significant improvements were reported in symptoms such as bleeding gum swelling, and tooth mobility. These improvements are consistent with the outcomes reported by Palaiologou A et al. (2020), who highlighted that patient-centered outcomes—like comfort and perceived oral health—play a crucial role in evaluating periodontal treatment success.[15] Kodikara et al., further support this by showing that full-mouth NSPT protocols yield superior clinical outcomes compared to quadrant-wise scaling.[17] Additionally, Rajaratinam et al., demonstrated that NSPT not only improves periodontal parameters but also contributes to systemic health benefits in patients with chronic kidney disease.[18]

However, only 44% of participants in this study reported attending regular dental checkups. This is considerably lower than the 66% check-up rate documented by Vante et al. in Norway, highlighting the need to improve preventive dental behaviors through targeted awareness, especially in populations with limited education.[13]

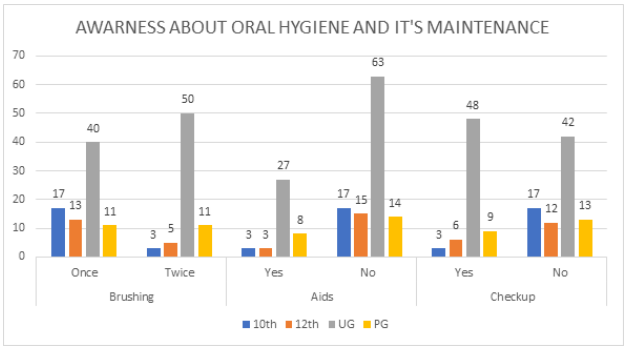
The present study has several limitations. Firstly, its cross-sectional design restricts the ability to draw causal inferences between awareness and clinical outcomes. Additionally, the reliance on self-reported responses may have introduced recall bias or social desirability bias, potentially affecting the accuracy of the data. The study was also limited to selected dental institutions, which may not adequately represent the broader population, thereby affecting the generalizability of the findings. Furthermore, long-term follow-up

was not conducted, making it difficult to evaluate the sustained outcomes of NSPT.

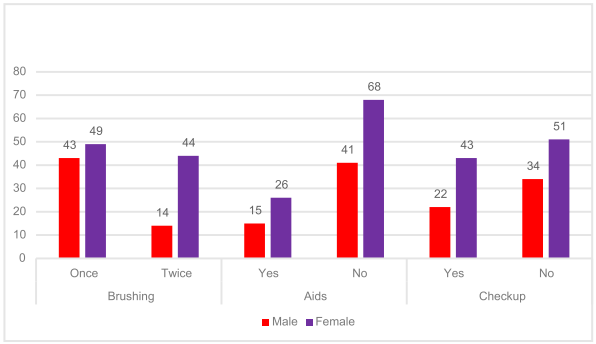
Graph 1: Shows the demographic details of the study participants.



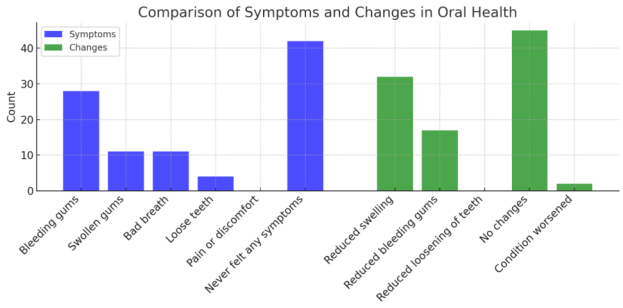
Graph 2: Shows the comparison between the educational qualification and their awareness of oral hygiene and its maintenance.



Graph 3: Shows the comparison between gender and their awareness of oral hygiene and its maintenance



Graph 4: Shows the comparison of pre-treatment and post-treatment (symptoms before NSPT and improvements after NSPT)



Conclusion:

This study highlights that education level and gender are important predictors of patient awareness and perception regarding periodontal disease and NSPT outcomes. NSPT was associated with significant patient-reported improvements in clinical symptoms, emphasizing its role in promoting oral health and quality of life. However, low rates of preventive dental visits point to a need for enhanced patient education and reinforcement of maintenance care. Further longitudinal studies are recommended to explore long-term adherence and sustained benefits of NSPT across diverse populations.

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Conflict of Interest: Nil

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