



HALITOSIS AND PERIODONTAL STATUS: CLINICAL RELEVANCE FOR PATIENT- CENTERED CARE

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Introduction

Periodontitis is a chronic inflammatory disease caused by polymicrobial subgingival biofilm. It is often clinically silent but severely impacts oral function and quality of life. It is also recognized as one of the main etiological factors of halitosis, with negative implications for patients’ self-esteem and social relationships. Understanding patients’self-perception is crucial to improve awareness and adherence to treatment.

Aims

This study aimed to evaluate the association between periodontitis, halitosis and their impact on individuals’ quality of life and oral self-perception.

Materials and Methods

An observational pilot cross-sectional study was conducted at the Periodontology Department of Egas Moniz Dental Clinic. Periodontal charting and diagnosis were performed according to the 2018 classification of the European Federation of Periodontology / American Academy of Periodontology. Halitosis was measured using a Halimeter® (VSC concentration). Data were analyzed using the R software platform, and statistical significance was set at $p < 0.05$.

INCLUSION / EXCLUSION CRITERIA

- ✓ Periodontitis diagnosis
- ✓ Age between 18 and 65
- ✓ Informed consent
- X Previous periodontal treatment
- X Head and neck radiotherapy / chemotherapy
- X IP or IG > 25%
- X Extraoral causes of halitosis
- X Pregnant or recent covid-19 diagnosis
- X Drugs with hyposalivation effects
- X Incomplete data

PERIODONTITIS DIAGNOSIS

- Six sites per tooth
- Probing depth
- Clinical attachment level
- Plaque index
- Gingival index
- Tooth mobility
- Furcation involvement
- Missing teeth

PSYCOMETRIC ASSESSMENTS

1. ORAL HEALTH IMPACT PROFILE (OHIP-14)

- Oral health-related quality of life was assessed using the validated Portuguese version of the OHIP-14 questionnaire, completed independently by patients.

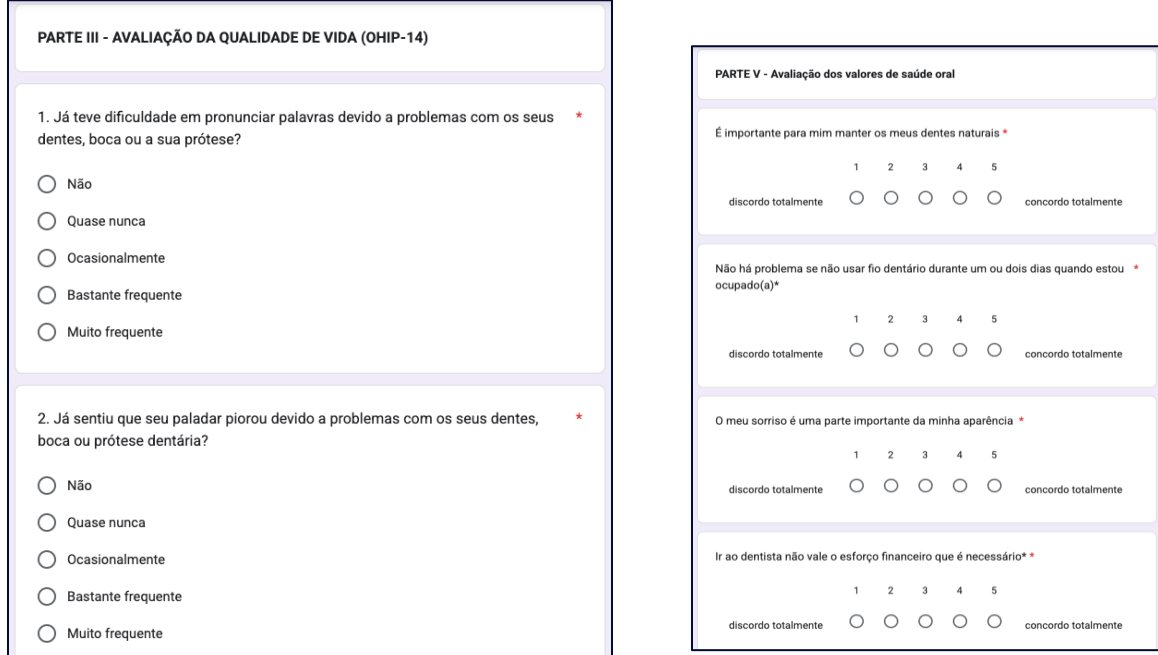
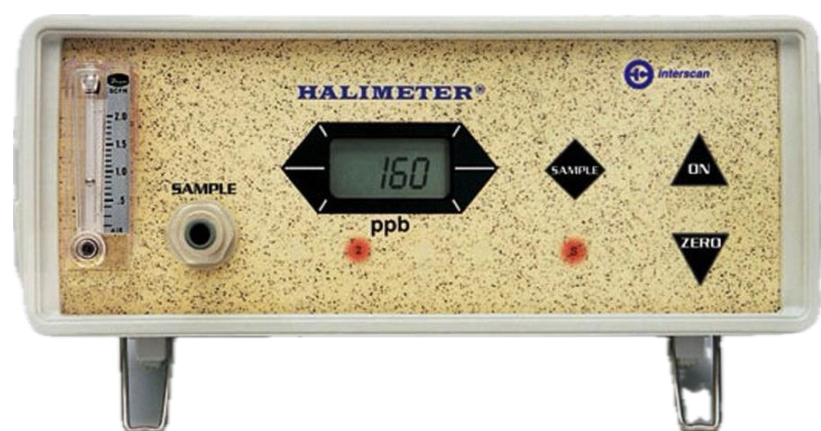
2. ORAL HEALTH VALUE SCALE (OHVS)

- To measure self-perception and the importance that patients attribute to their oral health, the OHVS, already validated for Portuguese, was used.

HALITOSIS DIAGNOSIS

1. Self-reported questionnaire, to exclude causes of extra-oral halitosis
2. Three measurements were taken for the volatile sulfur compounds

< 80 ppb → no perceptible odor
> 80 ppb → halitosis



Results

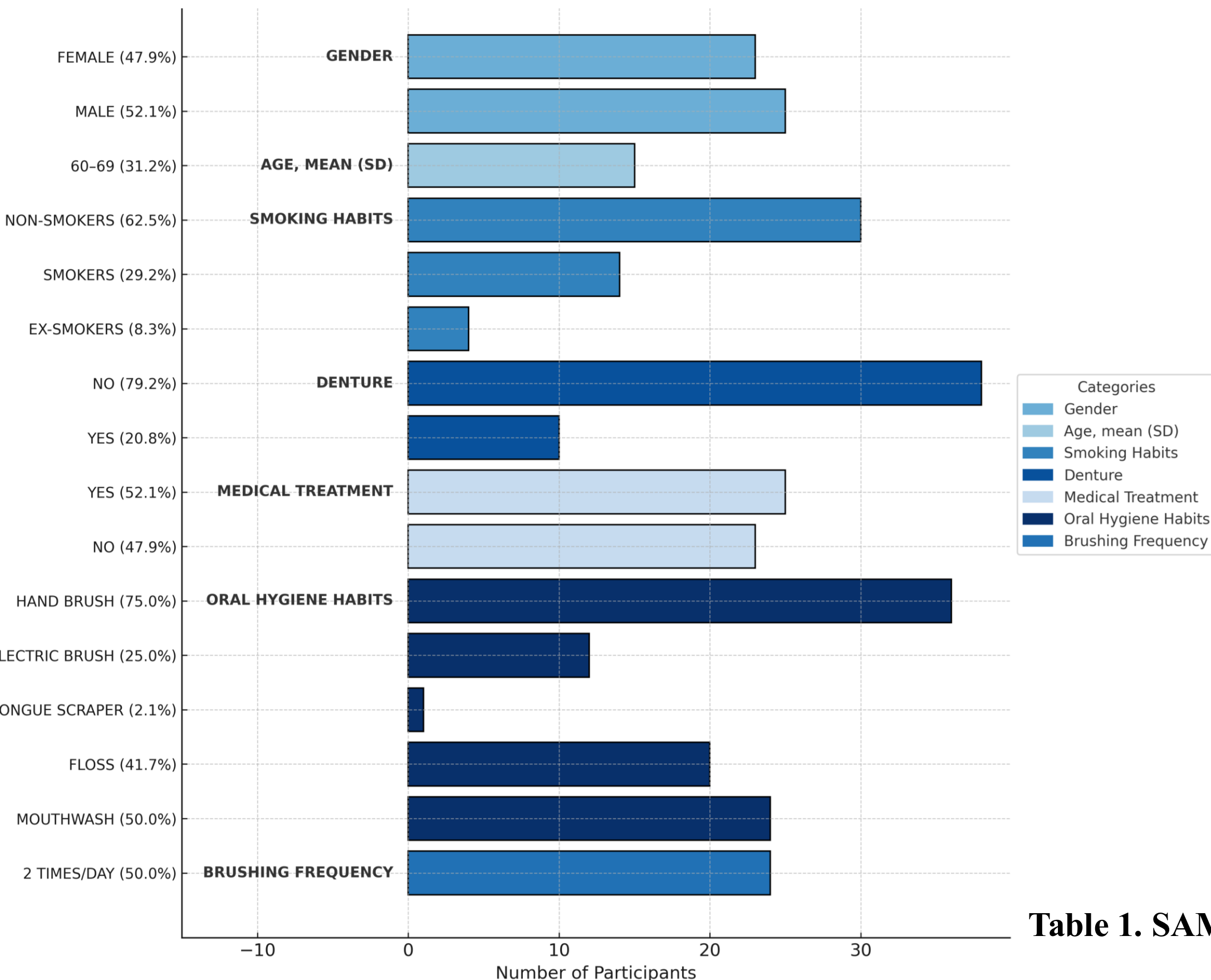


Table 1. SAMPLE DESCRIPTION, n (%)

Clinical and questionnaire data were collected by two calibrated researchers using anonymized forms. A total of 49 participants were included (25 male, 24 female), with a mean age of 57.19 ± 11.96 years. Halitosis was measured using the Halimeter®, oral health-related quality of life was assessed through the OHIP-14, and self-perception of oral health was evaluated using the OHVS.

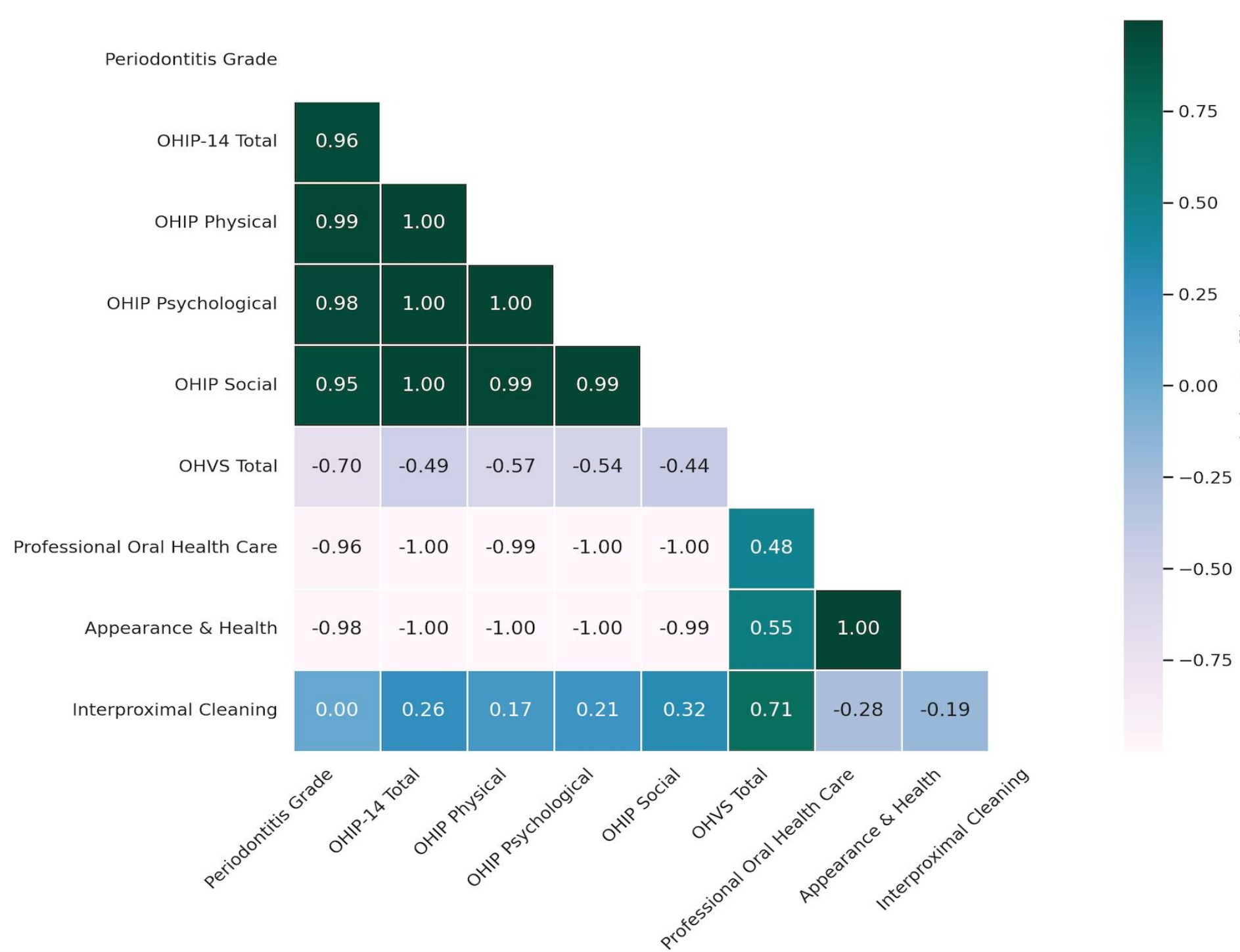


Figure 1. CORRELOGRAM OF ALL THE

INPUT VARIABLES

Discussion

Twenty-two participants reported brushing their teeth twice daily. A significant association was found between periodontitis severity and OHVS scores ($p = 0.014$). Grade C patients had significantly lower total OHVS scores than grade A and B patients, indicating that more severe disease negatively impacts patients’ perceived value of oral health. Item 5 of the OHVS (“Flossing every day is a high priority for me”) showed significant differences between the groups with different degrees of periodontitis ($p = 0.011$), with higher scores in Grade B patients. This may indicate a greater appreciation of interproximal hygiene by these individuals, possibly reflecting greater awareness or motivation for interproximal hygiene care at this stage of the disease.

No significant associations were found between Halimeter® readings (halitosis) and OHIP-14 or OHVS scores ($p > 0.05$), suggesting that halitosis do not reflect patients' self-perception of oral health or quality of life. While halitosis is a common concern in periodontal patients, its objective measurement did not correlate with self-perceived oral health or quality of life in this sample. However, the observed relationship between periodontal severity and oral health values underscores the importance of disease awareness in shaping patient attitudes.

Conclusion

The importance of improving patient awareness is further demonstrated by the correlation found between the severity of periodontitis and oral health measures. Improving motivation, self-care, and general attitudes towards oral health are all potentially affected by an understanding of the impact of periodontal disease. To validate and extend these findings, future research with larger and more diverse populations is recommended.