

Proceeding Paper

Halitosis Self-Perception and Awareness among Periodontal Patients—An Exploratory Study †

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Abstract: Halitosis is an unpleasant breath odor that interferes with self-confidence and with people's professional and social lives. The aim of this exploratory study was to evaluate the self-perception and awareness of oral malodor among patients with periodontitis.

Keywords: halitosis; self-perception; periodontitis; bad breath



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1. Introduction

Halitosis or oral malodor is an unpleasant breath odor that interferes with one's quality of life [1,2]. As one of the main symptoms of periodontitis, halitosis often leads patients to seek treatment [3]. Several studies have addressed self-perceived halitosis among young people, but the number of studies on the self-perception of intra-oral halitosis in periodontitis patients is still scarce. The aim of this exploratory study was to assess the self-perception and awareness of oral malodor among periodontitis patients and to evaluate their relation to halitosis diagnosis.

2. Materials and Methods

This study was approved by the Egas Moniz Ethics Committee, in accordance with the Helsinki Declaration of 1975, as revised in 2013. Participants were consecutively recruited from the Periodontology Department at Egas Moniz Dental Clinic for periodontal assessment, between October 2019 and March 2021. The inclusion criteria were: periodontitis; 18 < age < 65, complying with the recommendations given for halitosis assessment and providing informed consent. Exclusion criteria were as follows: previous periodontal treatment; antibiotics within the last 4 weeks; history of radiotherapy or chemotherapy; extra-oral causes for halitosis; and pregnancy.

One calibrated examiner performed a full-mouth periodontal examination with a manual periodontal CP-12 probe (Hu-Friedy[®], Chicago, IL, USA). Periodontitis was defined according to the AAP/EFP 2018 consensus [4]. Halitosis was diagnosed in two steps: (1) self-reported questionnaire, to exclude possible causes for extra-oral halitosis; self-perception of halitosis (using a visual analog scale of 10 cm); self-awareness was recorded as follows: (a) previously warned for bad breath; (b) whom might have informed them; and (c) self-perception for needing treatment for halitosis. Then, in step (2), volatile sulfur compounds (VSC) were quantified through a device (Halimeter[®], Interscan Corp, Chatsworth, CA, USA), with less than 80 ppb denoted as no perceptible odor, and higher

than 80 ppb denoted as halitosis [5]. Data were analyzed by descriptive and inferential methodologies. A significance level of 5% was established in the latter.

3. Results and Discussion

From a total of 117 participants, 57% females and 43% males, 84 were evaluated, regarding halitosis status, by VSC counting. From these, 46.4% were diagnosed as having halitosis (VSC > 80 ppb). Overall, self-perception for halitosis needing treatment (SPHNT) was low ($n = 42$, 51.2% from total) and awareness, brought to their attention by a third-party, was lower ($n = 32$, 38.1% from total). SPHNT was higher in the diagnosed halitosis group (57.9 vs. 45.5%) (Table 1); however, this difference was not found to be significant ($p = 0.261$). Simultaneously, the proportion of patients previously warned for their halitosis status (PWHS) was higher in that group (46.2 vs. 31.1%), albeit not significantly higher ($p = 0.157$). From these, the majority reported being alerted by a close family member (84.8%).

Table 1. Self-perception and awareness of halitosis as per the halitosis status through VSC count (SPHNT: self-perception for halitosis needing treatment; PWHS: previously warned for their halitosis status).

	No Halitosis (VSC ≤ 80 ppb)	Halitosis (VSC > 80 ppb)	<i>p</i> -Value
SPHNT ($n = 82$), (Yes/No), n (%)	20 (45.5)/24 (54.5)	22 (57.9)/16 (42.1)	0.261
PWHS ($n = 84$) (Yes/No), n (%)	14 (31.1)/31 (68.9)	18 (46.2)/21 (53.8)	0.157

A low rate of self-reported halitosis was found among these patients, and the majority were often informed by close family members. Most respondents indicated that they did not intend to seek treatment for bad breath. No association was found between self-perceived halitosis needing treatment or halitosis awareness and halitosis diagnosis.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by Ethics Committee of EGAS MONIZ (n° 781, 26 June 2019).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

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Conflicts of Interest: The authors declare no conflict of interest.

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