Frontiers in Health Informatics
ISSN-Online: 2676-7104
www.healthinformaticsjournal.com
2024; Vol 13: Issue 8
Open Access

Case Report Management of Halitosis Patient Halitophobia and Pseudo Halitosis Condition at Halitosis Care Center Siti Hajar Hospital Medan

Suci Erawati
Dental Public Health, Faculty Dentistry, Universitas Prima Indonesia, Indonesia
Email Corresponding Author: esuci64@gmail.com

Cite this paper as: Suci Erawati (2024), Case Report Management of Halitosis Patient Halitophobia and Pseudo Halitosis Condition at Halitosis Care Center Siti Hajar Hospital Medan. *Frontiers in Health Informatics*, *Vol.13, (8). 2422-2427*

Abstract
Halitosis or bad breath not only causes complaints in sufferers but also disturbs people around them. This situation can cause a decrease in a person's quality of life, such as feeling embarrassed, lacking self-confidence, and difficulty interacting socially. The classification of halitosis consists of true halitosis, pathological halitosis, and halitophobia. To resolve patient complaints, management methods must be differentiated. This case report describes two types of halitosis cases, namely Halitophobia and Pseudo Halitosis at the Halitosis Care Center at Siti Hajar Hospital, Medan. This study aims to determine the management of halitophobia with pseudo-halitosis. In the first case, a patient with a diagnosis of pathological halitosis, poor OHIS, and a VSC score: of 1164 ppb underwent scaling root planning (TN3), tooth filling 36 46 (TN4), mouthwash, and administration of probiotics. In the second case, a patient with a diagnosis of halitophobia with a VSC gas level of 345 ppb underwent treatment (TN1) and Cognitive Behavioral Therapy. Management of halitosis must be by treatment needs, including intraoral examination, history taking, and education.

Keywords: Halitosis, Treatment Need, Halitophobia, Pseudo Halitosis

Introduction

Bad breath or halitosis is a condition characterized by an unpleasant odor from the mouth. This condition can also be accompanied by dry mouth, a bad taste in the mouth, and a white color on the tongue. Bad breath or halitosis is a condition that can be experienced by anyone. This condition can be caused by the type of food consumed, poor oral hygiene, illness, or an unhealthy lifestyle [1] [2]. Everyone can experience bad breath and can occur without realizing it. If this situation is not treated immediately, it can reduce fluency in communication, feelings of low self-esteem, cause embarrassment for sufferers, difficulty interacting socially, loss of self-confidence, and for people who are not aware that bad breath will disturb the people around them, so it can have a wide impact on work and personal life [2] [3] [4].

Halitosis is usually caused due to poor oral hygiene, deep caries periodontal disease, oral cavity infections, dry mouth, smoking, mucosal ulceration, and Tongue Coating. However, there are times when halitosis can also be caused by extra-oral factors such as systemic diseases, consumption of certain drugs, and poor dietary habits. Almost 90% of halitosis cases are caused by bacteria and lack of oral hygiene [2] [5] [6] [7].

Poor oral hygiene is a risk factor for oral dental disease. Oral hygiene practices are influenced by the socio-demographic environment, education level, and socio-economic status which contribute to the

habit of maintaining oral hygiene. Examination of oral hygiene status is a condition or condition of oral hygiene that describes good, moderate, or poor oral hygiene. The index used in this study to assess oral hygiene is the Oral Hygiene Index Simplified (OHIS) according to Greene and Vermilion [1] [3] [5] [8].
The mechanism for bad breath is caused by odorous components in the breath or air in the mouth. The gas compound most responsible for the emergence of halitosis is the Volatile Sulfur Compound (VSC). VSC gas is the result of the production of the activity of anaerobic bacteria in the mouth in the form of compounds that have an unpleasant odor and evaporate easily, giving rise to an odor that is easily smelt by other people around them. The VSC gas compounds that play a role in the emergence of halitosis are hydrogen sulfide (H2S), methyl mercaptan (CH3SH), and dimethyl mercaptan (CH3)2S. The three VSC gas compounds are quite large in number and evaporate very easily, causing an odor [5] [8].
There are several types of halitosis, namely: Genuine Halitosis true halitosis, or actual halitosis. This type of halitosis is divided into physiological halitosis and pathological halitosis. Physiological halitosis is halitosis that is temporary and there is no pathological condition that causes halitosis. An example of physiological halitosis is morning breath, namely bad breath when you wake up in the morning [1] [5]. Pathological halitosis is halitosis that is permanent and cannot be treated simply by maintaining oral hygiene but requires treatment according to the source of the cause of the halitosis [8] [9] [10]. The growth of bacteria associated with poor oral hygiene is the cause of halitosis. Halitophobia if after undergoing treatment for either genuine halitosis or pseudo halitosis the patient still complains of halitosis. So the patient's condition falls into the halitophobia category.
Halitosis measurement can be done in various ways, including Organoleptic Measurement (OM) [11] [12] [13]. Measurement by directly smelling the respiratory air emitted from the mouth. The subject was instructed to close his mouth for 1 minute and breathe through his nose, after which the subject exhaled slowly, with a distance of approximately 10 cm between the subject and the examiner. The Oral Chroma tool, this tool is a tool for detecting halitosis that is simple to use, and equipped with a newly created semiconductor oxide sensor, indium gas (SCS) to measure the concentration of VSC gas in the mouth. This tool measures hydrogen sulfide compounds, which are the main cause of halitosis [12] [14] [15].
Based on clinical experience, patients who visit the Halitosis Care Center generally complain that their mouth smells bad, but after an intra-oral examination, they often do not find any bad symptoms of OHIS. Although there are several cases with high VSC gas levels accompanied by poor OHIS. Cognitive Behavioral Therapy (CBT), known as cognitive therapy, is a type of psychotherapy. This therapy is widely used for various psychiatric problems, including stress, depression, and anxiety disorders. Some of these problems are often experienced by halitophobia sufferers [16] [17] [18].
There are several treatments for halitosis, but first, the etiology of halitosis must be identified. as in the table below [19] [20] [21].

Table 1. Classification of Halitosis

Classification	**Maintenance**
1. *Genuine* Halitosis	
A.Halitosis Fisiologis	TN-1: Explanation of halitosis and instructions for oral health support and strengthening of the patient's self-care for further improvement of their oral hygiene.
B.Halitosis Patologis	
i. Intra Oral	TN-1 TN-2: Oral prophylaxis, cleaning, and professional treatment for oral diseases, periodontal disease in particular.
ii. Ekstra Oral	TN-1 TN-3: Referral to a doctor or specialist.
II. *Pseudo* Halitosis	TN-1

	TN-4: Explanation of inspection data, further instructions from professional staff, education, and assurance.
III. Halitophobia	TN-1 TN-5: Referral to a clinical psychologist, psychiatrist, or psychology specialist.

This case report aims to determine the difference and management of halitosis caused by poor OHIS and cases of good OHIS halitosis without any abnormalities in the oral cavity.
First case: A 48-year-old male patient complained of bad breath for 6 months. On intra-oral examination, it was found: that teeth 48,47,46,38,37. Superficial caries, calculus on the upper/lower jaw. OHIS score 3 (bad). Tongue Coated positive; Patients often complain of xerostomia and bleeding gums. The patient has no history of systemic disease, often uses mouthwash, defecates smoothly every day, and the patient does not take certain medications. An examination was carried out using a Breathron II device, and a VSC (Volatile Sulfur Compound) gas level was found to be 1264 ppb. As seen in Figure 1.

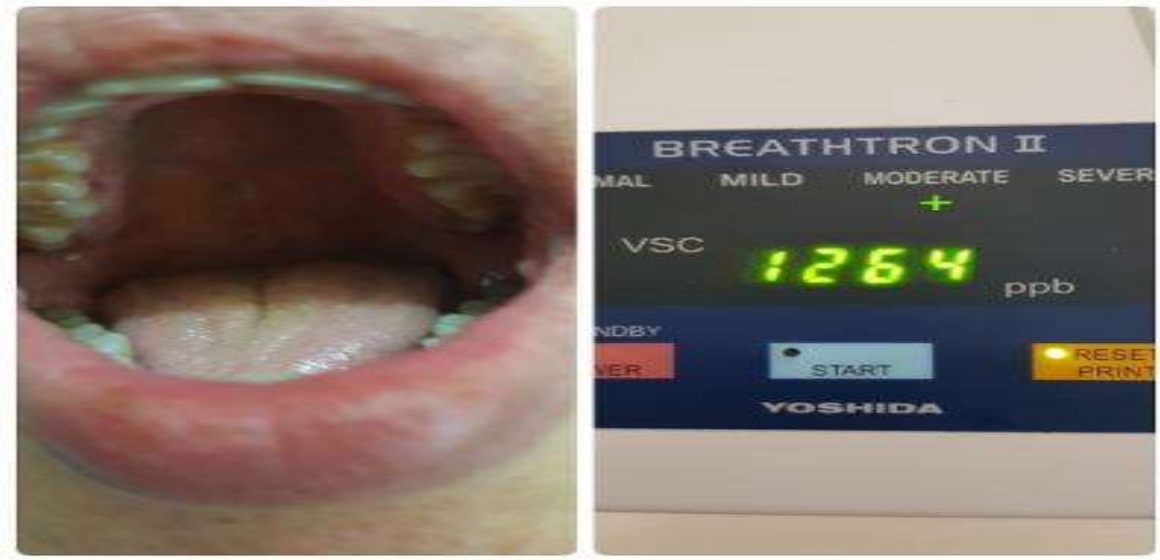

Figure 1. Volatile Sulfur Compound

Management
By the theory regarding Treatment Needs, the case above is included in TN 2, namely at the first visit oral prophylaxis was carried out by cleaning tartar and instructions for maintaining oral hygiene. Next, at the second visit, teeth 48, 47, 46 were filled. At the third visit, teeth 38, and 37 were filled. A month after TN 2 was carried out, the patient came back to measure the VSC gas level and it decreased to 249 ppb (parts per billion). As seen in Figure 2.

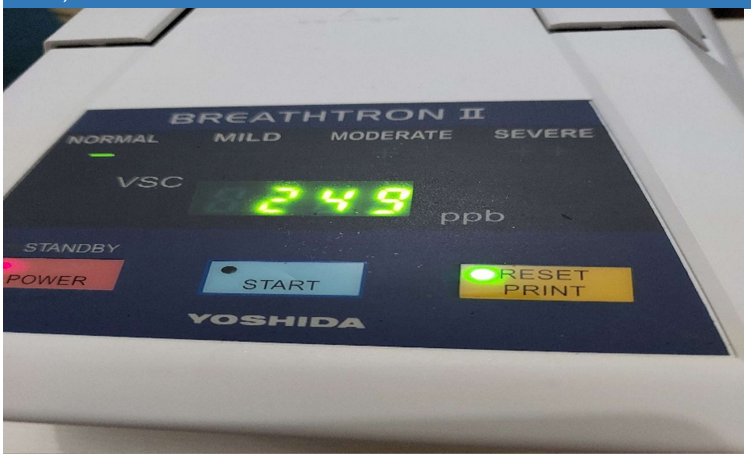

Figure 2. parts per billion

Case 2

A 45-year-old female patient complained of halitosis two years ago. On intra-oral examination, the condition of the oral cavity was good, there were no dental caries, there were a few white spots on the tongue (tongue coated) and there was a little calculus on the lower anterior teeth. The patient's general condition is good, he has no history of systemic disease. The patient always feels insecure because his mouth smells, so the patient feels anxious about social interactions with other people. After checking the VSC gas levels, the results showed mild halitosis as shown in Figure 3.

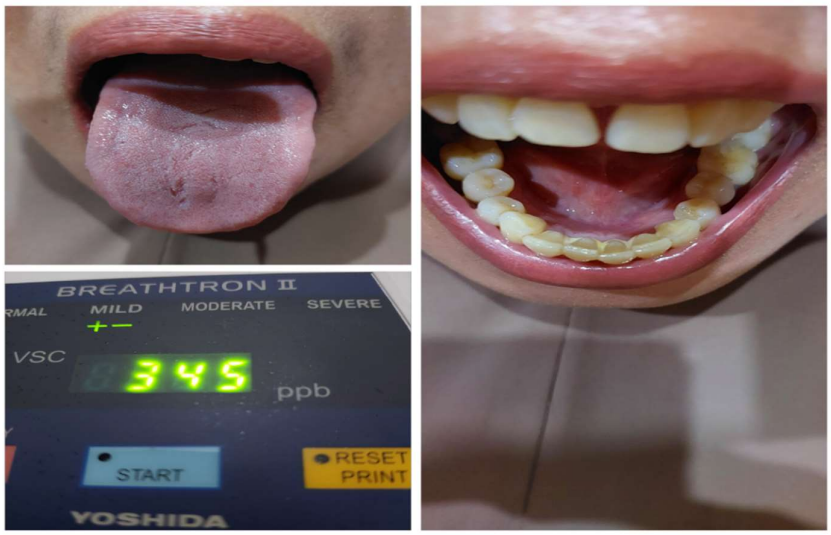

Figure 3. gas levels

Management

By the Treatment Need theory, for this second case, TN 1 was carried out, namely an explanation of halitosis and instructions for oral health as well as CBT (Cognitive Behavioral Therapy), which is a form of psychotherapy that has been proven effective for various problems including depression, anxiety disorders, alcohol abuse problems and substances, family problems, eating disorders, and severe mental illness, including halitophobia. The step taken is that the patient is asked to change wrong or negative thought patterns. Reassure the patient that negative thoughts about halitosis are wrong. Build patient confidence by showing the results of VSC gas measurements including the criteria for mild halitosis as well as instructions for using mouthwash at the correct dose and time.

Case 3
A 21-year-old female patient came in with a complaint that she felt like her mouth smelled. The patient wore a fixed orthodontic plane for 1 year. Oral hygiene conditions are good, there are no dental caries. The patient feels anxious about his bad breath as shown in Figure 4.

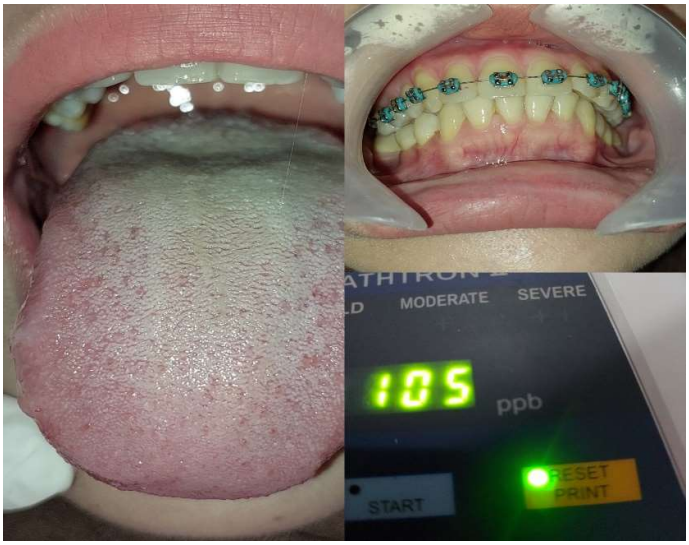

Figure 4. The patient feels anxious

Management
By the Treatment Need theory, for this third case, TN 1 was carried out, namely an explanation of halitosis and instructions for oral health, routine control for orthodontic treatment to maintain oral hygiene, and CBT (Cognitive Behavioral Therapy), which is a form of psychotherapy that has been proven to be effective for various problems including depression, anxiety disorders, alcohol and substance abuse problems, family problems, eating disorders, and severe mental illness, including halitophobia. The step taken is that the patient is asked to change wrong or negative thought patterns. Reassure the patient that negative thoughts about halitosis are wrong. Build patient confidence by showing the results of VSC gas measurements including the criteria for mild halitosis as well as instructions for using mouthwash at the correct dose and time.

Conclusion
From the two cases above, it can be concluded that the management of halitosis patients requires the following steps:
1. Appropriate history taking to obtain a history of systemic disease and dental disease, patient habits, food consumed, and lifestyle.
2. Comprehensive intra-oral examination, namely: presence or absence of caries, periodontal disease, tongue coating examination, use of prostheses, and use of orthodontic planes.
3. Check VSC gas levels with a tool.
4. In patients with pathological halitosis with poor OH, apply TN 1 (Treatment Need), and TN2 (Treatment Need), namely explanation of halitosis, oral prophylaxis, instructions, and education.
5. For halitophobia patients, apply TN1 (Treatment Need) and CBT
6. Communicate educational instructions to patients.

References
[1] O. Akpata, O. F. Omoregie, K. Akhigbe, and E. Ehikhamenor, “Frequency of delusional halitosis

in a university community," *Benin J. Postgrad. Med.*, vol. 8, no. 1, 2006.
[2] C. C. Azodo, M. I. Onyeagba, and C. D. Odai, "Does concern about halitosis influence individual's oral hygiene practices?," *Niger. Med. J. J. Niger. Med. Assoc.*, vol. 52, no. 4, p. 254, 2011.
[3] M. Aydin, C. M. Bollen, and M. E. Özen, "Diagnostic Value of Halitosis Examination Methods.," *Compend. Contin. Educ. Dent. (Jamesburg, NJ 1995)*, vol. 37, no. 3, pp. 174–178, 2016.
[4] B. Nisa Srimayarti, D. Leonard, and D. Zhuhriano Yasli, "Determinants of Health Service Efficiency in Hospi-tal: A Systematic Review," *Int. J. Eng. Sci. Inf. Technol.*, vol. 1, no. 3, 2021, doi: 10.52088/ijesty.v1i3.115.
[5] D. A. Bicak, "A current approach to halitosis and oral malodor-a mini review," *Open Dent. J.*, vol. 12, p. 322, 2018.
[6] O. Oktamianiza, D. Maisa Putra, Y. Yulia, A. Fahira, and A. Afridon, "Analysis of Differences in Tariff for Health Service Based on Sustability of Diagnosis on Admision and Summary Discharge Form with INA-CBGs Verification," *Int. J. Eng. Sci. Inf. Technol.*, vol. 1, no. 3, 2021, doi: 10.52088/ijesty.v1i3.114.
[7] D. Abdullah, S. Susilo, A. S. Ahmar, R. Rusli, and R. Hidayat, "The application of K-means clustering for province clustering in Indonesia of the risk of the COVID-19 pandemic based on COVID-19 data," *Qual. Quant.*, 2021, doi: 10.1007/s11135-021-01176-w.
[8] C. M. L. Bollen and T. Beikler, "Halitosis: the multidisciplinary approach," *Int. J. Oral Sci.*, vol. 4, no. 2, pp. 55–63, 2012.
[9] A. Dayma, M. Jain, V. Saxena, N. Torwane, V. Vishu, and A. Khare, "Validation of organoleptics and instrumental measurement for halitosis among patient with malodour," *J Dent Heal. Oral Disord Ther*, vol. 11, no. 1, pp. 6–10, 2020.
[10] A. M. H. Pardede *et al.*, "Digital Image Security Application With Arnold Cat Map (ACM)," *J. Phys. Conf. Ser.*, 2018, doi: 10.1088/1742-6596/1114/1/012059.
[11] U. Kapoor, G. Sharma, M. Juneja, and A. Nagpal, "Halitosis: Current concepts on etiology, diagnosis and management," *Eur. J. Dent.*, vol. 10, no. 02, pp. 292–300, 2016.
[12] P. P. Lee, W. Y. Mak, and P. Newsome, "The aetiology and treatment of oral halitosis: an update," *Hong Kong Med J*, vol. 10, no. 6, pp. 414–418, 2004.
[13] D. Maisa Putra, O. Oktamianiza, M. Yuniar, and W. Fadhila, "Study Literature Review On Returning Medical Record Documents Using HOT-FIT Method," *Int. J. Eng. Sci. Inf. Technol.*, vol. 1, no. 1, 2021, doi: 10.52088/ijesty.v1i1.102.
[14] J. D. McDowell and D. K. Kassebaum, "Diagnosing and treating halitosis.," *J. Am. Dent. Assoc.*, vol. 124, no. 7, pp. 55–64, 1993.
[15] T. Murata, T. Yamaga, T. Iida, H. Miyazaki, and K. Yaegaki, "Classification and examination of halitosis," *Int. Dent. J.*, vol. 52, no. S5P1, pp. 181–186, 2002.
[16] H. Miyazaki, S. Sakao, Y. Katoh, and T. Takehara, "Correlation between volatile sulphur compounds and certain oral health measurements in the general population," *J. Periodontol.*, vol. 66, no. 8, pp. 679–684, 1995.
[17] M. A. Nazir, K. Almas, and M. I. Majeed, "The prevalence of halitosis (oral malodor) and associated factors among dental students and interns, Lahore, Pakistan," *Eur. J. Dent.*, vol. 11, no. 04, pp. 480–485, 2017.
[18] D. Abdullah *et al.*, "A Slack-Based Measures within Group Common Benchmarking using DEA for Improving the Efficiency Performance of Departments in Universitas Malikussaleh," 2018, doi: 10.1051/matecconf/201819716005.
[19] H. P. Singh, "Halitosis: A psychological trouble for the patient," *J. Adv. Med. Dent. Sci. Res.*, vol. 3, no. 6, p. S92, 2015.
[20] M. Sanz, S. Roldán, and D. Herrera, "Fundamentals of breath malodour," *J Contemp Dent Pr.*, vol. 2, no. 4, pp. 1–17, 2001.
[21] C. Scully and J. Greenman, "Halitology (breath odour: aetiopathogenesis and management)," *Oral Dis.*, vol. 18, no. 4, pp. 333–345, 2012.