

## Bad breath and social anxiety disorder: time for a fresh new perspective?

The Halitosis Consequences Inventory: psychometric properties and relationship with social anxiety disorder  
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Most of us are familiar with the feeling of nervousness and anxiety that kicks in just before a big interview or an important date. We make sure our clothes are in order, hair in place and take a quick whiff of our breath to see if we should pop in a mint or two to freshen it up before the crucial moment. After all, first impressions matter and having fresh smelling breath often contributes a large part to our self-confidence in social interactions and situations. This isn't a routine worry for some, but for others, halitosis is a daily concern that has profound consequences on their emotions and social behaviour.

In fact, social anxiety disorder (SAD) has been reported to be the most common mental health disorder associated with halitosis complaints and this group of individuals often have difficulty overcoming their halitosis anxiety, even after successful treatment. This is why some have now suggested that treatment of genuine halitosis should take into consideration both the breath malodour and SAD, if present. To do this, tools such as the Halitosis Consequences Inventory (ICH) have been developed to evaluate the psychological consequences of halitosis.

This paper by Conceicao *et al.* aimed to answer two main questions: how valid is the ICH questionnaire and what is the relationship between these consequences and SAD? The participants of the study included those with and without halitosis complaints, and they were asked to complete the ICH and a number of different scales that measure social anxiety.

Overall, the results were generally positive for the ICH, which demonstrated adequate internal consistency as well as the ability to discriminate between participants with and without halitosis. Participants with high ICH scores were also more likely to have higher SAD scores, indicating a close relationship between halitosis and social anxiety. However, the authors acknowledge that a causal relationship between the two could not be drawn from this study, due to limitations in its design.

In practice, these findings suggest that the ICH could be used by general dental practitioners to measure how severely halitosis is affecting a patient's daily life and identify those who might benefit from SAD screening, so that psychological and/or psychiatric support can be provided, if needed. The authors hope that this holistic approach to care will improve outcomes of halitosis treatment, but for now, suggest that more research with larger samples sizes be done to further validate their current findings.

By Jed Y. J. Lee (Queen Mary University of London)

### Author Q&A

Mauricio Duarte da Conceicao  
Universidade São Francisco, Sao Paulo, Brazil



#### Why is a halitosis consequences inventory necessary?

The Halitosis Consequences Inventory (ICH) was developed to investigate the negative impact that the complaint of having halitosis has on the lives of those who suffer from the problem. Most patients who complain about having halitosis come to the clinic for treatment with a strong belief that they have bad breath that everyone notices. However, in the vast majority of cases, this complaint is not confirmed. In addition, after treatment has been performed, some of these patients continue to believe that their halitosis persists despite being fully controlled. In my study, it was possible to establish an important relationship between a high ICH score and the presence of typical symptoms of social anxiety disorder (SAD), which occurs

in more than 50% of patients who complain about having halitosis. In other words, a high score in the ICH indicates the need to screen for SAD, referring the patient for psychological treatment, if necessary.

#### What was the biggest challenge in carrying out this study?

One of the major challenges of this study was to make it understandable for dental and medical professionals, because it is a study that basically deals with instruments for psychological evaluation and its psychometric properties.

#### What is next for your research?

As a complement to my research, two more studies will be published, one relating ICH to social anxiety disorder (SAD) and avoidant personality disorder (APD), and another study on the diagnosis and treatment of the psychological consequences of halitosis. The first study has as an important aspect: that the comorbidity of SAD and APD makes treating the psychological consequences of halitosis much more challenging. The second study presents a step-by-step method so that dentists can have good results in the treatment of psychological consequences of halitosis. ■