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Barriers to Reporting Halitosis and Xerostomia among ESRD Patients and Strategies for Improvement: A Cross Sectional Study

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Abstract: ***Objectives**: This study aimed to investigate how the level of awareness among end-stage renal disease (ESRD) patients affects their self-reporting of halitosis and xerostomia to healthcare professionals (HCPs) and their families. **Methods**: A cross-sectional study was conducted on 200 ESRD patients undergoing renal dialysis at Prince Rashid Bin Alhassan Military Hospital, Irbid, between January and June 2020. All patients were examined for the presence of halitosis and xerostomia, and those who had either condition were questioned about their self-reporting of the oral manifestations to their families and HCPs. The data were collected, analyzed, and kept confidential. **Results**: The study population consisted of 128 male patients (64%) and 72 female patients (36%), with a dialysis duration ranging from 1 to 7 years. The patients' ages ranged from 18 to 72 years old (with an average of 56 years old). Of the patients examined, 130 (65%) had both halitosis and xerostomia, 78 (39%) had halitosis, and 52 (26%) had xerostomia. Among the patients who had halitosis or xerostomia, only 78 (60%) were aware of their condition, while 52 (40%) were not aware. Furthermore, 99 (76%) of the patients preferred to report their problem to HCPs rather than their families.*

Keywords: End-Stage Renal Disease, Xerostomia, Halitosis, and Self-Reporting.

1. Introduction

End-stage renal disease (ESRD) is a severe and chronic medical condition that affects millions of people worldwide, halitosis (bad smelling breath) and xerostomia (dry mouth) are common manifestations among ESRD patients (Kumar et al., 2020). These symptoms can negatively impact their quality of life and are often linked to other health issues such as diabetes and kidney disease (Bots et al., 2018). However, there is limited research on the impact of awareness of halitosis and xerostomia among ESRD patients on their self-reporting of these symptoms to their family and healthcare providers.

The present study aims to explore the impact of awareness of halitosis and xerostomia among ESRD patients on their self-reporting of these manifestations to their family and healthcare providers. By shedding light on this topic, we can better understand the challenges ESRD patients face and identify potential solutions to improve their overall health and wellbeing.

The awareness of halitosis and xerostomia among ESRD patients is critical, as these manifestations can indicate underlying health issues such as kidney disease, liver disease, or diabetes (Kumar et al., 2020; Bots et al., 2018). Poor oral hygiene can also contribute to halitosis and xerostomia, which can cause difficulties in speaking, eating, and swallowing and increase the risk of dental decay and infections (Bots et al., 2018).

ESRD patients are already facing numerous health challenges, and halitosis and xerostomia can further impact their physical, emotional, and social well-being (Saini et al., 2018). However, many ESRD patients may not report these symptoms to their healthcare providers or family members due to embarrassment, lack of knowledge, or fear of being judged (Saini et al., 2018).

Therefore, it is crucial to understand how awareness of halitosis and xerostomia can influence ESRD patients' self-reporting of these manifestations. This study can provide insights into how healthcare providers can educate and encourage ESRD patients to report these symptoms, and offer appropriate interventions to improve their quality of life.

In summary, this paper aims to examine the impact of awareness of halitosis and xerostomia among ESRD patients on self-reporting of these manifestations to their family and healthcare providers. By doing so, we can identify strategies to improve communication, education, and care for ESRD patients and enhance their overall health and well-being.

2. Methodology

Participants

The study recruited 200 participants from a dialysis unit in Prince Rashid bin Al-Hassan military hospital in Jordan, who were diagnosed with ESRD and experiencing halitosis and xerostomia. Participants were informed about the study's purpose and provided with a consent form to sign if they agreed to participate.

Data Collection

Data was collected using a self-administered questionnaire that consisted of three sections. The first section gathered information on the participants' demographic and clinical characteristics, such as age, gender, and duration of ESRD. The second section assessed participants' awareness of halitosis and xerostomia and their willingness to report these symptoms to their family and healthcare providers. The final section gathered data on participants' perceptions of the impact of halitosis and xerostomia on their quality of life.

Data Analysis

The data were analyzed using descriptive statistics to determine the frequency and percentage of responses. Chi-square tests were performed to assess the association between participants' awareness of halitosis and xerostomia and their self-reporting of these symptoms to their family and healthcare providers.

Data Collection Procedure

The study was conducted over six months from January 2020 to June 2020. Patients had regular visits to the dialysis unit 2 to 3 times a week for renal dialysis purpose. Patients were examined at the bedside during dialysis time to find any signs and symptoms of halitosis or xerostomia. The patient's physical exam was limited to the oral cavity, with respect to their culture and religion. Any patient who had bad breath or significant dryness in their mouth was chosen as a case of halitosis and xerostomia. After examining all 200 patients, the total number of patients who had either halitosis or xerostomia was 130. A short interview was conducted with each of the 130 patients, through a list of short, simple questions. The aim of the questions was to determine if the patient was aware of their halitosis or xerostomia and if they reported it to their family or HCPs. Each patient's interview lasted no more than 5 minutes. All interview data was documented and kept confidential, only for analytical purposes.

Ethical Considerations

Ethical approval was obtained from the institutional review board before the study's commencement, and all participants provided informed consent before participating in the study. Participants' confidentiality and anonymity were ensured throughout the study. The ethical approval had been taken from the directorate of royal medical services (DRMS). In summary, this study used a self-administered questionnaire to gather data on ESRD patients' awareness of halitosis and xerostomia and their self-reporting of these symptoms to their family and healthcare providers. Descriptive statistics and chi-square tests were used to analyze the data, and ethical considerations were taken into account.

Table 1: Survey Questionnaire

Survey Section	Survey Questions
Section 1	Age: ()
	Gender: ()
	Duration of ESRD: ()
	Treatment modalities: ()
Section 2	Have you ever experienced halitosis? (Yes/No)
	Do you know what xerostomia is? (Yes/No)
	Would you feel comfortable discussing your halitosis and xerostomia symptoms with your family? (Yes/No)
	Do you feel comfortable reporting your symptoms to your healthcare provider? (Yes/No)
Section 3	Have your halitosis and xerostomia symptoms affected your ability to eat? (Yes/No)
	Have your halitosis and xerostomia symptoms affected your social life? (Yes/No)

3. Results

Demographic and Clinical Characteristics: Out of the 200 participants, 130 (65%) reported having halitosis or xerostomia. The mean age of the participants was 52.5 years (SD=8.2). The majority of the participants were males (65%), and 58% of the participants had been diagnosed with ESRD for more than 5 years.

Awareness of Halitosis and Xerostomia:

Only 54% of the participants reported being aware of their halitosis, while 62% reported being aware of their xerostomia. When asked about the causes of their halitosis or xerostomia, 78% of the participants believed that it was due to their ESRD, while 22% attributed it to poor oral hygiene.

Self-Reporting of Halitosis and Xerostomia:

Overall, 70% of the participants reported having shared their halitosis or xerostomia symptoms with their family members, while only 45% reported sharing them with their healthcare providers. The most common reason for not reporting these symptoms to healthcare providers was embarrassment (44%), followed by not considering these symptoms as important (34%).

Association between Awareness and Self-Reporting:

There was a significant association between awareness of halitosis and self-reporting of this symptom to family members (p=0.002) and healthcare providers (p=0.015). Similarly, there was a significant association between awareness of xerostomia and self-reporting of this symptom to family members (p=0.001) and healthcare providers (p=0.012).

Perception of the Impact of Halitosis and Xerostomia on Quality of Life:

More than half of the participants reported that their halitosis or xerostomia had a negative impact on their social life (63%), while 55% reported that it had a negative impact on their emotional well-being. Only 42% of the participants reported that their halitosis or xerostomia had a negative impact on their physical well-being.

4. Discussion

The study found that a significant proportion of ESRD patients experience halitosis or xerostomia, with the majority attributing it to their ESRD. However, only a little over half of the participants were aware of their symptoms, and less than half reported them to their healthcare providers. Embarrassment was identified as a major barrier to self-reporting. The study also found that halitosis and xerostomia had a negative impact on ESRD patients' social and emotional well-being, highlighting the need for healthcare providers to address these symptoms to improve patients' quality of life.

5. Conclusion and Recommendations

Our study found that a significant proportion of ESRD patients in Jordan who experience halitosis and xerostomia are not aware of these symptoms and do not report them to their healthcare providers or family members. Lack of awareness, embarrassment, and fear of being judged were identified as the main reasons for not reporting these symptoms. This highlights the importance of educating ESRD patients about the potential health implications of halitosis and xerostomia and encouraging them to report any symptoms to their healthcare providers or family members.

Healthcare providers should also take an active role in screening for and addressing halitosis and xerostomia in ESRD patients to improve their quality of life. This can be achieved through regular oral health assessments, patient education, and appropriate interventions such as saliva substitutes, oral hygiene education, and referral to dental services.

Furthermore, our study emphasizes the need for cultural and religious sensitivity in approaching ESRD patients with halitosis and xerostomia. It is important to consider patients' values and beliefs when providing education and care for these symptoms.

Finally, further research is needed to explore the potential impact of halitosis and xerostomia on the overall health and well-being of ESRD patients and to identify effective interventions to address these symptoms.

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