

Background

Dry mouth, also known as “xerostomia,” is a commonly overlooked symptom typically associated with salivary gland hypofunction (SGH) and reduced salivary flow (1) affecting millions of people across the United States. The prevalence of dry mouth ranges from 10-46% and varies widely depending on health status, medication use, and age (2). While it is reported that 30% of those over 65 experience dry mouth, it is currently accepted that salivary production and composition are probably not age-dependent in healthy persons (3). Lacking any studies of xerostomia in South Texas, the prevalence here remains unknown.

Patients, in the community, with dry mouth exhibit symptoms of varied severity and etiology. Medication use, chronic disease and medical treatment, such as radiotherapy to the head and neck region are commonly attributed causes of dry mouth. Dry mouth increases the risk of numerous oral conditions including:

- Tooth demineralization
- Rampant dental cavities
- Candidiasis
- Altered taste sensation
- Difficulty chewing

These conditions may negatively affect an individual’s quality of life (QoL) and become increasingly problematic in the absence of awareness and management.

The South Texas Oral Health Network (STOHN), Madonna Center (MC) and Bexar County Translational Advisory Board (TAB) have a history of working shoulder-to-shoulder on community engaged research projects. These projects have been tailored to be culturally appropriate to the needs of underserved areas of South Texas. The findings of these projects have been disseminated at various community events. STOHN partnered with MC and Bexar County TAB to develop a novel web application aimed at increasing community awareness of dry mouth.

Significance

Dry mouth affects approximately 1 in 5 people (2) and can negatively affect an individual’s quality of life, yet is often overlooked by the general population. Although occasional dry mouth is normal, some people experience severe dry mouth daily. Dry mouth may be a symptom of a systemic disease and can contribute to problematic oral conditions.

It is important to understand how community members access oral health information to aid in early recognition and management of dry mouth. The innovative web application will allow individuals to self-assess, providing them a snapshot of their current dry mouth status over time, and provide concrete information that will help decide lifestyle changes. Additionally, this partnership is aimed at enhancing communication between patients and their providers to increase overall knowledge and understanding of xerostomia.

Methods

Through UTHSA IRB approval HSC 18-0098E, two modified focus groups based on Technology of Participation (ToP®) methods were conducted. One focus group was held with oral health practitioners and Bexar County TAB members (n=29). The second focus group included community members from the Edgewood area at the Madonna Center (n=23). Participants were recruited via word-of-mouth, phone calls, e-mail and recruitment flyers. Attention was given to recruiting a representative sample of dentists and dental hygienists, as well as community members from different demographic groups. Participants completed a brief demographic survey at the beginning of each focus group. Thereafter each focus group began with the question:

What information do you feel a dry mouth web application should have to increase understanding, awareness, and communication about dry mouth?

Answers were grouped thematically, discussed and refined to become major components for the development of the pending web application.

Results

Oral health practitioners, Bexar County TAB members, and Edgewood community residents participated in ToP® sessions focused on investigating the best way to present oral health resources to individuals suffering from xerostomia.

Participants were primarily female (75%) and/or Hispanic (72%). Among participants dentists (4%), hygienists (14%) TAB members (31%), community members (49%), and University residents (2%). See **Table 1** below.

Table 1. Demographics

Variable	Percent	Freq.
Background		
Oral Health Provider	20%	10
Bexar County TAB member	31%	16
Edgewood Community Member	49%	25
Education		
High School Grad/GED	43%	22
Undergraduate Degree	21%	11
Graduate/Professional Degree	36%	19
Monthly Income		
\$0-\$1000	29%	13
\$1001-\$2000	13%	6
\$2001-more than \$3000	58%	26

The majority (54%) of participants were not confident in recognizing dry mouth, nor did they know how to take care of dry mouth (40.4%).

Results (cont.)

Given the acknowledgement of uncertainty between both samples, understating how users access and prioritize the information they receive was a critical component in the development of a novel web application. Several themes emerged from both focus groups. See **Figures 1 and 2**.

Fig. 1 Community Consensus Building Report

Available Resources and Locations	Visual Education on Dry Mouth	Symptoms and medications to look for	Solutions to Treating Dry Mouth	Interact with Us
See a Doctor and Dentist for Dry Mouth Solutions	Pictures of Dry Mouth with Healthy one	Dry Mouth wakes me up at night	Make enough saliva around Dry Mouth	Music or/8 Games
Local listing of specialists treating Dry Mouth	Healthy/Unhealthy	When waking up why do we get dry mouth	Age Group	Q&A w/Professionals Chat Box
Where to find Assistance	Pictures/Videos	Sleeping with your mouth open causes dryness	What products to use	Send Message to Dentist
	Cracked Tongue Pictures	Symptoms ²	Dual Language	Interactive Features Reminders

“ Dry mouth makes me wake up at night. What do I do? ”
 --Edgewood Community Participant

Fig. 2 Dental Practitioner Consensus Building Report

How to take care of dry mouth	Self-Awareness Tools	Where can I find help?	How is this app going to look?	How do I know if I have Dry Mouth?	Make information engaging and reliable	FAQs and learning from others	Make it fun
OTC Treatment	Interactive Flowcharts	Additional Resources	Font Size (Big)	Symptoms, causes, Treatment and Prevention	Identifiable logo	Support Groups (online and in-person)	Games
When to seek Professional care	Algorithms	Search Function	Different colored tabs	Term Definition	Pictures	Ask Questions Self-Assessment	
Treatment options	Flow Chart for Treatment	Plain Language	Succinct Information	Symptoms-Prevalence	Examples wide cross-section personal exp.	Questions to ask physician	

Conclusions

This study has the potential to improve health outcomes by increasing the oral health literacy of the community regarding dry mouth and its impact on quality of life. It also has the potential to develop lines of communication between patients and their oral health and medical providers. Based on the information gathered, community members were interested in learning about how to seek care regarding dry mouth. A segment aimed at helping users understanding how different health professionals can help treat dry mouth will be included in the novel web application pilot (**Figure 3**).

Fig. 3 Health Professionals and Dry Mouth



Common themes from both sessions included:

- Extensive information and resources on what dry mouth is and identifying the symptoms of dry mouth
- Visual aids
- Bilingual text that is easy to read

Fig. 4 ToP®’s Session at the Madonna Center



The partnership’s next steps include to develop and launch a culturally appropriate Dry Mouth web application pilot. By doing so, the partners hope to positively influence quality of life among those suffering from xerostomia. Once launched, factors such as ease of accessibility and comprehension of material will be evaluated by both dental practitioners and community members.

References

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