



## A Survey to Assess the Prevalence of Dry Mouth Among the Patients Visiting to the Department Seeking Prosthodontic Treatment

## KEYWORDS

Saliva, Xerostomia, Medications, Systemic Disease

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## ABSTRACT

**Aim:-** To evaluate the prevalence of dry mouth among patients seeking prosthodontic treatment from the south coastal region of Karnataka. **Methods:-** 100 patients from the south coastal region of Karnataka visiting out-patient department of A. B. Shetty Memorial Institute Of Dental Science seeking prosthodontic treatment were selected randomly. A written informed consent (Annexure I) was obtained from each patient to participate in the study and to use data collected for research. A structured questionnaire was prepared to be filled by the patient. Data collected was tabulated and was statistically analyzed. **Results:-** In the current study, 58% of subjects reported experiencing various symptoms of xerostomia. Among them, 30% of subjects reported experiencing one symptom, 18% reported experiencing two symptoms whereas 10% reported experiencing three symptoms **Conclusion :-** The prevalence of dry mouth is higher in south coastal Karnataka region. Smoking, medication and systemic disease were significant risk factors for dry mouth

## INTRODUCTION

Xerostomia is mainly caused due to reduced function of all the salivary glands and it is subject's sense of loss of wetness of mouth. Reduced flow of saliva is not essentially correlated with xerostomia because subjects with average rate of salivary flow have reported sense of loss of wetness.<sup>1,2,3</sup> The xerogenic medications and systemic diseases, such as radiation therapy and Sjogren's Syndrome are one of the main reasons of reduced function of salivary gland. Saliva has an important part in sustaining the health and function of the oral hard and soft tissues.<sup>4</sup> It is essential for the integrity of the orodental tissues and preparing food for mastication and for the help in talking and food swallowing. Decreased flow rate of saliva can be disturbing to orodental tissues, the lifestyle and overall health of the patient.<sup>5</sup>

The various study have reported the prevalence of xerostomia and it ranges from (0.9-64%) depending upon the inhabitants studied. Many studies have reported the correlation of medication and xerostomia.<sup>5-8</sup> This survey was conducted to to assess the prevalence of dry mouth among the patients visiting to the department seeking Prosthodontic treatment.

## OBJECTIVES OF THE STUDY:

To evaluate the prevalence of dry mouth among patients seeking prosthodontic treatment from the south coastal region of Karnataka.

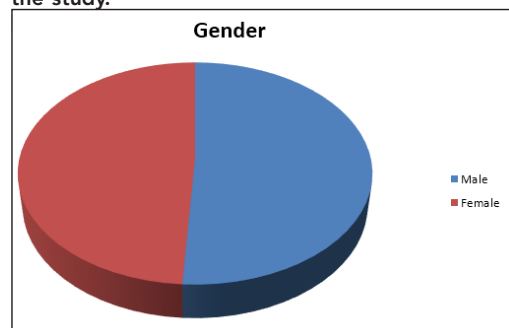
## MATERIALS AND METHODS:

**Sample selection:** 100 patients from the south coastal region of Karnataka visiting out-patient department of A. B. Shetty Memorial Institute Of Dental Science seeking prosthodontic treatment were selected randomly. A written informed consent (Annexure I) was obtained from each patient to participate in the study and to use data collected for research. A structured questionnaire was prepared to be filled by the patient. The subjects were encouraged to give frank answers and was assured that the identity would be kept confidential. Data collected was tabulated and was statistically analyzed.

## RESULTS

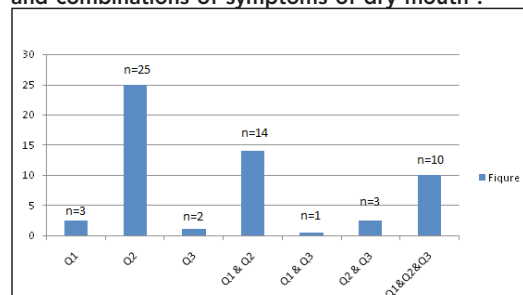
Among the total sample size of 100 patients who agreed to participate in the study 52 were male and 48 were females.

**Graph I:- Gender distribution of subjects participating in the study.**



In the current study, 58% (n=58) of subjects reported experiencing various symptoms of xerostomia. Among them, 30% (n=30) of subjects reported experiencing one symptom, 18% (n=18) reported experiencing two symptoms whereas 10% (n=10) reported experiencing three symptoms (Graph II).

**Graph II:- Evaluation of patients experiencing individual and combinations of symptoms of dry mouth .**



- Q1 = Does your mouth feel dry when eating a meal?
- Q2 = Do you sip liquids to aid in swallowing dry foods?
- Q3 = Do you have difficulties in swallowing any food?

Among subjects who experienced dry mouth 63% (n=37) reported systemic disorders and 62% (n=36) of subjects with dry mouth reported using certain medications, whereas the 37% (n=21) subjects who complaint of dry mouth had no systemic disease and 38% (n=22) subjects who did not use any medications reported of dry mouth.

**Table I:- Evaluation of subjects with systemic disease and consuming medications among subjects with dry mouth.**

Dry mouth	No	Yes
Systemic diseases	37%(n=21)	63%(n=37)
Medication	38%(n=22)	62%(n=36)

The subjects who were smokers and reported to have the dry mouth were 76% (n=44) and remaining 24% (n=14) subjects were not smokers.

**Table II:-Evaluation of subjects reported of dry mouth associated with smoking**

Dry mouth	No	Yes
Smoking	24%	76%

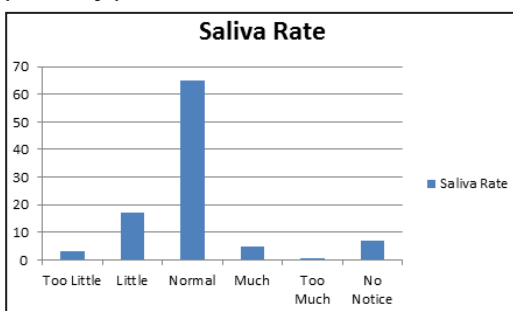
16 subjects were in range of 18-30 years (Group 1), 26 in 31-40 years (Group 2), 20 in 41-50 (Group 3), 25 in 51-60 years (Group 4) and 12 were above 60 years (Group 5). It was noticed that in Group 1:- 19% (n=11), Group 2:- 27% (n=16), Group 3:- 19% (n=11), Group 4:- 24% (n=14) and Group 5:- 10% (n=6) reported to have dry mouth.

**Table III:- Evaluation of subjects with dry mouth among various age groups.**

Dry mouth	Yes
Group 1 (18-30 yrs)	19%
Group 2 (31-40 yrs)	27%
Group 3(41-50 yrs)	19%
Group 4 (51-60 yrs)	24%
Group 5 (>60 yrs)	10%

When subjects were asked to grade their salivary flow, 65% of the subjects reported having normal salivary flow, 20% as reduced or too less whereas remaining 15% increased (Figure 2). A significant number of subjects who were older, had history of systemic diseases, used certain medications, were smokers, assessed the quantity of their saliva as little or too little.

**Graph III:- Evaluation of quantity of salivary flow as reported by patients.**



**DISCUSSION**

In this study the prevalence of dry mouth was assessed among the subjects visiting to the department seeking prosthodontic treatment. In this study 52 were male and 48 were females. In the current study, 58% of subjects reported experiencing various symptoms of xerostomia. Among them, 30% of subjects reported experiencing one symptom, 18% reported experiencing two symptoms whereas 10% reported experiencing three symptoms (Graph II). Three enquired symptoms were 1) Does your mouth feel dry when eating a meal? , 2) Do you sip liquids to aid in swallowing dry foods? and 3) Do you have difficulties in swallowing any food?, the most common symptom reported was sipping liquids to aid in swallowing dry foods.

The subjects were 18 years or older. Many studies have shown with increase in age there is a decrease in salivary flow.<sup>9,10,11</sup> And other authors have showed that there is no correlation with increase in the age and in this study it was seen that there is no relation to age and xerostomia.<sup>12,13</sup> 16 subjects were in range of 18-30 years (Group 1), 26 in 31-40 years (Group 2), 20 in 41-50 (Group 3), 25 in 51-60 years (Group 4) and 12 were above 60 years (Group 5). It was noticed that in Group 1:- 19% (n=11), Group 2:- 27% (n=16), Group 3:- 19% (n=11), Group 4:- 24% (n=14) and Group 5:- (n=6) reported dry mouth.

Symptom of dry mouth was more prevalent among subjects suffering from various systemic diseases and subjects using medications. The most common diseases are diabetes and hypertension. So, the commonly used medications were hypoglycemic and anti-hypertensives. Drugs with anticholinergic action mostly cause reduction in salivary flow. So the patients being treated for psychiatric problems and hypertension usually have a problem of xerostomia. In this study, among subjects who experienced dry mouth 63% (n=37) reported systemic disorders and 62% (n=36) of subjects with dry mouth reported using certain medications, whereas the 37% (n=21) subjects who complaint of dry mouth had no systemic disease and 38% (n=22) subjects who did not use any medications reported of dry mouth. The weather and temperature of the south coastal region of Karnataka is more humid and warm so this could be the one of the reason for the prevalence of dry mouth among the healthy subjects (21%).

The relation of reduced salivary flow and smoking is controversial. In this study it was noticed that the occurrence of xerostomia is high among the smokers. The subjects who were smokers and reported to have the dry mouth were 76% (n=44) and remaining 24% (n=14) were not smokers. It seems the higher prevalence of smoking in men than women as well as higher prevalence of systemic diseases in men than women can cause men to experience more xerostomia symptoms compared with women.

When subjects were asked to grade their salivary flow, 65% of the subjects reported having normal salivary flow, 15% increased and only 20% reported having dry mouth as reduced or too less (Graph III). Though 58% of the subjects showed symptoms of dry mouth only 20% were aware and reported of the problem. So it becomes the responsibility of the dental surgeon to diagnose the prevalent condition of decreased salivary flow and make patient aware of the condition keeping in mind its effect in the treatment outcome.

**CONCLUSION**

- The prevalence of dry mouth is higher in south coastal Karnataka region.
- Systemic diseases, medications and smoking were more prevalent with subjects suffering from dry mouth. There is no correlation between age and symptom of dry mouth among the subjects evaluated.
- Large number of subjects were unaware of existing dry mouth condition.

**ANNEXURE I**

## DEPARTMENT OF PROSTHODONTICS

A B SHETTY MEMORIAL INSTITUTE OF DENTAL SCIENCES, DERALAKATTE SI. No.:

**CONSENT FORM FOR PARTICIPATION IN THE RESEARCH STUDY**

I, Mr./Mrs. \_\_\_\_\_, residing at, \_\_\_\_\_ give my consent to participation in the survey conducted by Dr. \_\_\_\_\_, titled \_\_\_\_\_, being conducted at the department of Prosthodontics, ABSMIDS.

The procedure has been fully explained to me in my mother tongue, and I have been informed by the operator that there is no risk involved in the participation and that the information provided by me would be kept confidential.

I certify that I have fully understood the procedure of the study and that no harm would be caused to me. I also understand that the confidentiality would be maintained and I give my consent to participate in the above said study.

Signature

(Professionals's Name)

Date & Time

**ANNEXURE II**

A survey to assess the prevalence of dry mouth among the patients coming to the department of Prosthodontics from south coastal region

**DETAILS OF THE CANDIDATE:-**

NAME:-

AGE:-

SEX:-

OCCUPATION:-

**QUESTIONNAIRE:-**

- 1) Does your mouth feel dry at night?  
a) Yes      b) No
- 2) Does your mouth feel dry at other times of the day?  
a) Yes      b) No
- 3) Does your mouth feel dry on awakening?  
a) Yes      b) No
- 4) Do you sip liquids to aid in swallowing dry foods?  
a) Yes      b) No
- 5) Does your mouth feel dry when eating a meal?  
a) Yes      b) No
- 6) Do you have difficulties in swallowing any food?  
a) Yes      b) No
- 7) Do you chew gum to relieve your oral dryness?  
a) Yes      b) No
- 8) Do you chew hard candies or mints to relieve the oral dryness?  
a) Yes      b) No
- 9) Does the amount of saliva in your mouth seem to be  
a) too little      b) too much      c) you do not notice it?
- 10) Do you have any systemic diseases?  
a) Yes      b) No
- 11) Do you take any medication?  
a) Yes      b) No
- 12) Do you smoke?  
a) Yes      b) No

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