



Knowledge, Attitude and Practice among Dental Students about the Management of Xerostomia in Complete Denture Patients

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ABSTRACT

Xerostomia is the subjective sensation of dry mouth. It causes severe discomfort to complete denture patients. Absence of saliva in the interface of denture and mucosa causes ulceration in the oral cavity and also failure of retention of dentures. Denture instability and failure of denture retention create lack of confidence in these patients. This questionnaire based survey was carried out among dental students to assess the knowledge, attitude and management of xerostomia in complete denture patients. The questionnaire was sent to 100 dental students who were selected randomly. 78% of the dental students are aware that xerostomia is a common problem faced by complete denture patients. 70% of dental students knew about the causes of xerostomia. 72% of the students are aware that xerostomia can be the cause for denture instability and failure of denture retention. More than two-third of the students are aware of the various treatment options. It is evident from our study that dental students have adequate knowledge about xerostomia in complete denture patients.

Keywords: Xerostomia, complete dentures, denture retention, dental students, salivary stimulants, oral lubricating agents, denture adhesives.

INTRODUCTION

Xerostomia refers to a subjective sensation of dry mouth. It is a common complaint among the elderly people. Approximately 30% of the people aged 65 years and beyond suffer from xerostomia.¹ The elderly are at risk not because of decreased salivary secretion but because of chemical changes in saliva.¹ With aging the amount of ptyalin and mucin in the saliva increases and the saliva becomes thick and viscous. Use of medications and age are significant risk factors for Xerostomia in complete denture patients.² The other causes for xerostomia are autoimmune disease like Sjogren's syndrome,³ radiation therapy, dehydration, chronic mouth breathing, systemic illness like diabetes mellitus⁴, nephritis and thyroid dysfunction. The diagnosis of xerostomia can be made from patient's history, examination of the oral cavity, and by various investigative procedures like sialometry.⁵

Patients wearing complete dentures and suffering from xerostomia often complain of extreme discomfort and pain in wearing dentures.² They may also complain about difficulty in normal functions like eating, speaking, swallowing etc. The other symptoms include cracking at the corners of the mouth, burning sensation of the tongue and alteration of taste. Failure of denture retention and denture instability are also worrying problems in these patients.^{6,7}

Saliva plays an important role in retention and comfort of the removable prosthesis. In denture wearing population the salivary wetting mechanics are necessary to create

adhesion, cohesion and surface tension that helps in the increased retention of the complete dentures.^{6,7} An intimate fit of denture base to supporting tissues and the presence of adequate border seal will provide optimal denture function, provided that saliva is adequate in amount, flow and consistency.⁷

A study by John Wiley and sons reveals that denture wearers are more suspected to dry mouth which leads to oral infection.^{8,9} Absence of saliva in the interface of denture and mucosa can cause inflammation and ulceration of the oral cavity because of lack of lubrication and denture instability.¹⁰ Lack of denture stability and retention can cause social embarrassment to a complete denture patient. Xerostomia can have a significant negative impact on the patient's health and overall quality of life. Hence prompt diagnosis and management of xerostomia in complete denture patients will relieve the psychological stress and anxiety of these patients. The purpose of this article is to assess the knowledge, attitude and management of xerostomia in complete denture patients among the dental students.

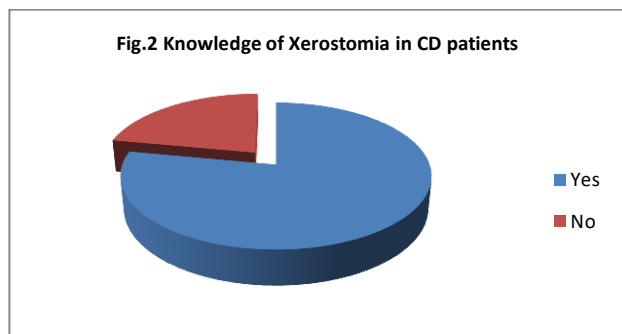
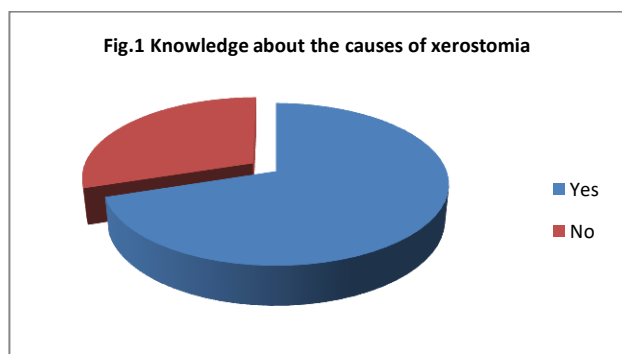
MATERIALS AND METHODS

A questionnaire based survey was conducted among 100 dental college students. The questionnaire was prepared to assess the knowledge, attitude and management of xerostomia in complete denture patients. A questionnaire comprising of 15 multiple choice questions was sent to hundred dental students who were selected randomly. The data obtained was analyzed.



RESULTS

All hundred students responded to the questionnaire based survey. 66% of the respondents were female students and 33% were male students. 54% of the respondents were second year students, 27% were third years and 19% were fourth year students. 70% of the dental students knew about the causes of xerostomia and 78% of the dental students were aware that xerostomia is a common problem faced by complete denture patients (Fig.1&2). There was no significant differences between male and female students regarding the awareness of xerostomia in complete denture patients ($p < 0.1$). There was no statistically significant difference between the second, third and fourth year students regarding the awareness of xerostomia in complete denture patients ($p < 0.1$).



The results of the survey are tabulated. Table 1 shows the knowledge of dental students about the etiology of xerostomia. 54% of the students were aware that xerostomia is more common in females. When asked about the role of medications, 67% of the students responded by saying that medications can cause xerostomia. 74% of the students were aware that diabetes is a risk factor for xerostomia. 54% of the students were aware that thyroid dysfunction can cause xerostomia and 52% of the students were aware that autoimmune disease like Sjogren’s syndrome can cause xerostomia.

Table 2 shows the knowledge among dental students about the signs and symptoms of xerostomia and various tests employed to diagnose xerostomia. 74% of students are aware that xerostomia could cause pain and discomfort in complete denture patients. 78% of students knew that oral infections and mouth sores can be due to xerostomia.

Table 1: Questionnaire regarding the etiology of xerostomia

S. No	Questions	Results in percentage	
		Yes	No
1.	Are you aware that females are more affected by xerostomia?	54	46
2.	Are you aware that certain medications can cause xerostomia?	67	33
3.	Are you aware that diabetes mellitus is a risk factor for xerostomia?	74	26
4.	Are you aware that thyroid dysfunction is a risk factor for xerostomia?	54	46
5.	Are you aware that autoimmune diseases are a risk factor for xerostomia?	52	48

About 72% of the students are aware that xerostomia can be the cause for denture instability and failure of denture retention. 55% of dental students are also aware of the various tests to diagnose xerostomia.

Table 2: Questionnaire regarding the signs and symptoms of xerostomia

Questions	Results in percentage	
	Yes	No
Xerostomia causes extreme discomfort in CD patients.	74	26
Are you aware that oral infections like candidiasis and mouth sores in CD patients due to xerostomia?	78	22
Are you aware that dental retention and dental instability in CD patients may be due to xerostomia?	72	28
Are you aware of the various tests to diagnose xerostomia?	55	45

Table 3 shows the knowledge of the dental students in managing xerostomia in complete denture patients. 75% of dental students would ask the patients to increase their water intake by frequent sipping of water. 73% of dental students responded by saying that they would advice change in dietary habits like avoiding dry and hard food, avoiding spicy food, avoiding caffeinated drink and alcoholic beverages. 70% of the students knew about the role of oral lubricants and salivary substitutes. 75% of the students knew about the role of salivary stimulants. Only 64% of the students knew about the role of denture adhesives in managing xerostomia in complete denture wearers. More than two thirds of the students were

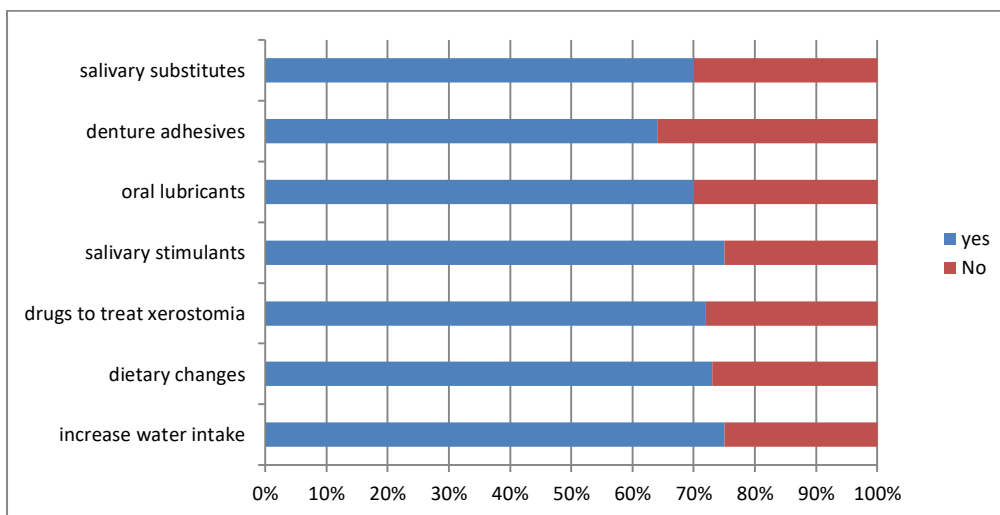


aware of the various preventive measures and the various complete denture patients (Fig.3).
treatment options available to treat xerostomia in

Table 3: Questionnaire regarding the management of xerostomia

S.No	Questions	Results in percentage	
		Yes	No
1.	Will you advice the patients with xerostomia to increase the water intake?	75	25
2.	Will you advice change in dietary habits?	73	27
3.	Do you know about the role of drugs in treatment of xerostomia	72	28
4.	Do you know about the role of salivary stimulants?	75	25
	Do you know about the role of oral lubricants?		
5.	Are you aware of the role of denture adhesives in managing xerostomia in CD patients?	70	30
6.	Role of salivary substitutes?	64	36
7.		70	30

Figure 3: Knowledge regarding the management of xerostomia



DISCUSSION

Xerostomia is a common problem affecting complete denture patients. Though being a common problem it is often overlooked by many dentists.¹⁰ Hence this study aims to assess the knowledge, attitude and management of xerostomia in complete denture patients among dental students. In this survey, more than two third of dental students were aware that xerostomia is a common problem faced by complete denture patients. Xerostomia has multi factorial etiology. 70% of dental students knew about the various causes of xerostomia. One of the major risk factors for xerostomia is the use of certain medications. More than 500 drugs are known to cause oral dryness.¹⁰ Xerogenic medications associated with hypo salivation are antidepressants, antipsychotics, oral

antidiabetics, antihypertensive such as thiazides, beta blockers, calcium channel blockers, antihistamines, anticholinergic drugs, glucosamine and non-steroidal anti-inflammatory drugs.^{11,12} About 67% of the students knew that medications are an important cause of xerostomia. The aim of the management is to reduce the patients symptoms and to increase the salivary flow. A variety of treatment options are available and the dentists can decide the treatment option taking into consideration the cause for xerostomia and with the aim to provide optimal symptomatic relief to the patient.² Often a combination of therapy may be required. Adequate patient hydration must be ensured, with the ingestion of at least two liters of liquid daily. It is also important to avoid irritants such as coffee, alcohol or tobacco smoking. Sugar free chewing



gum, candies and mints can be used for stimulation of saliva. Pilocarpine hydrochloride and Cevimeline hydrochloride are commonly used drugs for salivary stimulation and produce clinically significant increase in salivary flow in xerostomic patients. These drugs are contraindicated in patients with uncontrolled asthma, narrow angle glaucoma or iritis. Varieties of salivary substitutes are available and are effective in decreasing oral dryness. They are useful for patients in whom saliva cannot be stimulated. Dentures adhesives can be used to augment retention in Xerostomic patients.¹³ In addition to improved retention and stability, use of a well hydrated denture adhesive provides cushioning and lubricating effect. Retention is the resistance of denture to removal in a direction opposite to that of insertion. Retention of complete denture depends on the various factors such as adhesion, cohesion, interfacial surface tension and saliva plays an important role for these factors to be effective. This has to be taken into account while rehabilitating an edentulous patient with xerostomia.¹⁴ Denture adhesives are pastes, powders or adhesive pads that may be placed on dentures to help them stay in place. Denture adhesives that are commercially available are nontoxic, soluble materials that when applied to the tissue surface of dentures enhance their retention, stability and performance. More than 70% of the students responded that they would ask the patients to increase their water intake and also advise about changes in dietary habits to bring some symptomatic relief. More than two-third of the students are aware of the role of oral lubricants, salivary stimulants, salivary substitutes, drugs and denture adhesives in the management of xerostomia.

CONCLUSION

It is evident from our study that dental students have adequate knowledge about xerostomia in complete denture patients. The life span of human beings is on the rise. It is predicted that the elderly population of India shall be the highest in the world by 2025.¹⁵ With increasing elderly population, complete denture patients are increasing. Xerostomia in such patients is a devastating problem and if not managed properly will cause anxiety and depression in these elderly patients. Dental students should be taught about xerostomia and should have clinical exposure during undergraduate training to help them become confident in managing complete denture patients with xerostomia.

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