

# Knowledge, Attitude and Practice on Hyposalivation in Complete Denture Patients Among Dental Interns in Chennai, India.

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## Abstract

**Background:** Oral cavity supports the growth of various microorganisms due to the moist condition that it offers. Dentures being a foreign substance aid in increasing the microbial growth. This in turn will decrease the overall health of the oral cavity. Hence there comes a need to assess knowledge, attitude and practice on hyposalivation in complete denture patients among dental interns in Chennai, India.

**Aim:** The aim of this study is to find out current knowledge, attitude and practice on hyposalivation in complete denture patients among dental interns in Chennai, India.

**Materials And Methods:** This research is a survey based study in Chennai. Questionnaire consisting of 15 questions are given through online communication system (Whatsapp Apps) with attached link to the online questionnaire that had been prepared earlier (<http://app.surveypplanet.com>). 91 dental interns from 4 dental institutions in Chennai which are took part in this survey.

**Results:** Based on this study, dental intern knowledge on hyposalivation is in minimum scale. They practice a good skills with certain capabilities in management of hyposalivation in complete denture patients. They show high awareness on this pathology based on their knowledge and attitude on treatment and practicing a good manner toward the patients. This is due to their early exposure to clinical treatment in clinic since third year of studies.

**Conclusion:** Dental intern seem to know a lot about the management of patients, treatment need to be done to patients, any drugs used and certain effect of the pathology. The dental intern knowledge, attitude and practice on the hyposalivation in complete denture patients are in a good range.

**Key words:** Knowledge; attitude; practice; Hyposalivation; interns; Chennai

## INTRODUCTION

Hyposalivation or reduced salivary flow during the application of complete denture by edentulous patients are common problem faced.<sup>1</sup> It also known to be insufficient or lower saliva production and formation.<sup>2</sup> It can be divided into several stages, such as short lived or acute and persist for longer time periods or known as chronic hyposalivation. The hyposalivation occur in complete denture when there is defect in salivary glands which do not produce or secrete enough saliva in oral cavity due certain circumstances.<sup>3</sup>

Production of saliva is assisted by three type of glands which are sublingual, submandibular and parotid.<sup>4</sup> There are also some tiny glands or microglands and mucus cells producing the saliva in oral cavity. A slight reduction of saliva due to the complete denture may cause a problem and needed for the treatment.<sup>5</sup>

Saliva lacking in the interface of denture and mucosa might cause sores of denture due to the reduction of lubrication and retention of denture.<sup>6</sup> Absent in denture stability and retention can cause social embarrassment to a patient when dislodgment of denture occur during the use.<sup>7</sup> Therefore the hyposalivation will contribute to the psychology effect of the patient.<sup>2,8</sup>

The optimal salivary flow, consistency and correct composition are very important in the completely edentulous patients that wear the complete denture. It is very important and critical that prosthodontist to give much attention to these characteristics and problem on the fabrication of complete denture.<sup>9</sup>

Therefore, the information on knowledge, attitude and practice among dental interns are needed to determine in which stage of understanding of this pathology they are having in current situation.

## MATERIALS AND METHODS

Questionnaire consisting of 15 questions (Table 1) are given through online communication system (Whatsapp Apps) with attached link to the online questionnaire that had been prepared earlier (<http://app.surveypplanet.com>). 91 students from 4 dental institutions in Chennai took part in this survey. Dental students from Saveetha Dental College, Meenakshi Ammal Dental College, Sri Ramachandra Dental College and Ragas Dental College.

## RESULTS

The specific sample study on dental interns are good reflection in terms of knowledge, attitudes and practices on hyposalivation in complete denture patients. In this current study, a total of 91 dental interns from 4 dental institutions were included in this study ageing from ranged of 23 to 26 years. In this current study, all intern claimed that they have heard about hyposalivation problem in patients that wear complete denture before this. This is due to their early exposure to clinical treatment in clinic since third year of studies. (Graph 1) Majority of interns thought that male (82.4%) might have hyposalivation most when wearing a complete denture compared to female (17.6%). (Graph 2)

**Table 1: Questionnaire for Awareness on Musculoskeletal disorder among dental students in Chennai**

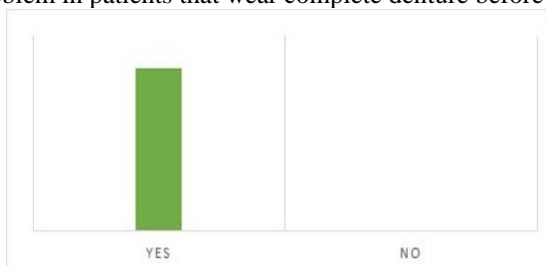
1	Have you ever heard about hyposalivation problem in patients that wear complete denture before this? A) Yes B) No
2	Which gender do you think that might having hyposalivation most when wearing a complete denture? A) Male B) Female
3	Which type of complete denture patients do you think that commonly having hyposalivation problem? A) During use of complete denture B) )After use of complete denture
4	Do you think all complete denture patients having hyposalivation problem? A) Yes B) No
5	Do you know about etiology of hyposalivation in complete denture patients? A) Yes B) No
6	Which of following do you think might be causes for hyposalivation in complete denture patients? A) Less water consume b) Due to the medication effect taken by patients C) due to the autoimmune problem D) due to the iatrogenic effect
7	When you treated patients with complete denture in clinic, do you check or ask on hyposalivation symptoms? A) Yes B) No C) Sometimes
8	Do you know any diseases that constitute with hyposalivation? A) Yes B) No
9	Do you think hyposalivation can be cure with some medication or treatment? A) Yes B) No
10	Do you know about any test needed to diagnose hyposalivation? A) Yes B) No
11	Do you know any drugs that can be used as treatment for hyposalivation in complete denture patients? A) Yes B) No
12	Which drugs do you think can be used in treatment of hyposalivation in complete denture patients? A) motrin B) Tigan C) cevimeline D) Pilocarpine
13	Are you aware of surgical treatment for hyposalivation in complete denture patients? A) Yes B) No
14	Are you aware of using Chlorhexidine (CHX) gel in treating difficulty in speech for patients that have hyposalivation when wearing a complete denture? A) Yes B) No
15	Do you think bacterial infection can occur to patients due to hyposalivation when they wear a complete denture? A) Yes B) No

**Table 2: Managements of hyposalivation in complete denture patient**

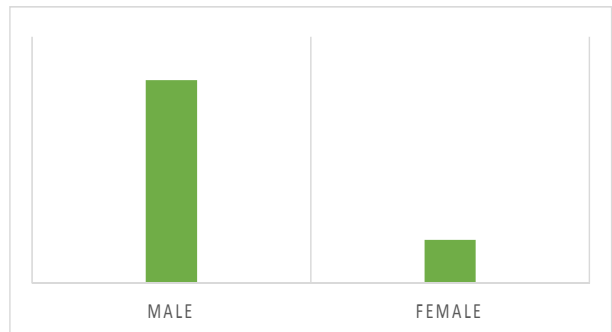
<b>Symtoms of hyposalivation</b>	<b>Management of patients</b>
Mouth drying	Saliva substitutes <sup>4</sup>
Speech difficulty	Uses of mouth rinse or Chlorhexidine (CHX) gel
Swallow difficulty <sup>1</sup>	Avoid sugary foods
Taste sensation	Suck chips of ice
Oral infections	Prescribe as appropriate by specialist

They also think that patients having a hyposalivation problem most during use of complete denture (95.60%) and only 4.4% think that patients having this kind of problem after use of complete denture.(Graph 3) Their answers might be from previous experiences on treating the edentulous patients with complete denture during clinical hours. 76.90% of intern respondents think that all complete denture patients will have hyposalivation problem and only 23.10% think that not all complete denture patients having this kind of problem.(Graph 4) In this study, basic understanding and knowledge on hyposalivation in complete denture are asked. There are only 34% of dental interns know about etiology of hyposalivation in complete denture patients.(Graph 5) They also think that consuming less water is the most significant cause for hyposalivation in complete denture patients with 78%.(Graph 6)On the other hands, 98.90% of interns claimed that they asked or checked whether their patients with complete denture were having any hyposalivation symptoms.(Graph 7) This is a good practice among intern in their work. They also claimed that they know about any diseases that might constitute with hyposalivation (95.60%).(Graph 8) Obviously their feedback were positive when were asked about medication or treatment available for curing the hyposalivation with 100% said yes.(Graph 9) They also know about the test needed to diagnose hyposalivation (80.2%). Only 19.8% said that they did not know about any test.(Graph 10) Later, interns were asked on the treatment of hyposalivation in complete denture patients. 97.8% or majority of interns claimed that they know any drugs that can be used as treatment for hyposalivation in complete denture patients. (Graph 11) 75.8% said that Pilocarpine is a drug commonly used to treat hyposalivation in patients.(Graph 12) However, more percentage of interns said that they were not aware of uses of Chlorhexidine (CHX) gel in treating difficulty in speech for patients that have hyposalivation when wearing a complete denture, which is 54.9%.(Graph 14) They also claimed that they were aware of surgical treatment for hyposalivation in complete denture patients (77%).(Graph 13)98.9% interns or majority of respondents think that bacterial infection can occur to patients due to hyposalivation when they wear a complete denture. (Graph 15) Based on this study, dental intern knowledge on hyposalivation is in minimum scale. They practice a good skills with certain capabilities in management of hyposalivation in complete denture patients. They show high awareness on this pathology based on their knowledge and attitude on treatment and practicing a good manner toward the patients.

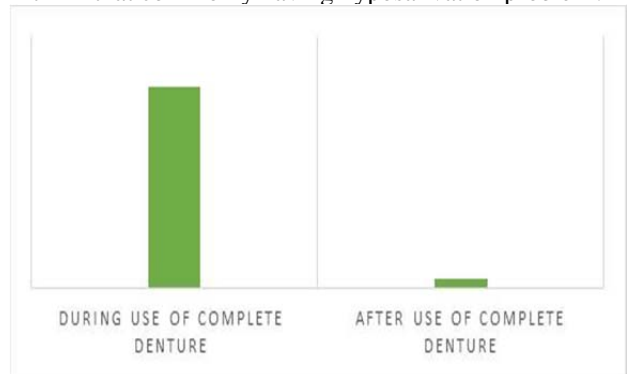
**Graph 1:** Have you ever heard about hyposalivation problem in patients that wear complete denture before this



**Graph 2:** Which gender do you think that might having hyposalivation most when wearing a complete denture



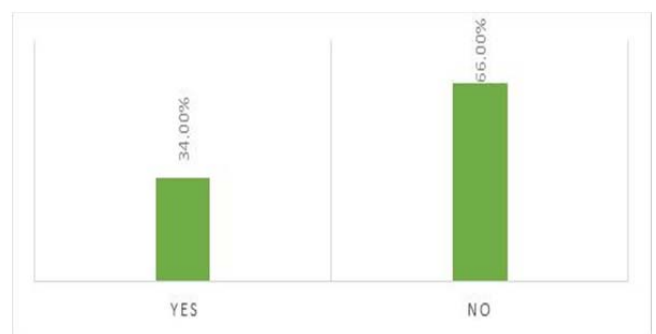
**Graph 3:** Which type of complete denture patients do you think that commonly having hyposalivation problem?



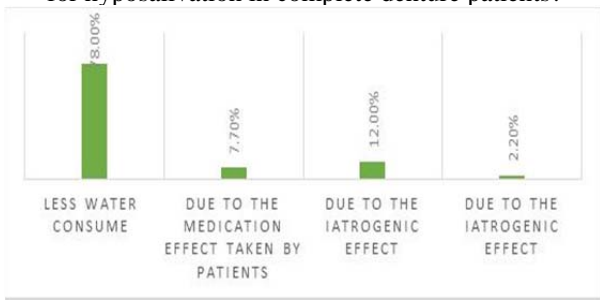
**Graph 4:** Do you think all complete denture patients having hyposalivation problem?



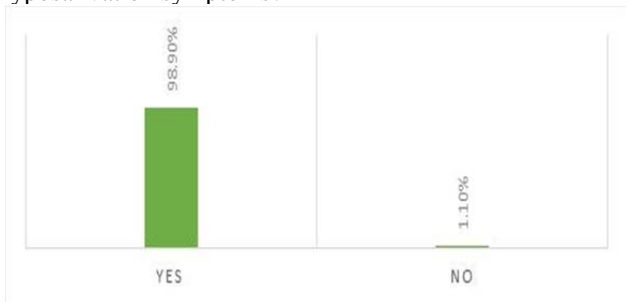
**Graph 5:** Do you know about etiology of hyposalivation in complete denture patients?



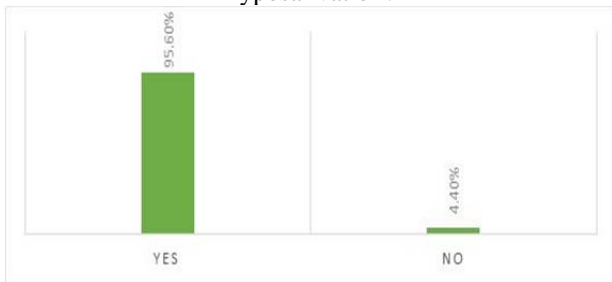
**Graph 6:** Which of following do you think might be causes for hyposalivation in complete denture patients?



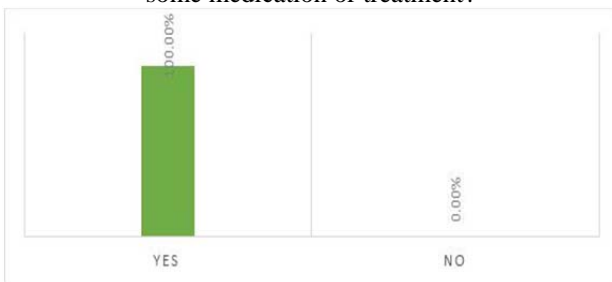
**Graph 7:** When you treated patients with complete denture in clinic, do you check or ask on hyposalivation symptoms?



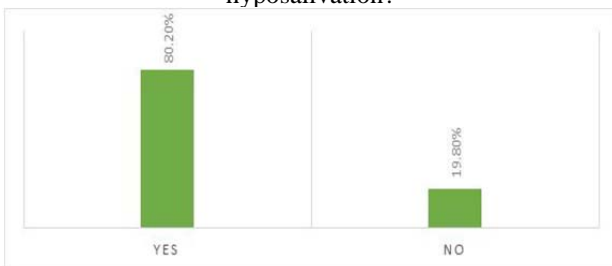
**Graph 8:** Do you know any diseases that constitute with hyposalivation?



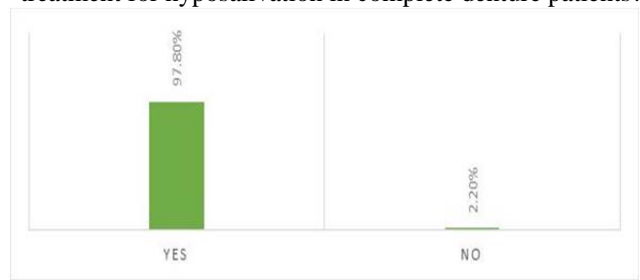
**Graph 9:** Do you think hyposalivation can be cure with some medication or treatment?



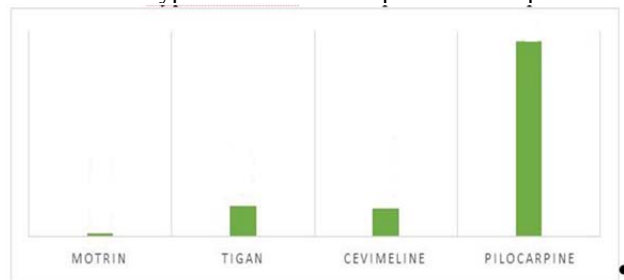
**Graph 10:** Do you know about any test needed to diagnose hyposalivation?



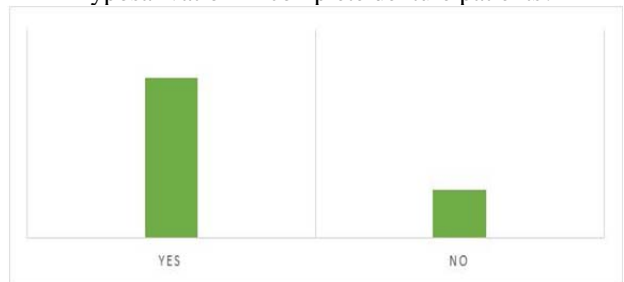
**Graph 11:** Do you know any drugs that can be used as treatment for hyposalivation in complete denture patients?



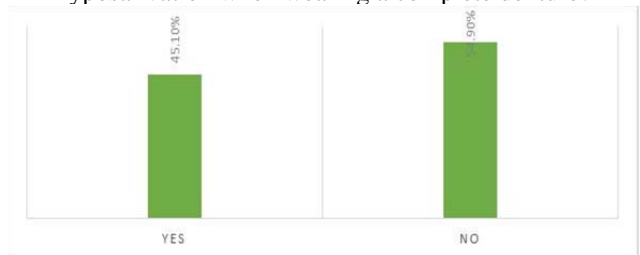
**Graph 12:** Which drugs do you think can be used in treatment of hyposalivation in complete denture patients?



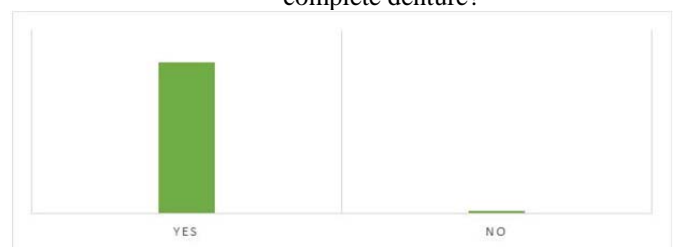
**Graph 13:** Are you aware of surgical treatment for hyposalivation in complete denture patients?



**Graph 14:** Are you aware of using Chlorhexidine (CHX) gel in treating difficulty in speech for patients that have hyposalivation when wearing a complete denture?



**Graph 15:** Do you think bacterial infection can occur to patients due to hyposalivation when they wear a complete denture?



## DISCUSSION

Saliva is an important component that have role in retention and patients' comfort when they wear removable prosthesis of complete denture. The salivary wetting mechanics in complete denture are necessary in order to create adhesion, cohesion and surface tension which increased complete denture retention. The bond which created by saliva between the epithelium of oral mucosal and the denture base is called as adhesion. Meanwhile the bonding between saliva components which leads to greater prostheses retention is known as cohesion. The ability of denture to resist separation from tissues called as surface tension and closely related to prosthesis fitting. Optimal denture function will provided by denture bases intimate fit to supporting tissues and adequate border seals presence, which provided that saliva is adequate in amount, flow and consistency. The formation of vacuum pressure on the denture seating which will lead to the retention of denture and the patients' satisfaction with the prosthesis are originated from the adequate amount of saliva. Depending on various causes of hyposalivation, a variety of treatment options is available to the dental practitioner.<sup>10</sup> In medication of hyposalivation in complete denture patients, dental practitioner will discuss the timing, dosage or a change in the medication may reduce the severity of the disease.<sup>11</sup> Alternatively, gustatory stimulation of the salivary glands by mastication of the sugar free chewing gums or lozenges is helpful.<sup>12</sup> In severe hyposalivation cases, saliva substitutes or salivary stimulants may be used. Soft denture liners can also be used to minimize patient discomfort.<sup>13</sup> Often a combination of treatment may be required (Table 2). Depending on the etiology of the hyposalivation, various treatment options are available as mentioned above. However, often the combinations of one or more methods are employed to make the prosthesis successful.<sup>12</sup> The goal in the management of hyposalivation is to reduce the suffering from the disease and to make the wearing of the dentures and performing normal oral functions comfortable to the patients.<sup>14</sup> At the same time optimizing the retention and prosthesis stability need to take into a consideration. Denture adhesives can be used to increase the retention of complete denture.<sup>15,16</sup>

In complete denture patients with extreme hyposalivation problem, the substances or materials that can substitutes of salivary function can be used. This including the artificial saliva, which humidifies the oral cavity, particularly protecting it from irritative mechanical or chemical factors and infections. This type of aqueous solutions may contain glycoproteins or mucins, and salivary enzymes such as asperoxidase, glucose oxidase or lysozyme. The soft tissues are protected by polymers such as carboxymethyl cellulose or ions such as calcium and phosphates in order to protect the hard teeth structures. Based on current study, dental intern seem to know a lot about the management of patients, treatment need to be done to patients, any drugs used and certain effect of the pathology. This is due to their exposure to the treatment planning starting from their third

year of dental study in college. Their wide exposure and experience in clinical work give them huge benefits in knowledge, attitude and practice in hyposalivation problem in complete denture patients.

## CONCLUSION

Hyposalivation or reduced salivary flow during the application of complete denture by edentulous patients are common problem faced. It also known to be insufficient or lower saliva production and formation. Depending on the etiology of the hyposalivation, various treatment options are available as mentioned. Dental intern seem to know a lot about the management of patients, treatment need to be done to patients, any drugs used and certain effect of the pathology. The dental intern knowledge, attitude and practice on the hyposalivation in complete denture patients are in a good range.

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