



## KNOWLEDGE, ATTITUDE AND PRACTICE OF DENTURE ADHESIVE USE AMONG PRIVATE DENTAL PRACTITIONERS OF KANCHIPURAM CITY, TAMILNADU : A CROSS SECTIONAL SURVEY

### Dental Science

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### ABSTRACT

Denture adhesive may act as adjuvant to increase the retention and stability of the denture thus increasing patient comfort and improved fit of the denture. However denture adhesive should not be used as a method to provide retention in ill fitting denture. Many consider the use of denture adhesive as a lack of expertise in clinical and prosthetic skills. Thus the use of denture adhesive is a conflicted issue in both dental education and clinical practice. These contradictory views created doubts among the practicing dentists regarding the use of denture adhesive in their regular clinical practice. The aim of this study was to assess the knowledge, attitudes and practices of Denture Adhesive use among private dental practitioners' of Kanchipuram City, Tamilnadu. A total of 163 private dental practitioners were surveyed. This was a descriptive, cross-sectional survey conducted with the help of self-administered questionnaire.

### KEYWORDS:

Denture adhesive, Knowledge Attitude Questionnaire.

### INTRODUCTION

A primary goal of prosthodontic treatment is to restore masticatory function<sup>1</sup>. Along with it, improving denture retention and stability has always been a major challenge in prosthodontics<sup>2</sup>. Technical excellence during the fabrication of prosthesis and the effective management of patient are the two important features for a successful complete denture therapy. It is difficult even for the most experienced dental practitioner to satisfy the patients' expectation for retention and stability of the denture and so it is considered appropriate to describe about denture adhesives<sup>3</sup>.

Denture adhesive can act as adjuvant to increase the retention, stability and support of dentures. Denture adhesives swell up on absorbing saliva and create a strong hold between dentures and the underlying tissues<sup>4</sup>. Denture adhesives may also give psychological confidence for the patient<sup>5</sup> as it supplements retention and stability especially during occasions of public interaction. However, denture adhesives should not be used as a method to improve retention in an improperly fabricated ill-fitting denture, and under any circumstances excessive denture adhesive should not be indicated. Standardized guidelines are needed for the application, use and removal of denture adhesives<sup>5</sup>.

Denture adhesive usage in complete denture is justified when it is not possible to obtain sufficient stability and retention, or when surgical procedures as implant or ridge augmentation is not possible for patient due to age<sup>6</sup>, socioeconomic status and systemic conditions<sup>7</sup>.

Denture adhesives were initially formulated by mixing vegetables. The mucilaginous substratum formed when the absorbed saliva stuck to the tissues and to the prosthesis<sup>8</sup>. Later denture adhesives have been introduced with different composition with the aim of establishing viscosity and adhesiveness by absorbing water and improve retentiveness of removable prosthesis. These have been found to be advantageous to a significant proportion of patients<sup>3, 9-10</sup> and patients are more comfortable chewing with denture adhesives than without<sup>11-13</sup>.

Hence, the aim of study is to assess knowledge, attitude and practice of denture adhesive among private dental practitioners of Kanchipuram, Tamil Nadu.

### MATERIALS AND METHODS

This descriptive, cross-sectional survey was conducted using a self-administered questionnaire that involved private dental practitioners of Kanchipuram. A sample of 163 private dental practitioners in Kanchipuram covering all the zones – North, South, East & West, were personally approached and requested to complete a comprehensive closed-ended, self-administered questionnaire.

The participants were asked not to reveal their identity. The questionnaire included 18 items, each of them had 3 options to choose from [YES, NO & DON'T KNOW], while the options for attitude were based on a 5-point Likert scale<sup>15</sup>, it requires the dentist to make a decision on their level of agreement along the scale [Strongly Disagree, Disagree, Don't know, Agree & Strongly Agree].

The subjects were divided into different groups namely; age group, gender, qualification and duration of clinical practice.

### RESULTS

The socio demographic characteristics of the subjects are shown in Table 1. Majority of the dentists were males (60%), preponderance (62%) of the dentists were in the 21-30 years age group. Greater part of the study population comprised of dental practitioners of other specialties (58%).

**Table 1: Socio-demographic characteristics of the study subjects**

Variables	Percentage Of Study Subjects
<b>Age group</b>	
21-30 years	62%
31-40 years	27%
41-50 years	10%
>50 years	0%
<b>Gender</b>	
Male	60%
Female	40%
<b>Qualification</b>	
General practitioners	37%
Prosthodontist	5%

Other specialist	58%
<b>Year of clinical experience</b>	
1-10 years	83%
11-20 years	15%
>20 years	1%

Table 2: shows the response of the subjects' knowledge on denture adhesive use in denture therapy. When the subjects were questioned if denture adhesive were soluble in saliva, 34% of the dental practitioners replied wrongly. Similarly, 18% of the dental practitioners didn't know that using denture adhesive with incomplete removal of old denture adhesive affected tissue health. 63% of dental practitioners agree to the fact that improper use of denture adhesives cause denture stomatitis .60% of dental practitioners consider prolonged use of denture adhesives with ill-fitting dentures cause residual ridge resorption and 25% has no knowledge about it. Zinc containing denture adhesives were recently held responsible for causing neurological diseases on their prolonged usage.57% of the dental practitioners were unaware in this context.

**Table 2: Subjects' knowledge on denture adhesive use in denture therapy**

Questions	Yes	No	Don't know
<b>Are denture adhesives soluble in saliva?</b>	<b>42%</b>	<b>24%</b>	<b>34%</b>
General practitioners	9%	12%	18%
Prosthodontists	19%	2%	1%
Other specialists	14%	10%	15%
<b>Does the use of dentures with incompletely removed old denture adhesives affect tissue health?</b>	<b>74%</b>	<b>7%</b>	<b>18%</b>
General practitioners	14%	4%	9%
Prosthodontists	45%	0%	1%
Other specialists	15%	3%	8%
<b>Can improper use of denture adhesives cause denture stomatitis?</b>	<b>63%</b>	<b>7%</b>	<b>18%</b>
General practitioners	7%	3%	9%
Prosthodontists	41%	0%	2%
Other specialists	15%	4%	7%
<b>Can prolonged use of denture adhesives with ill-fitting dentures cause residual ridge resorption?</b>	<b>60%</b>	<b>15%</b>	<b>25%</b>
General practitioners	21%	9%	15%
Prosthodontists	42%	1%	2%
Other specialists	17%	5%	8%
<b>Can excessive use of zinc containing denture adhesives cause neurological disease?</b>	<b>28%</b>	<b>16%</b>	<b>57%</b>
General practitioners	7%	5%	29%
Prosthodontists	18%	2%	9%
Other specialists	3%	9%	19%

Table 3 shows the dentists attitude regarding denture adhesive from different points of view. Denture adhesive was considered to improve retention in improperly fabricated dentures according to 15% of General practitioners (GDPs) and 28 % of other specialists. 15% GDPs ,5% of prosthodontist ,47% of other specialists strongly believe that patients with poor oral hygiene maintenance should not use denture adhesives. 13% GDPs ,1% of prosthodontist ,26% of other specialists consider prescribing denture adhesive indicates inadequate skills of the clinician to fabricate denture .3% GDPs ,11% of other specialists believe more the amount of the denture adhesive used better is the retention of the denture. Successful treatment combines exemplary technique, effective patient rapport, proper knowledge and education.

**Table 3: Subjects' attitudes related to the use of denture adhesives .**

Questions	Strongly Agree/Agree	Don't know	Strongly Disagree/Disagree
<b>Denture adhesive is used to provide retention to improperly fabricated or ill-fitting prosthesis</b>			

General practitioners (GDPs)	15%	1%	19%
Prosthodontists	0%	1%	4%
Other specialists	28%	4%	29%
<b>Patients with poor oral hygiene maintenance should not use denture adhesives</b>			
General practitioners	15%	7%	12%
Prosthodontists	5%	0%	0%
Other specialists	47%	5%	7%
<b>Prescribing denture adhesive indicates inadequate skills of the clinician to fabricate denture</b>			
General practitioners	13%	20%	20%
Prosthodontists	1%	1%	2%
Other specialists	26%	13%	21%
<b>More the amount of the denture adhesive used better is the retention of the denture</b>			
General practitioners	3%	5%	27%
Prosthodontists	0%	0%	5%
Other specialists	11%	7%	40%

**Discussion:**

A comment often made by patients who have problems with their natural dentition is, “take them all out and give me dentures” so that I will not have any more dental problems. Often denture patients rather than seeking professional help to evaluate oral changes affecting denture function, will turn to some type of denture adhesive to achieve the desired function and comfort.<sup>16</sup>

According to Zarb and Boucher, there are several factors responsible for retention of complete dentures that include adhesion, cohesion, interfacial surface tension, capillary action, atmospheric pressure& facial musculature. These factors along with proper fabrication of complete denture contribute to retain the prosthesis. Denture adhesives act as an adjuvant to increase denture retention and stability. Various research studies suggest that its use significantly reduces displacement of maxillary and mandibular dentures during chewing, biting and speaking<sup>17-20</sup>.

This cross-sectional survey gathers the knowledge about denture adhesive among private dental practitioners<sup>3</sup>. The result showed that 25% of private dental practitioners were unaware that denture adhesive was soluble in saliva, whereas 18% were unaware that incomplete removal of denture adhesive affected the oral tissue, causing imbalance in oral flora by influencing it.

15% ignored the fact that prolonged use of denture adhesive in an ill-fitting denture might cause Residual Ridge Resorption (RRR). On the other hand, many reports have come to attention about Zinc containing denture adhesive cause potential neurotoxicity when used excessively. Natiens et al & Hedera et al identified that neurological diseases can be caused due to misuse of Zinc containing denture adhesive. When asked whether denture adhesive is used to provide retention incase of improperly fabricated dentures, 15% of general dental practitioners and 28% of the other dental specialties agreed to this statement, whereas none of the prosthodontist did. Therefore, periodical evaluation for RRR, changes in the vertical dimension, integrity of the denture base, phonetics and other biological reason must be done in denture wearers. Periodic cleaning of denture using ultrasonic cleanser by the dentist can minimize Biofilm accumulation.

**Conclusion:**

In conclusion, it is important to learn about a denture adhesive and its properties before prescribing it in order to dictate what a patient can expect with the use of this adhesive and to which patient to prescribe it to.

Our survey concluded that denture adhesives were widely used by dentist, unfortunately they do not possess sufficient knowledge about the material. Therefore, it is advised that the dental practitioners update their knowledge, since the knowledge of the patients will always depend on the knowledge of the dentist and how well they educate their patients<sup>16</sup>.

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