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Knowledge, Attitudes and Practice of Dentists Toward Denture Adhesives - A Questionnaire Study

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Abstract: ***Statement of problem: Dental professionals' knowledge, attitudes and practice toward denture adhesives require further investigation. Purpose: The purpose of this survey was to evaluate the knowledge, attitude and practices of dentists in India toward denture adhesive. Material and methods: The questionnaire contains 20 questions regarding knowledge, attitude and practices towards denture adhesives and was supplied online. Informed consent was obtained before the survey. Data collected and statistically analysed using SPSS version 21. Results: The response rate was 48 % for dentists without speciality training (n=61) and 50% for dentists with speciality training (n = 64), with a total of 98.4%. Results of the survey showed 50% of participants agreed with the statements in the questionnaire and the rest 50 % of participants has the opinion disagree, strongly disagree and strongly agree. Statistical analysis by person correlation shows statically significant results by comparing experience with variables. Conclusion: dentists with speciality training have more knowledge, attitude and practices towards denture adhesives than those without speciality training.***

Keywords: denture adhesive, dentist, speciality training, knowledge, attitude

1. Introduction

Many people who wear dentures utilize commercially available denture adhesives as an over - the - counter method to enhance denture retention and stability. Short - and long - acting synthetic polymers are combined in the formulation of denture adhesives, which hydrate and expand in volume to fill spaces between the denture and mucosal tissues. Additionally, the hydrated adhesive's enhanced viscosity aids in optimizing the interfacial forces that support denture retention. The long - acting polymers improve cohesive forces within the adhesive through molecular cross - linking, increasing the strength of the adhesive film and extending resistance to washout from under the denture.[1]

It enhances the retention, stability, masticatory performance, occlusal force, sealing out of food particles, and overall function of dentures. In addition, Denture adhesives seem to improve oral health - related quality of life of patients with edentulism[2]

Concerning the usage of denture adhesives, there is conflict among dental practitioners. The conflicting viewpoints among dental professionals can be described as the traditional historical and the advocate approaches[3]. According to the traditional historical position, the use of Denture adhesives equates with poor clinical skills and a lack of prosthetic expertise, whereas the advocate viewpoint considers that adhesives can facilitate fabrication and post - insertion phases in denture prosthesis services[4]

Based on this diversity in dental professionals' attitudes, viewpoints, knowledge, and practices about Denture adhesives, the topic remains unclear despite the current scientific evidence and needs further investigation. Therefore, the purpose of this survey was to assess via a questionnaire the attitudes toward DA use among dentists in India and their possible association's speciality training and awareness to enable better - quality prosthodontic patient treatment in the future, the knowledge will be incorporated in future curricula.

2. Materials and Methods

A Questionnaire survey was conducted among dentists with or without speciality training in India. A study was conducted to evaluate dentists' knowledge, attitude and practices towards denture adhesives with or without speciality training. Participants are selected under certain inclusion and exclusion criteria. Inclusion criteria include the participant must be aDentist, Specialist, Postgraduate in prosthodontics, Participant currently working in India, Participant currently pursuing post - graduation in prosthodontics from India. Exclusion criteria were participants belonging to Undergraduates, Postgraduates other than prosthodontics, Dentists from abroad, and Postgraduates pursuing PGs outside India. The content of the questionnaire was validated by prosthodontists and public health dentists. The reliability was checked for 7 samples using Cronbach's alpha. The value was 0.758. so it is considered to be reliable. The questionnaire was supplied through an online platform. Informed consent was obtained from them before the survey. The Google form questionnaire contains 20 questions regarding knowledge, attitude and practices towards denture adhesives (table 1). All data were collected and statistically analysed using SPSS version 21.

Table 1: Questionnaire for evaluating knowledge, attitude and practice

Section 1: Socio - demographic information	
1) Education	○ Bachelor of dental surgery ○ Masters of dental surgery
2) Current status	○ Dentist ○ Specialist ○ Postgraduate
3) Experience	○ Student ○ < 5 years ○ 5 - 10 years

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	○ > 10 years
Section 2: Knowledge	
a) In your clinical opinion, denture adhesives can contribute to the development of the following conditions:	
4) Oral cancer	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
5) Denture stomatitis	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
6) Leukoplakia	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
7) Candidiasis	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
8) An imbalance in the oral flora due to microbial contamination	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
9) Resorption of the alveolar bone as a result of tissue irritation	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
Section 3: Attitude	
b) Denture adhesives have the potential (either positive or negative) to influence the following	
10) Enhancing the fit of the prosthesis (ie, the retention and stability)	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
11) Providing psychological comfort to the denture patient	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
12) Masking underlying denture problems	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
13) Being related to poor clinical skills and a lack of prosthodontic practice	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
14) patients can use denture adhesives for a lifetime	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
15) Can prescribe denture adhesive to every new denture wears	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
Section 4: Practice	
c) Denture adhesives can be useful for the following clinical situations:	
16) To stabilize trial bases in the early stages of denture fabrication (ie, while recording centric and vertical relations)	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
17) To relieve the patient's fears about the possibility of insufficient retention of the final prosthesis at the try - in visit	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
18) To augment retention, comfort, and function during the interim period after the insertion of immediate dentures	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
19) To provide additional retention and stability for patients who have inadequate oral anatomy	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree
20) To help patient acceptance of new dentures	○ Strongly agree ○ Agree ○ Disagree ○ Strongly disagree

3. Results

Out of the 127 questionnaires distributed, 126 were answered. The response rate was 48 % for dentists without speciality training (n=61) and 50% for dentists with speciality training (n = 64), with a total of 98.4%. Table 2 shows the distribution of the variable in frequency and percentage.

Table 2: Distribution of participants with or without speciality

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor in dental surgery	61	48	48.8	48.8
	Masters of dental surgery	64	50.4	51.2	100
	Total	125	98.4	100	
Missing	System	2	1.6		
Total		127	100		

Of the total number of participants, 45 % were dentists working without speciality, 22% were postgraduate students and 30% were specialists (fig 1). In this survey 30% of participants were students pursuing speciality training, 35 % of participants had less than 5 years of experience, 18 % of them has experience of 5 – 10 years, rest 14 % of participants has more than 10 years of experience.

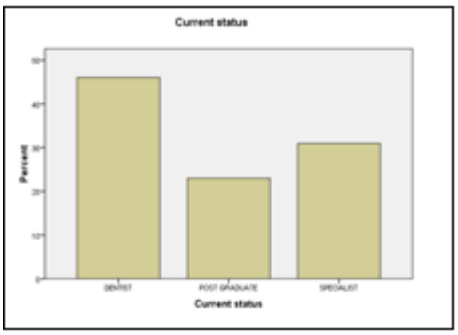

Figure 1: Distribution of participants with current status

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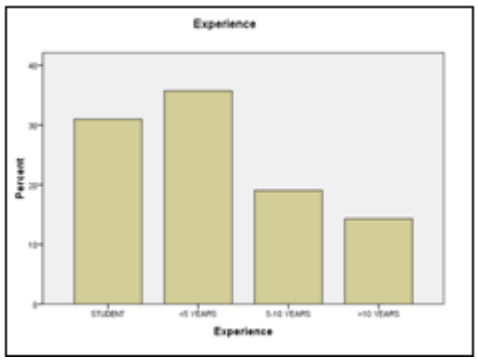

Figure 2: Distribution of participants with their experiences

Results of the survey showed 50% of participants agreed with the statements in the questionnaire and the rest 50 % of participants has the opinion disagree, strongly disagree and strongly agree. Comparison between the education of the participants with variables, results found statistical significance for one variant stating, An imbalance in the oral flora due to microbial contamination (Pearson Chi - Square - 0.35). But in the comparison between the current status with the variable, one variable was found statistically significant stating that the adhesive can enhance the fit of the prosthesis (Pearson Chi - Square - 0.27)

Statistical analysis by person correlation shows statically significant results by comparing experience with variables. Questions stating the continued denture adhesive can provide additional retention and stability for patients who have inadequate oral anatomy (Pearson Chi - Square - 0.34), denture adhesive can useto augment retention, comfort, and function during the interim period after insertion of immediate dentures (Pearson Chi - Square - 0.31), patients can use denture adhesives for a lifetime (Pearson Chi - Square - 0.008), Being related to poor clinical skills and a lack of prosthodontic practice (Pearson chi - square - 0.007), Resorption of the alveolar bone as a result of tissue irritation (Pearson Chi - Square - 0.025), continues uses of denture adhesive lead to formation of Candidiasis (Pearson Chi - Square - 0.29).

4. Discussion

The objective of prosthetic dentistry has always been to improve retention and stability, the two main variables that influence how effectively a removable prosthesis performs. The enhancement of denture retention and stability has been attributed to the use of denture adhesives or denture fixatives as beneficial therapy adjuncts. Zarb et al. claims that "denture adhesive" refers to a soluble, harmless substance that is applied to the tissue surface of the denture to improve retention, stability, and function[5]. Although denture adhesives have been accepted by patients worldwide, prosthodontic educators and dental professionals have been reluctant to endorse this over - the - counter product[6]. The dentistry community continues to disagree on issues related to their efficiency, suggested use, and biocompatibility. This survey is to evaluate the dentist's knowledge, attitude and practices towards denture adhesives with or without speciality training.

Studies showed that a significant percentage of practitioners agreed the use of denture adhesive Can contribute to developing the conditions like candidiasis, oral cancer, denture stomatitis, leucoplakia, imbalance in oral flora, and resorption of alveolar bone as a result of tissue irritation. Özkan et al reported the development of Candida albicans and a - hemolytic streptococci in the oral mucosa of denture wearers after the prolonged use of denture adhesives[7]. Taweel and Shehri conducted a similar study stating that Respondents agreed with the statement that denture adhesive contributes to the development of denture stomatitis (52.2%), candidiasis (66.7%), and imbalance in the oral flora (53.7%), but not to the development of oral cancer (2.8%) or leukoplakia (8.7%). participants have the opinion, as Denture adhesives lead to resorption of the alveolar bone (43.5%) [8]. However, some of the aforementioned viewpoints contradict the available scientific evidence on the biocompatibility of denture adhesives, which does not support the adverse effects of the long - term use of adhesives[9].

For evaluating the attitude of professionals, more than half of the participants have the option of denture adhesive that can enhance the fit of the prosthesis, it's providing psychological comfort to the patients. fewer participants agreed about masking the underlying denture problems and preventing patients from seeing the dentist for recall visits. Polyzoiset al did a Delphi Technique questionnaire, which has been conducted to identify the viewpoints of leading prosthodontic educators regarding the specific topic of denture adhesives[10]. The majority of prosthodontic educators acknowledged the beneficial role of denture adhesives, which implies they improve denture fit and patient comfort. Indeed, the main reasons that denture wearers use adhesives are the improvement of masticatory ability, denture fit, and comfort[11].

Participants agreed that Denture adhesives are useful for stabilizing trial bases during the early stages of denture fabrication, enhancing retention during the interim period after insertion and providing additional retention for patients with inadequate oral anatomy. Furthermore, it was agreed that denture adhesives aid patients in overcoming anxiety following the placement of new complete dentures[12, 13]. Evaluating the responses according to the speciality training and experiences, the strongly agreed and agreed responses had been given by a specialist. Comparison of the ability to respond significantly to questions with their experiences shows more statically significant results.

Within the limitations of this survey, concluded that dentists with speciality training have more knowledge, attitude and practices towards denture adhesives than those without speciality training. adhesives for dentures can speed up clinical denture procedures and are a helpful adjunct in patient care. However, for denture adhesive use to have the greatest positive effects, sufficient worries and precautions are needed. Denture adhesive should not be used instead of good clinical procedures or appropriate denture maintenance by either dentists or patients[14]. The best use of denture adhesives is determined by their judicious, careful, and supervised application. Denture adhesives' considerable emphasis on dental curricula and regular, intensive

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continuing education programs for practitioners are the most effective ways to maximize their positive effects[15]. Additionally, based on current scientific understanding and data, there is a need to develop international standards for the appropriate use of denture adhesives.

5. Summary

Nothing in the literature conflicts with the use of denture adhesives, except its usage in an ill - fitting prosthesis. Adhesives improved masticatory function, retention and stability, incisal bite force and imparted physical and psychological comfort for the patient. Denture adhesives should not be used as a replacement for correctly designed or fitted prostheses, according to experts and educators, although many patients with varied degrees of well - fitting prostheses rely on and benefit from the usage of adhesives. It is our obligation as dentists to have the expertise and compassion necessary to help each patient adjust to dental prostheses. Denture adhesives may need to be suggested, and use advice may be needed. Also, continued research and vigilance in the use of denture adhesives is essential.

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