

A survey of dentists' attitudes toward denture adhesives

Temel Koksall, DDS, PhD¹, Idil Dikbas, DDS, PhD¹, Zeynep Ozkurt, DDS², Burcu Bal, DDS², Ender Kazaoglu, DDS, PhD³

Istanbul, Turkey

Summary

Objective. The purpose of this study was to reveal the approaches of general dentists regarding denture adhesives.

Material and method. 325 private dentists were surveyed through a questionnaire to investigate their attitudes towards denture adhesives.

Results. Cream type denture adhesives were preferred mostly, both for clinical use (55.7%) and for prescribing (70.6%). "Easy use" was the most indicated reason for both preferences of powder and cream type. 71.1% believed that denture adhesives were useful for improving denture retention and stability in patients with inadequate oral anatomy. 56.3% of dentists expressed that they used denture adhesives in their clinical practice. 41.8% stated they prescribed this material to their patients. 52.6% believed that advising a denture adhesive reveals a lack of dentist's professional skills.

Conclusion. It should be emphasized that denture adhesives can be considered as a beneficial adjunct to improve fit, comfort, and function of dentures, and psychological security of patients when indicated in schools of dentistry.

Key words: survey, questionnaire, denture adhesives, private dentists.

Introduction

Due to increasing incidence of chronic residual ridge resorption and a consequent increase in unstable dentures because of prolongation of human life period, denture adhesives may be an effective adjunct to denture treatment and denture aftercare [1].

Denture adhesives have a legitimate place in prosthetic dental treatment. Denture adhesives benefit denture patients with improved fit, comfort, chewing ability and confidence if used properly [1-4]. However, dentists are reluctant to prescribe them for fear that it indicates their failure to provide an adequate denture [2]. Actually the use of

denture adhesives and their role in prosthodontics has been a conflicted topic, both in clinical practice and dental education. This conflicting viewpoint of dental professionals can be described as the traditional historical approach and the advocate approach [5]. According to the traditional historical approach denture adhesives are not more than a poor substitute for proper fit, and the use of denture adhesives is related to poor clinical skills and a lack of prosthodontic practice [4-6]. Dentists who support the advocate approach believe that when needed denture adhesives can facilitate clinical procedures of fabricating denture, patient satisfaction and acceptance [5]. A study shows

¹ Assistant Professor, Department of Prosthodontics, Faculty of Dentistry, Yeditepe University, Istanbul, Turkey

² PhD. Student, Department of Prosthodontics, Faculty of Dentistry, Yeditepe University, Istanbul, Turkey

³ Professor, Department of Prosthodontics, Faculty of Dentistry, Yeditepe University, Istanbul, Turkey

the consensus of academicians on this conflicting subject. Also there are a few reports [2,7,8] in the literature about patients' attitudes towards denture adhesives, but no reports demonstrated the approach, attitude and viewpoint of general practitioners. Therefore, the purpose of this study was to reveal the viewpoints and approaches of general dentists regarding denture adhesive use. Such information could serve to disclose both the range and distribution of professional opinions and beliefs of dentists on the topic of denture adhesives.

Materials and Methods

In this study using a prepared questionnaire, 325 general practitioners living in three big cities of Turkey (Istanbul, Ankara, Izmir) were surveyed regarding their usage and prescribing of denture adhesives. The survey was undertaken between January 2005 and August 2005. The questionnaire was based on a previously conducted survey by Slaughter et al. [5] who used the Delphy Technique Survey Method with some modifications.

Questions in the questionnaire were as follows:

1) Do you use denture adhesives as a beneficial adjunct to stabilize trial bases in the early stages of denture fabrication when needed?

2) Which type of denture adhesive do you prefer to use for clinical sessions of denture fabrication? Please write the reason.

3) Do you prescribe the denture adhesives to your patients when indicated?

4) Which type of denture adhesive do you prefer to prescribe?

5) State your opinion regarding denture adhesives:

a) Denture adhesives have the potential (either positive or negative) to influence the following:

- Enhancing the fit of the prosthesis (*i.e.*, the retention and stability)
 - Creating discomfort with its slimy and sticky texture
 - Providing a psychological comfort to the denture patient
 - Masking the patient's awareness of the pathological tissue changes under ill-fitting dentures
 - Contributing to patients not seeing a dentist for recall and/or to avoid fees (*i.e.*, spending money) associated with denture care, adjustment, or replacement
 - Being related to poor clinical skills and a lack of prosthodontic practice
- b) Denture adhesives can contribute to the development of the following conditions:
- Oral cancer
 - Denture stomatitis
 - Leukoplakia
 - Candidiasis
 - An imbalance in the oral flora due to microbial contamination
 - Resorption of the alveolar bone as a result of tissue irritation
- c) Denture adhesives can be useful for the following clinical situations:
- To stabilize trial bases in the early stages of denture fabrication (*i.e.*, while recording centric and vertical relation)
 - To relieve the patient's fears about possibility of insufficient retention of final prosthesis at try-in visit
 - To provide retention, comfort, and function during the interim period after insertion of immediate dentures
 - To overcome patients' anxiety for a short period (2-3 weeks) after insertion of new complete dentures
 - To provide additional retention and stability for patients who have inadequate oral anatomy
 - To help patient acceptance of new dentures.

Table 1. Distribution of dentists in terms of their denture adhesive preferences

	Powder	Cream	Makes no difference	Total
Dentists using DA* in prosthodontic practice	62 (33.9%)	102 (55.7%)	19 (10.4%)	183 (100%)
Dentist prescribing DA to their patients	23 (16.9%)	96 (70.6%)	17 (12.5%)	136(100%)

DA*: Denture adhesives

Results

56.3% (183) of 325 surveyed dentists stated that they used denture adhesives as a beneficial adjunct related to patient management issues in their clinical practice. 41.8% (136) of all dentists stated that they prescribed denture adhesives to the patients. In fact, 101 of these 136 dentists also belonged to the group that used denture adhesives in clinical practice. 5.1% (7) of these 136 dentists were prescribing this material routinely while the rest of them were prescribing when indicated. Among all respondents, 16 (4.9%) general dentists had no knowledge about denture adhesives. While 183 dentists used denture adhesives in clinical steps, 82 of them did not prescribe to the patients. 91.4% (75) of the 82 dentists thought that prescribing denture adhesives was related to poor clinical skills and a lack of prosthodontic practice.

Table 1 shows the distribution of dentists according to their denture adhesive preferences in chair-side practice and patient aftercare. The results showed the distribution of dentists according to their denture adhesive preferences in chair-side practice and patient recommendation. The results showed that dentists who used denture adhesives mostly preferred cream type for prosthodontic practice (55.7%) and patient aftercare (70.6%). The type of denture adhesive did not matter for 19 (10.4%) of 183 dentists who use denture adhesive in

clinical practice, and 17 (12.5%) of 136 dentists who prescribe denture adhesive to their patients.

Table 2 reveals the reasons for the preferred type of denture adhesives. In the present survey, after all reasons were evaluated, they were organized in 12 basic categories. While 31 of 62 dentists who preferred powder type during clinical sessions declared that it was easy to use, it was interesting that 45 of 102 dentists who preferred cream type stated the same reason for their choices. Similarly, among reasons of preferences of dental practitioners advising both powder and cream type, "easy to use" was the most marked one.

Table 3, 4, and 5 show dentists' opinion regarding denture adhesives from different points of view. According to *Table 3*, the most common opinion (79.4%) was that denture adhesives provided psychological comfort to the patient. 66.2% of 325 dentists stated that denture adhesives can enhance the fit of a denture, and 74.1% of all respondents believed that the use of denture adhesives made patients avoid necessary dental visits. Another opinion shared by 233 dentists was the risk of masking pathological underlying tissue changes related to denture adhesive use. 171 (52.6%) of practicing dentists thought that the use of denture adhesives by the patients reveals the lack of their professional skills. But 138 (42.5%) of dentists thought the contrary.

According to *Table 4*, the participant

Table 2. Reasons of dentists' preference for using denture adhesives

REASONS	Dentists using DA*				Dentists prescribing DA			
	Powder (n=62)		Cream (n=102)		Powder (n=23)		Cream (n=96)	
	n	%	n	%	n	%	n	%
Easy to use	31	50.0	45	44.1	14	60.9	80	83.3
Cheap	11	17.7	4	3.9	3	13.0	0	0
Available in the office	14	22.6	0	0	0	0	0	0
Provides better retention	4	6.4	12	11.8	3	13.0	11	11.4
Not known (for cream)	2	3.2	0	0	3	13.0	0	0
Patient satisfaction	0	0	0	0	0	0	3	3.1
Saving time	1	1.6	0	0	0	0	0	0
Long lasting	2	3.2	0	0	0	0	0	0
Adjusting thickness	2	3.2	0	0	4	17.4	0	0
Easy cleaning	4	6.4	0	0	0	0	0	0
Not known (for powder)	1	1.6	0	0	1	4.3	3	3.1
Short effective	3	4.8	0	0	0	0	0	0
Long effective	0	0	0	0	0	0	14	14.6

dentists stated that denture adhesives contribute to the development of candidiasis (60.6%), imbalance of oral flora (56%), denture stomatitis (55.6%), alveolar bone resorption (13.8). There were 12 dentists who believed that denture adhesives could cause oral cancer development, whereas 35 dentists believed denture adhesives could contribute to the development of leukoplakia. The number of attendants expressing no idea about this subject was 24 (7.4%). 37

dentists (11.4%) thought denture adhesives would not cause any pathological changes.

Table 5 shows the opinion of the respondents regarding specific clinical use or misuse of denture adhesives. 237 (72.9%) general practitioners thought that denture adhesives were useful to stabilize trial bases while recording centric and vertical relation, and try-ins. In this survey, while 21 (6.5%) dentists had no idea about the issues which were indicated in *Table 5*, 55 (16.9%) marked all of them.

Table 3. Perceptions of denture adhesives by dentists

Perceptions of denture adhesives	Answers of dentists		
	Yes	No	No idea
Enhance fit (improving retention and stability)	215 (66.2)	82 (25.2)	28 (8.6)
Create discomfort (sticky and slimy texture)	196 (60.3)	92 (28.3)	37 (11.4)
Provide psychological comfort	258 (79.4)	45 (13.8)	22 (6.8)
Mask pathological underlying tissue changes	233 (71.7)	68 (20.9)	24 (7.4)
Contribute to avoiding dental visits	241 (74.1)	59 (18.2)	25 (7.7)
Be related to poor clinical skills	171 (52.6)	138 (42.5)	16 (4.9)

Table 4. Distribution of dentists' opinions concerning possible tissue changes caused by denture adhesives

Opinions about denture adhesives	No. of dentists
DA* cause tissue changes	264 (81.2%)
<ul style="list-style-type: none"> • Oral cancer 	12 (3.7%)
<ul style="list-style-type: none"> • Denture stomatitis 	181 (55.6%)
<ul style="list-style-type: none"> • Leukoplakie 	35 (10.8%)
<ul style="list-style-type: none"> • Candidiasis 	197 (60.6%)
<ul style="list-style-type: none"> • Inbalance in oral flora 	182 (56.0%)
<ul style="list-style-type: none"> • Alveolar bone resorption 	45 (13.8%)
DA cause no tissue changes	37 (11.4%)
No idea	24 (7.4%)

DA*: Denture adhesives

Discussion

The main reasons for prescribing denture adhesives are to improve denture retention and stability, and to improve patient confidence and comfort in wearing dentures. Slaughter et al. [5] stated that prostho-

dentists agreed with 100% consensus that denture adhesives were useful to provide additional retention and stability for patients who have inadequate oral anatomy. In the present study, the percentage was 71.1% for general practitioners who thought in the same manner. The percentage of the partici-

Table 5. Dentists who agree with specific clinical use/misuse of denture adhesives

Specific clinical use/misuse of denture adhesives	n	%
Useful to stabilize trial bases	237	72.9
Useful to relieve the patient's fears (possibility insufficient retention) at try -in visit	204	62.8
Useful after insertion of immediate dentures	187	57.8
Useful to overcome patients' anxiety after insertion of conventional dentures	119	36.6
Useful to provide additional retention and stability for patients who have inadequate oral anatomy	231	71.1
Useful to help patient acceptance of new dentures	156	48.0

pants who believed that denture adhesives improved the retention and stability without considering oral anatomy was a little lower (66.2%). This may imply that some practitioners believed denture adhesives would be more appropriate only for those patients with inadequate oral anatomy. Also, 79.4% of all dentists believed that denture adhesives provide psychological comfort and confidence during denture wearing. Prosthodontists who participated in the survey conducted by Slaughter et al. [5] achieved 100% consensus in this issue.

In our survey, while 183 (56.3%) of all dentists used denture adhesives in clinical steps, 136 (41.8%) dentists prescribed to their patients when indicated. The fact that the number of dentists who prescribed denture adhesives was relatively less than the ones who used in clinical steps was consistent with the traditional historical approach about denture adhesives in dental literature. Results were consistent with the answers of another question in the survey which inquired whether the participants believed prescription of a denture adhesive was a

sign of the dentists' failure supported this result. All of 171 dentists who thought advising a denture adhesive reveals a lack of dentists' professional skills were already in the group of non-prescribing denture adhesives. Nonetheless, in the dental literature it was stated that this opinion was a myth or a misconception [9].

Slaughter et al. [5] stated that denture adhesives could contribute to the development of denture stomatitis, candidiasis, alveolar bone resorption and imbalance in oral flora, but not leukoplakie or oral cancer. In the present survey, although the three leading tissue changes marked by the practitioners assumed to be caused by denture adhesives were denture stomatitis, candidiasis, and imbalance in oral flora, the percentage of the practitioners who pointed out these three changes altogether was 15% of all respondents.

Conclusion

The general approach of prosthodontists was that denture adhesives could be

prescribed when indicated. However, in the present survey, it was revealed that almost 50% of general practitioners did not recommend denture adhesives when needed. Therefore, it can be concluded that the prosthodontic teachers in schools of den-

tistry should emphasize denture adhesives can be considered as a beneficial adjunct to improve fit, comfort, and function of dentures, and psychological security of patients when indicated and also the students must be cautioned against misuse.

References

1. Adisman IK. The use of denture adhesives as an aid to denture treatment. *J Prosthet Dent* 1989; **62**: 711-715.
2. Coates AJ. Usage of denture adhesives. *J Dent* 2000; **28**:137-140.
3. Coates AJ. Denture adhesives: a review. *Aust Prosthodont J* 1995; **9**: 27-31.
4. Grasso JE. Denture adhesive: changing attitudes. *J Am Dent Assoc* 1996 **127**: 90-96.
5. Slaughter A, Katz RV, Grasso JE. Professional attitudes toward denture adhesives: A Delphi

Technique survey of academic prosthodontics. *J Prosthet Dent* 1999; **82**: 80-89.

6. Shay K. Denture adhesives. Choosing the right powders and pastes. *J Am Dent Assoc* 1991; **122**: 70-6.
7. Ozcan M, Kulak Y, Arıkan A, Silahtar E. The attitude of complete denture wearers towards denture adhesives in Istanbul. *J Oral Rehabil* 2004; **31**:131-134.
8. Bates JF, Murphy WM. A survey of an edentulous population. *Br Dent J* 1968; **124**: 116.
9. Grasso JE. Denture adhesives. *Dent Clin N Am* 2004; **48**: 721-733.

Corresponding author: Temel Koksall DDS, PhD

Mailing address: Bagdat Caddesi No: 238, 34728 Goztepe Istanbul Turkey.

Phone: +90 216 3636044

Fax: +90 216 3636211

E-mail: temel_koksall@yahoo.com