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Research Article

TO STUDY THE APPROACH AND PRACTICES OF DENTURE ADHESIVES EMPLOY AMONG DENTAL PRACTITIONERS' OF VARANASI CITY, UTTAR PRADESH

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ABSTRACT

The employ of denture adhesives (DA) and their role in prosthodontics has been a conflicted issue both in clinical practice and dental education. The apply of adhesives, are viewed as poor expression of their clinical skills and prosthetic expertise or to provide retention to an ill-fitting prosthesis by many dentists. These contradictory views have raised many doubts among practising dentists on the use of DAs in their clinical practice. The aim of this study was to assess the knowledge, attitudes and practices of Denture Adhesive use among private dental practitioners' of Varanasi city, Uttar Pradesh, India. This descriptive, cross-sectional survey was conducted using a self-administered questionnaire involving private dental practitioners of Varanasi city. A total of 150 private dental practitioners of Varanasi city made up the sample of the study. A complete, closed ended, self-administered questionnaire was employed which was designed to collect to assess the knowledge, attitudes and practices of denture adhesive use among private dental practitioners'.

Keywords: Complete Denture, Denture adhesive, Dental Practitioner, Prosthesis, Prosthodontics

INTRODUCTION

The use of adhesives, are viewed as poor reflection of their clinical skills and prosthetic expertise or to provide retention to an ill-fitting prosthesis by many dentists. These conflicting views have raised many doubts among practising dentists on the use of DAs in their clinical practice. Man, from time immemorial, has tried to increase the life span and enhance his health from various scientific innovations. With discoveries in medical sciences and improvements in his social conditions, the average life span now in most parts of the world continues to increase.

It is predicted that the elderly population of India shall be the highest in the world by 2025 and their contribution to the demographic profile is increasing everyday¹. According to the 1991 census, the geriatric population constituted 6.7 % of the total Indian population and is expected to increase its share to 10 % by the year 2021² Oral disorders are chronic in nature and cumulative throughout life and hence unfavourable outcomes are likely to be greatest among the elderly. In the coming decades, dental practitioners will face the challenge of providing dental care for a growing number of elderly who fail to retain their natural teeth³. The speciality of prosthodontics has continuously evolved as a result of progress in laboratory

and biomaterial science, clinical technologies and multi-disciplinary advancements. More advanced procedures are followed lately in replacement of the missing tooth and restoring it to its prior form, function and aesthetics.

Successful prosthodontics treatment combines exemplary technique, effective patient rapport, education and familiarity with all possible management options to provide the highest degree of patient satisfaction. Complete dentures constitute one of the most important treatment options in prosthodontics, more so with an increase in average life expectancy of the individual. Newly made dentures could be a disappointment to a patient if deficient in retention and/or stability and could contribute to a sense of social anxiety and lack of confidence in them⁴. However, retention of complete dentures has always posed to be a problem for the dentist. The use of denture adhesives (DA) in complete dentures can be justified when it is not possible to obtain sufficient retention and stability and when implants or surgical ridge augmentation procedures are not an option because of the patient's economic situation, systemic conditions, or age. Adhesives have been introduced in modern dentistry in the late fifteenth century. The earliest patent pertaining to adhesive was issued in 1913 and other patents followed this in the 1920s and 1930s⁵. American Dental Association referenced adhesives in the 1,035 edition

of Accepted dental remedies⁶. Since then, adhesives have been introduced with different compositions with the aim of providing viscosity and stickiness by absorbing water thus improving the retentiveness of the removable prosthesis.

These conflicting viewpoints among dental professionals have led to slow acceptance of DA in their practice as a means to enhance denture retention, stability and function. Dentists need to be familiar with DA to be able identify those patients who actually need them and to be able to educate them about the advantages, disadvantages and correct use of these products. This is an intriguing topic because it has received so little attention in the formal training of dentists, despite their widespread use among denture wearers. Hence, the aim of this study was to assess the knowledge, attitudes and practices of Denture adhesive use among private dental practitioners of Varanasi city, Uttar Pradesh, India.

MATERIALS AND METHODS

This evocative, cross-sectional study was conducted using a self-administered questionnaire involving private dental practitioners of Varanasi. This sample of 150 private dental practitioners was personally approached by the investigators and requested to complete a widespread congested ended, self-administered questionnaire. One hundred and Forty four dentists participated in the study. The response rate for the study was 97.5 %. The general cause to decline participation was time restriction. A comprehensive, closed-ended, self-administered questionnaire was employed which was designed to gather the socio-demographic characteristics, duration of practicing dentistry, assess the knowledge, attitudes. Every one signed an informed consent before answering the questionnaire.

This 19 item questionnaire included seven knowledge related statements (mechanism of adhesion, composition, Clinical use, indications and contra-indications), each of these statements had three options to choose from: yes, no and don't know. Four Attitude statements were included (use, perceived necessity, patient education). The options for attitude were based on 5-point Likert scale, it requires the dentists to make a decision on their levels of agreement along this scale (Strongly disagree, disagree, don't know, agree, and strongly agree). Finally eight practice questions (clinical practice, patient instructions on use, patient recall and evaluation) were included. The questionnaire was pilot tested on 20 private dental practitioners and was assessed for the uniformity of interpretation. No major corrections were necessary in this questionnaire except a few minor grammatical changes in the structure of the questions. This data gathered during the pilot survey was not included in the main study. The questionnaire took about 20 min to complete. The institutional review committee approved the study. Data were imported to the SPSS 22.00 program to draw the means and percentages. For better interpretation of the results the subjects are divided into different groups namely; age groups (20–30, 30–40, 40–50, [50 years), gender (males and females), qualification (bachelor degree holders—general dental practitioners (GDPs), master degree holders in the branch of prosthodontics and master

degree holders other than prosthodontics—other specialist's), duration of clinical practice (1–15, 15-20 years)

RESULTS

Table 1 shows the response of the subjects' knowledge on DA use in denture therapy. When the subjects were questioned if DA were soluble in saliva, 33 % of the GDPs replied wrongly. Similarly 24 % of the GDPs didn't know that using DA with incompletely removed old DA affected tissue health. Zn containing DA are recently held responsible for causing neurological diseases on their prolonged usage, 74 % of the GDPs and 73 % of other specialists were unaware in this context. When the subjects were asked to identify the wrong mechanism of action among the given options, 73 % GDPs, 100 % prosthodontists and 52 % other specialists were successful in identifying the wrong answer. A mixed response was elicited when the subjects were asked if the use of DA in patients with xerostomia is beneficial or contraindicated.

Table 2 shows the dentists attitude regarding DA from different points of view. DA was considered to improve retention in improperly fabricated dentures according to 33 % of GDPs and 40 % of other specialists. When asked if the study subjects prescribed DA for their patients routinely; 42 % GDPs along with 59 % other specialist's answered, 'no' and 83 % prosthodontists answered, 'when needed'. More results related to the use of DA in their clinical practice are presented in Table 3. These results showed that most of the GDPs 47% used DA to stabilize trial bases during recording jaw relations. Successful treatment combines exemplary technique, effective patient rapport and education. When asked if dentists disseminated adequate information regarding the method of application, removal/cleaning of the denture bases and tissue surfaces, misuse and maintenance of oral hygiene; 42 % GDPs, 83 % prosthodontists along with 22 % other specialist's only shared all the instructions with their patients.

DISCUSSION

This survey gathers the knowledge about DA amongst these dentists which would in turn greatly benefit its use in their clinical practice in providing guidance in use for patients requiring them. The main reason for prescribing DA is to improve denture retention and stability in turn improving patient's confidence and comfort in wearing dentures. This consensus was upgraded by a panel of Prosthodontics⁷. In this survey DA is referred to a commercially available non-toxic, soluble material (powder, cream or liquid) that is applied to the tissue surface of the denture. This survey DA is referred to a commercially available non-toxic, soluble material (powder, cream or liquid) that is applied to the tissue surface of the denture. The results show that 31 % of the GDPs were unaware that this group of DA was soluble in saliva. Dentists need to possess knowledge in order to educate all dentures wearing patients about the product as they are widely used in the removable prosthetic care. Patients rightfully expect their dentist to be accurately informed about the use of such products and be the source of correct information for his patients.

Denture hygiene in patients using DA should be given additional attention whereas, the present study demonstrated that 22 % of GDPs were unaware that incomplete removal of DA before reapplication was detrimental for tissue health. Stafford et al⁸ indicated that DA could influence oral flora by causing an imbalance in the flora. Most of GDPs (46 %) were ignorant that prolonged use of DA on ill-fitting dentures would result in RRR. Patients should be educated about the importance of regular ‘recall appointments’ for the evaluation of the condition of denture and its foundation^{9,10}. These considerations are particularly important for patients employing DA because the use of such product can modify or eliminate customary cues for returning to the dental office. Thirty-nine percent of GDPs did not recall their denture patients using DA. Because patient-specific and time-dependent changes in the denture-bearing tissues occur, all clinicians should periodically evaluate each denture wearer for RRR, changes in vertical dimension of occlusion, phonetics, integrity of the denture bases and prosthetic tooth wear, as well as for other biological reasons, including general systemic health, health of the oral soft tissues, oral cancer screening and blood pressure screening. Although the evidence is weak, dentures should be cleaned annually by a dentist or dental professional by using ultrasonic cleansers to minimize bio film accumulation over time¹¹. Sixty-six percent of GDPs professionally cleaned the old dentures whenever the patients visited their clinic. Overall, the present study achieves its purpose by creating minor in roads into an otherwise unknown domain of use, misuse, misconceptions and malpractice of Das among the practicing dentists of Varanasi city. The results from the present study conclude that the throughout knowledge about these dental materials are limited to only the specialists in the field of prosthodontics and not universal.

CONCLUSION

Although denture adhesives improve the retention and function of complete dentures, standardized guidelines are needed for the proper use, application, and removal of denture adhesives. Additionally, long-term studies are warranted on the biologic effects of denture adhesives. There is a need to establish a regular recall program for complete denture patients. With complete dentures, insufficient denture retention is a powerful determinant of patient satisfaction. Prior to working with the adhesive, however, it is important to determine the existing denture fit and function, as this may dictate what a practitioner, and/or patient can hope to accomplish with the help of adhesive. It was concluded from survey reports that despite DA being used frequently by the dentists, unfortunately they did not have sufficient knowledge regarding the material in Varanasi city. The attitude is a

reflection of an individual’s knowledge, which was also not homogeneous. It is through a methodical knowledge of the attributes and limitations of these over-the-counter products that the dental profession can better guide patients in the management of their prosthesis. By pursuing continuing education courses the practitioners can update themselves regarding new technology and materials, thus improving the standard of care for prosthodontic patients in Varanasi city.

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Table 1: Subjects knowledge on denture adhesives use in denture therapy N (%) N = 150

Questions	General practitioner	Prosthodontists	Other specialist’s
Are denture adhesives soluble in saliva?			
Yes	52 (43))	4 (82)	25 (78)
No	45 (33)	1 (17)	3 (11)
Don’t know	15 (28)	0 (0)	5 (11)

Does the use of dentures with incompletely removed old denture adhesives affect tissue health?			
Yes	97 (71)	5(100)	24 (94)
No	5 (4)	0 (0)	0 (0)
Can improper use of denture adhesives cause denture stomatitis?			
Yes	95 (68)	6 (100)	25 (92)
No	10 (14)	0 (0)	2 (4)
Don't know	10 (17)	0 (0)	2 (4)
Does prolonged use of denture adhesives with ill-fitting dentures cause residual ridge resorption?			
Yes	72 (52)	5 (100)	23 (96)
No	30 (14)	0 (0)	0 (0)
Don't know	20 (34)	0 (0)	1 (4)
Can excessive use of zinc containing denture adhesives cause neurological disease?			
Yes	24 (17)	6 (100)	7 (26)
No	10 (12)	0 (0)	0 (0)
Don't know	95 (71)	0 (0)	8 (74)

Table 2: Subjects attitudes related to the use of denture adhesives

Questions	Strongly agree/agree	Don't know	Strongly disagree/disagree
Patients with poor oral hygiene maintenance should not use denture adhesives.			
General practitioners	90 (65)	21(17)	24 (19)
Prosthodontists	5 (83)	0 (0)	1 (17)
Other specialist's	8 (89)	0 (4)	2 (7)
Prescribing denture adhesive indicates inadequate skills of the clinician to fabricate dentures.			
General practitioners	12 (10)	20 (15)	104(75)
Prosthodontists	1 (17)	0 (0)	4 (84)
Other specialist's	3 (19)	1 (4)	5 (78)
Denture adhesive is used to provide retention to improperly fabricated or ill-fitting prosthesis			
General practitioners	43 (32)	13 (10)	72 (58)
Prosthodontists	0 (0)	0 (0)	6 (100)
Other Specialist's	10 (41)	0 (0)	12 (59)
More the amount of denture adhesive used better is the retention of the denture.			
General practitioners	20 (16)	12 (12)	100 (73)
Prosthodontists	0 (0)	0 (0)	6 (100)
Other specialist's	0 (0)	0 (0)	12 (100)

Table 3: Denture adhesives use in their clinical practice N (%) N = 150

Questions	General practitioner	Prosthodontists	Other specialist's
Do you use denture adhesives in your practice?			
Yes	105 (83)	6 (100)	28 (81)
No	10(17)	0 (0)	1 (19)
Do you recall patients using denture adhesives periodically?			
Yes	82 (61)	4 (100)	16 (74)
No	34 (39)	0 (0)	5(26)
Do you professionally clean the old dentures whenever the patients visit your clinic again?			
Yes	82(66)	6 (100)	12 (85)
No	45 (34)	0 (0)	4 (15)

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