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ORIGINAL RESEARCH

Assessment of Dental Anxiety and its Correlation with Denture Satisfaction in Edentulous Patients

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ABSTRACT

Objective: The objectives of this study were to measure the level of dental anxiety and its correlation with dental history, denture satisfaction and other variables.

Materials and methods: A cross-sectional study was conducted on 150 completely edentulous patients reporting to the Department of Prosthodontics, KLES's Institute of Dental Sciences, Belgaum, over a period of 17 months (August 2005 to March 2007). The anxiety level of the patients was assessed with the help of a questionnaire, after obtaining an informed consent. Reliability of the dental anxiety scale was assessed by means of coefficient alpha.

Results: The results of this study concluded that dental anxiety scale for edentulous patients was a reliable scale for measuring dental anxiety. The anxiety score was higher for female than male patients. A significant correlation was found between denture satisfaction score and anxiety.

Discussion: Anxiety plays a major role in denture satisfaction. The variables included: Previous denture experience, occupation, medical history, age, gender, dental anxiety scale, period of edentulousness, age of previous dentures, number of complete dentures, denture satisfaction score, and the score on the Hamilton anxiety scale

Conclusion: The study indicated that gender correlates significantly with dental anxiety. Patients with medical history were found to be more anxious than normal patients. Patients with higher anxiety values were less satisfied with the treatment. Lastly, subjects with higher general anxiety showed greater values on the dental anxiety scale.

Clinical significance: The assessment of dental anxiety will help the prosthodontist in the management of anxious patients and secondly to provide evidence-based research into this psychological construct which has been shown to predict dental avoidance.

Keywords: Dental anxiety, Denture satisfaction, Completely edentulous patients.

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INTRODUCTION

The term edentulism reflects an organ deficiency that is generally seen in elderly people and that has a deep impact on the quality of life.

In fact, several factors, such as age, gender, education, profession, social status, environment, personality type, have an effect on the level of patients expectations. In addition, the physiologic, psychologic, and pathologic changes observed in geriatric patients can considerably influence the use of their dentures as well as patient satisfaction.[1]

The dentist, when fabricating complete dentures, is faced with the possibility that on their completion, the patient may not be able to adapt to them. A number of factors, such as fear, anxiety and depression may be responsible for this.[2]

Dental anxiety is defined as the degree to which a person is apprehensive about the dental treatment. It may range from no apprehension at all to extreme anxiety.[3]

If the clinician is aware of his patient, he can also take measures to help alleviate the anxiety during the operative procedure.[4]

The assessment of dental anxiety is important for two reasons: First, to assist the prosthodontist in the management of anxious patients and secondly to provide evidence-based research into this psychological construct which has been shown to predict dental avoidance.[5]

The nature of denture acceptance is highly subjective and causes many patients to express dissatisfaction with their well-fitting adequately functional dentures.[6]

To understand the interpersonal transaction between the dentist and patient, one must recognize three important facets: Basic trust, a new unique experience for the dentist as well as the patient and transference.[7]

A method of evaluating or assessing the self image of a patient prior to treatment might provide greater insight into the patient's mental attitude, which is probably influenced by a series of social factors, and by the general state of his health.[8,9]

In general, dental anxiety has been found to play a profound role on dental behavior, dental satisfaction and complaints in edentulous populations.[10]

MATERIALS AND METHODS

This cross-sectional study was conducted among the completely edentulous patients reporting to the Department of Prosthodontics, KLES's Institute of Dental Sciences, Belgaum, during the period of 17 months to determine the level of dental anxiety.

A pilot study was conducted to check the feasibility of the study and validity of the questionnaire on 10 patients and based on the result and previous articles the sample size of 150 was determined.

Convenient sampling technique was used for methodology.

Ethical clearance was obtained from the ethical committee appointed by the institute prior to the study and an informed consent was taken from completely edentulous patients.

Anxiety level of completely edentulous patients was determined with the help of a questionnaire which was designed for the assessment of anxiety. Dental anxiety was assessed with the help of dental anxiety scale (modified from 'Corah's Anxiety Scale') and general anxiety was assessed with the help of Hamilton anxiety scale. A single trained examiner recorded all the questionnaires.

Reliability of the dental anxiety scale for edentulous subjects was assessed by means of coefficient alpha. The correlation between the anxiety scale and other variables was obtained using the Pearson's correlation coefficients.

RESULTS

Distribution of patients according to period of edentulousness showed a mean of 3.6 ± 5.5 for male and mean of 5.8 ± 6.3 for female subjects (Table 1).

Distribution of patients according to previous use of dentures showed (63) 42% patients with previous denture experience.

Denture satisfaction score showed (67) 75.2% male and (36) 59.0% female patients with score,[3-5] i.e. satisfied (Table 2).

Dental anxiety score showed (45), 81.8% male patients with score,[5-9] i.e. uneasy (Table 3).

Subjective relativity of functional complaints showed 96.6% male and 93.4% female patients with the complaint food lodgment under upper denture whereas 93.2% male and 95% female patients with the complaint food lodgment under lower denture (Table 4).

Amongst the esthetic complaints the most significant complaint was inadequate display of teeth. Hundred percent patients including male and female reported the same, whereas 98.8% male and 96.7% female patients reported with complaint 'teeth not straight enough' (Table 5).

Hamilton anxiety scale showed a mean value of (5.8 ± 0.7 and 8 ± 7.7) for male and female patients consecutively.

DISCUSSION

Anxiety plays a major role in denture satisfaction of the edentulous patients. The variables included: Previous

Table 1: Distribution of patients according to period of edentulousness and mean age of the dentures

	Mean (SD)-Male	*Mean (SD)-Female*
Period of edentulousness	3.6 ± 5.5	5.8 ± 6.3
Mean age of the dentures	2.7 ± 4.9	4.2 ± 5.8

Table 2: Level of denture satisfaction of patients with regard to gender

Satisfaction scores	*Male*	*Female*
0-2 (very satisfied)	9 (10.1%)	1 (1.6%)
3-5 (satisfied)	67 (75.2%)	36 (59.0%)
6-8 (neither satisfied nor dissatisfied)	11 (12.3%)	18 (29.5%)
9-11 (dissatisfied)	2 (2.2%)	6 (9.8%)
12-14 (very satisfied)	0	0
Total	89	61

Table 3: Level of dental anxiety of male and female patients as related to previous denture experience

Anxiety scores	*Male with previous dentures*	*Female with previous dentures*	*Male without previous dentures*	*Female without previous dentures*
0- 4 (relaxed)	0	0	1 (1.8%)	1 (2.9%)
5- 9 (uneasy)	29 (85.2%)	14 (51.8%)	45 (81.8%)	21 (61.7%)
10-14 (tense)	5 (14.7%)	10 (37.0%)	8 (14.5%)	8 (23.5%)
15-19 (anxious)	0	3 (11.1%)	1 (1.8%)	4 (11.7%)
20-24 (frightened)	0	0	0	0
Total	34	27	55	34

Table 4: Subjective relativity of functional complaints (mandibular dentures) with regard to gender of the patients

	Male			*Female*		
	A	*B*	*C*	*A*	*B*	*C*
0 (not at all)	59 (66.2%)	71 (79.7%)	83 (93.2%)	24 (39.3%)	36 (59%)	58 (95.0%)
1 (a little)	18 (20.2%)	13 (14.6%)	4 (4.4%)	16 (26.2%)	18 (29.5%)	3 (4.9%)
2 (quite a lot)	10 (11.2%)	5 (5.6%)	2 (2.2%)	14 (22.9%)	7 (11.4%)	0
3 (extremely)	2 (2.2%)	0	0	7 (11.4%)	0	0
Total	89	89	89	61	61	61

A: Lower denture gets loose during function; B: Pain while chewing; C: Food lodgment under lower denture

Table 5: Subjective relativity of esthetic complaints to the bulbous nature of denture with regard to gender of patients

	Male				*Female*			
	A	*B*	*C*	*D*	*A*	*B*	*C*	*D*
0 (not at all)	82 (92.1%)	83 (93.2%)	82 (92.1%)	88 (98.8%)	56 (91.8%)	52 (85.2%)	53 (86.8%)	59 (96.7%)
1 (a little)	3 (3.3%)	2 (2.2%)	2 (2.2%)	1 (1.1%)	3 (4.9)	6 (9.8%)	6 (9.8%)	1 (1.4%)
2 (quite a lot)	3 (3.3%)	3 (3.3%)	3 (3.3%)	0	2 (3.2%)	3 (4.9%)	1 (1.4%)	1 (1.4%)
3 (extremely)	1 (1.1%)	1 (1.1%)	2 (2.2%)	0	0	0	1 (1.4%)	0
Total	89	89	89	89	61	61	61	61

A: Teeth being too big; B: Teeth where placed too far forward; C: Teeth that where too obvious; D: Teeth that were not straight enough

denture experience, education, occupation, medical history, age, gender, dental anxiety scale (for edentulous), period of edentulousness, age of previous dentures, number of complete dentures, denture satisfaction score, and the score on the Hamilton anxiety scale.[12]

A survey conducted in 1989 described anxiety as a result of (pain) expectations and concluded that patients having previous denture experience tended to have lower anxiety scores.[10,13,14]

The present study however found no correlation between previous denture wearers and the dental anxiety scores.

A possible cause for this could be the fact that patients may have had previous painful dental experiences.[15]

When discussing the age of the patient with respect to dental anxiety, the results of the numerous studies conducted have been varied and contradictory at best. The present study found no correlation between the age of the patient and the dental anxiety score.[11,17]

Researchers have traditionally associated female patients with having a higher dental anxiety scale (DAS) scores than their male counterparts. The explanation may be correlated with the fact that in general women are over represented in categories involving anxiety, worry and fear. In accordance with other authors, this study also found the DAS scores to be higher among female subjects.[4,16]

Investigators have found that patients receiving their first denture consistently have more difficulties in all categories of function, comfort and appearance than patients with past experience with dentures. As patients acquire additional sets of dentures, their neuromuscular control becomes more highly developed.[10]

Gjengedal H et al[18] has done the study to explore variables that might influence self-reported oral health and denture satisfaction in partially and completely edentulous patients. The results of this study suggest that the completely and partially edentulous differ in variables associated with, and predictive for, both self-reported oral health and denture satisfaction.

Dental anxiety is a significant cause of poor dental health. Because patients often prefer nonpharmacological interventions, the clinical effectiveness of clearly structured approaches is of particular interest.[19]

The current investigation aimed to correlate denture satisfaction to the level of dental anxiety. Finally, the Hamilton anxiety scale, which is the most widely utilized assessment scale for anxiety symptoms, was used to evaluate the general anxiety of individuals. Patients rating high on this scale were considered under the tag of general anxiety. In conclusion, patients who are diagnosed as being anxious are more prone toward dental anxiety as compared to non-anxious individuals.

CONCLUSION

The above study concluded that:

1. The dental anxiety scale for edentulous subjects was a reliable scale for measuring dental anxiety.
2. Dental anxiety does not correlate with the age of the patient and the period of edentulousness.
3. The anxiety score was more for female patients than male patients.
4. There was a significant correlation between the denture satisfaction score and anxiety.

5. With respect to psychological variables the scales of the Hamilton anxiety scale showed significant correlations with dental anxiety: The higher the scores on the scale the higher the dental anxiety.

In conclusion, proper recognition and diagnosis before the treatment begins can prevent many problems associated with dentally anxious patients, thus preventing stress and discord for both the dentist and the patient. Patients identified as being anxious may benefit from pretreatment counseling, which can have a significant effect on the satisfaction of patients receiving dentures for the first time.

CLINICAL SIGNIFICANCE

The assessment of dental anxiety will help the prosthodontist in the management of anxious patients and secondly to provide evidence-based research into this psychological construct which has been shown to predict dental avoidance. If the clinician is aware of his patient, he can also take measures to help alleviate the anxiety during the operative procedure.

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