

Factors Related to Patient Expectation and Satisfaction among New and Existing Denture wearers with Complete denture therapy

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Abstract

Introduction: Edentulism is considered a debilitating condition with aging in which several dental and non-dental factors play vital role in the success of prosthodontic treatment. Patient satisfaction is important non-dental component. Dentist should aim for functional rehabilitation by satisfying patient medically, functionally and psychologically. Patient's satisfaction depends on two factors: patient factor and dentist factor. From patient's view, satisfaction is guided by improved quality with factors like eating, easy communication, comfort, social life, economic status and vocational opportunities. From dentist's view, treatment options, treatment cost etc. affects the patient's satisfaction.

Materials and Methods: Experimental study conducted in Department of Prosthodontics, College of Medical Sciences, Bharatpur in patients receiving complete denture by convenience sampling in six months duration in sixty five samples. Questionnaire regarding patient's expectations and satisfaction in terms of retention, mastication, phonetics, esthetics and comfort were used in both 1st time denture wearer and existing denture wearer was recorded. Grading was rated with Visual Analog Scale (VAS) from 0 to 10 using the optimum cutoff values. Data were recorded in SPSS 21 and analyzed.

Results: Independent t-test was carried out for expectation showing statistically significant difference between retention, mastication, aesthetics, phonetics, comfort and denture status with p value 0.036, 0.00, 0.001, 0.003 and 0.013 respectively. Statistically significant difference was found for satisfaction between aesthetics and denture status with p value 0.01.

Conclusions: Expectation and satisfaction was found to be more in first time denture wearers than existing denture wearers. Experiences obtained beforehand with complete dentures could influence patient expectations and satisfaction.

Key words: Aesthetics; Complete denture; Mastication; Phonetics.

Introduction

Conventional complete denture is still regarded as acceptable modality, despite the availability of advanced methods as implants. For achieving optimum retention and stability of full dentures several factors

are included. Degree of resorption of alveolar ridges, soft tissue resiliency, neuromuscular coordination, condition of oral mucosa, depth of sulcus and hypertrophy of the tongue are patients' factors.¹⁻⁶ Technical, biological and physiological correlation can fabricate acceptable set of complete denture.⁷ Satisfaction and dissatisfaction also depends upon prosthetic factors like aesthetics, phonetics, mastication, comfort.⁸⁻¹²

Mental attitude may also be important for patient acceptance towards new denture.¹³ Several studies show that patient with complete denture therapy get the satisfaction increased with their

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denture after couple of years of insertion.¹⁴ Patients experience with previous denture have different attitude towards satisfaction.

This study aims to relate the patient's expectation and satisfaction with new and previous denture wearer regarding retention, mastication, aesthetics, phonetics and comfort.

Materials and Methods

It is an experimental longitudinal study which was conducted for patients receiving Conventional Complete Denture in the Department of Prosthodontics, College of Medical Sciences -TH, Bharatpur in the duration of 6 months (1st March 2020 to August 31st 2020). Ethical clearance from Institutional Review Board was taken. Informed consent was obtained from the patients prior to study.

Two groups were divided: One with new denture and the other with existing denture wearer. According to the inclusion criteria,

- i. Patients with edentulous upper and lower jaw
- ii. Patients with age between 38-40 years
- iii. Patients who can understand and respond to the questions asked to them

And exclusion criteria

- i. Patients with neurological and psychological disorders.
- ii. Patients suffering from acute and chronic symptoms of temporomandibular disorder.
- iii. Patients who have undergone jaw surgeries for trauma, cancer, etc.,

Sample size was calculated using following formula:

$$\text{Sample size} = 2SD^2(Z_{\alpha/2} + Z_{\beta})^2 / d^2$$

SD IS 0.45 and d is 0.3. Therefore, sample size calculated to be 25 in each group with total being 50. Non-response rate of 25% was taken therefore being 62.5. Hence, rounding off sample size of 65 was taken.

Before starting the treatment of fabrication of Conventional Complete Denture, a questionnaire was given to them and was explained in the local language or the language in which the patient understands. The patient's expectations regarding retention, mastication, aesthetics, phonetics and comfort was recorded in Visual Analog Scale. It was presented as a 100mm (10cm) horizontal line on which patients responded to the questionnaire by indicating a position between two end points of the scale.

This was done in both the patients with new denture and that with existing denture with same process and material by the single prosthodontist. After that fabrication of complete denture was done. After one month follow up, patients were given the same questionnaire for the satisfaction of present denture regarding the same aspects.

The results were then statistically analysed. The data collection was done in MS-EXCEL and analysis was done in SPSS 21. Descriptive statistics were used to describe the data and independent t-test was used to find the significant difference for independent groups (1st time denture wearer and existing denture wearer).

Results

Out of total 65 patients were examined who met the inclusion criteria. 48% were first time denture wearers while 52% were existing denture wearers (Figure I).

Of the total participants, majority of them i.e. 53.8% were females (Figure II).

Overall mean expectation and satisfaction was found to be greater in first time denture wearers than in existing denture wearers as shown in Table I.

Table II shows association of overall mean expectation and satisfaction with gender shows that there was no statistically significant difference between the same. Overall mean

expectation was found to be lesser in males as compared to females. Also, overall mean expectation was found to be greater than the overall mean satisfaction (Figure III).

Independent t-test was carried out for comparison of expectation of patients with denture status. Statistically significant difference was found to be between retention and denture status (p=0.036), mastication and denture status (p=0.00), aesthetics and denture status (p=0.001), phonetics and denture status

(p=0.003) and comfort and denture status (p=0.013) as shown in Table III.

Independent t-test was carried out for comparison of satisfaction of patients with denture status. There was no statistically significant difference between retention and denture status (p=0.19), mastication and denture status (p=0.58), phonetics and denture status (p=0.17) and comfort and denture status (p=0.11). However, statistically significant difference was found to be between aesthetics and denture status as shown in Table IV.

Table 1: Table showing overall mean expectations and satisfaction score among first time denture wearers and existing denture wearers

Overall mean score		
	Expectation	Satisfaction
First time denture wearers	8.1	7.0
Existing denture wearers	7.0	6.1

Table 2: Table showing comparison of overall mean expectation and satisfaction with gender

	Male	Female	p value
Overall mean expectation (SD)	7.3 (1.3)	7.7 (1.5)	0.17
Overall mean satisfaction (SD)	6.1 (2.2)	6.9 (1.9)	0.15

Table 3: Table showing comparison of expectation of factors among existing denture wearers and first time denture wearers using Independent t-test

Variables	First time denture wearer		Existing denture wearer		p value
	Mean	Standard deviation	Mean	Standard deviation	
Retention	8.0	1.80	7.1	1.47	0.036*
Mastication	8.4	1.26	7.2	1.39	0.00*
Esthetics	8.5	1.78	7.0	1.66	0.001*
Phonetics	7.9	1.55	6.7	1.41	0.003*
Comfort	7.9	1.58	6.9	1.76	0.013*

*Statistically significant with p value<0.05

Table 4: Table showing comparison of satisfaction of factors among existing denture wearers and first time denture wearers using Independent t-test

Variables	First time denture wearer		Existing denture wearer		p value
	Mean	Standard deviation	Mean	Standard deviation	
Retention	7.0	2.44	6.3	1.70	0.19
Mastication	6.3	2.98	6.0	1.68	0.58
Esthetics	7.5	2.23	6.2	2.07	0.01*
Phonetics	7.0	2.49	6.3	1.94	0.17
Comfort	7.0	2.80	6.0	1.96	0.11

*Statistically significant with p value<0.05

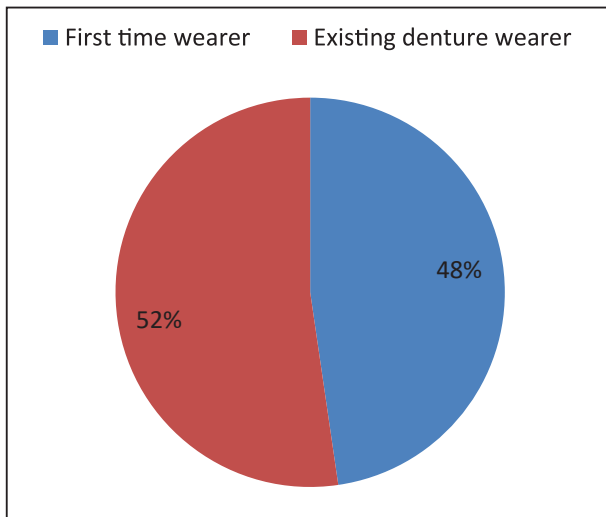


Figure 1: Figure showing distribution of study participants based on denture status

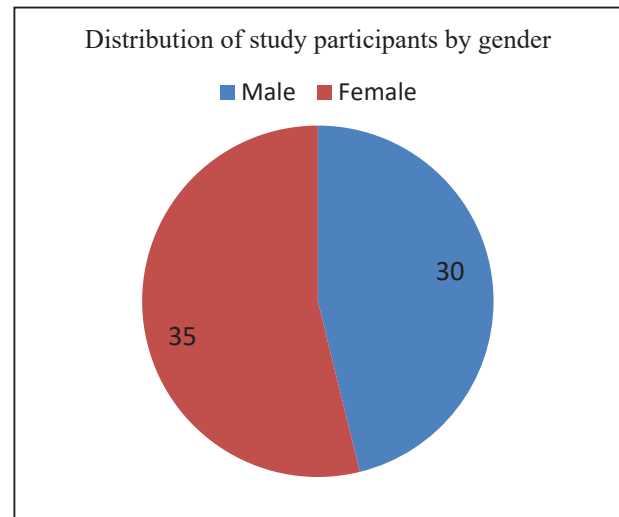


Figure 2: Figure showing distribution of study participants based and gender

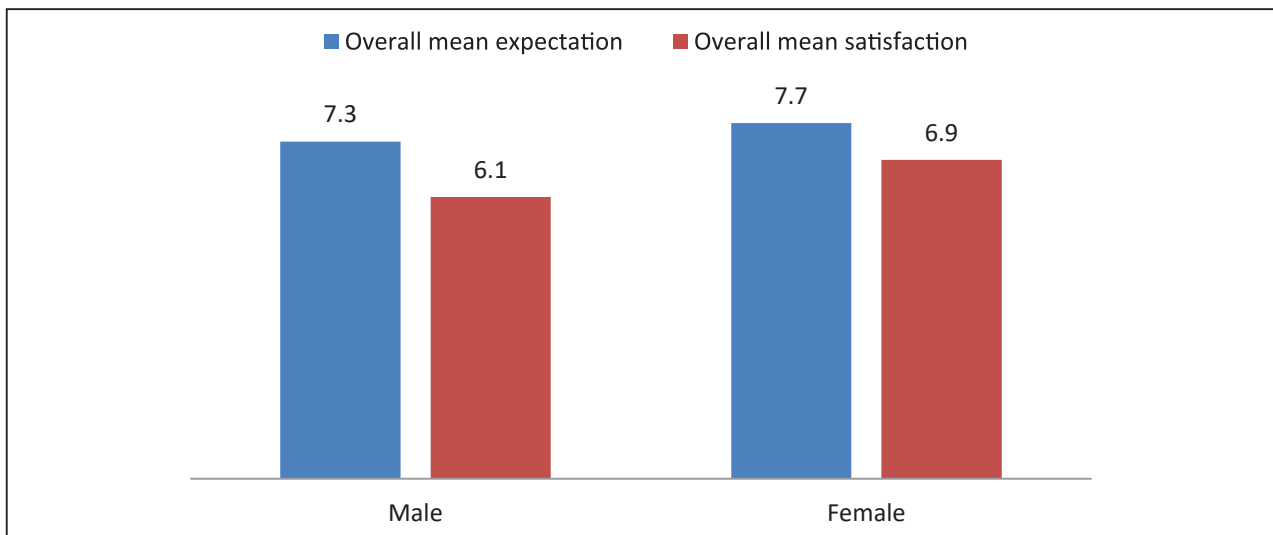


Figure 3: Figure showing comparison of overall mean expectation and satisfaction with gender

Discussion

Several studies related to satisfaction in complete denture had been conducted. In those studies satisfaction was calculated whereas expectations of the patients prior to treatment were not evaluated. So, in this study we attempt to see the expectation of the patient to meet the satisfaction or not. With the help of questionnaire patient satisfaction which is considered as treatment outcome had been considered.¹⁵

Existing denture wearers are often difficult to treat and satisfy by the dentist than the first time denture wearer. Therefore, this study helps to

find the satisfaction and expectation factors in existing denture wearer and first time denture wearer. Expectation of the patients shows statistically significant difference between the two groups. This might be because patient had no experience about the denture and wants the artificial denture similar to that of natural factors such as mastication, retention, aesthetic, comfort and phonetics are related to satisfaction according to Sato et al.¹⁶

So, in this study by questionnaire these factors were used. According to these questionnaires fit of the denture (retention), chewing

efficacy(mastication), appearance(aesthetic), ability to speak (phonetics) and the comfort to wear denture were inquired.

In our study the patient's expectation was higher than the satisfaction after treatment similar to Gasper et al.¹⁷ Expectation before treatment were higher for all factors in both first time denture wearer and existing denture wearer. It could be because patient was more anxious about their new denture function, comfort and aesthetic. Patient might expect that they could chew similar to their natural teeth as soon as they put on their prosthesis which might not be possible.

This study had shown that expectation of patient in first time denture wearer was more than existing denture wearer. It could be because previous experience of the patient might influence the expectation and satisfaction¹⁷ satisfaction recorded was also more in first time denture wearer than existing denture wearer which might be because they are inexperienced. However statistically significant difference was found in aesthetic and in between two groups. This might be because patients are more concerned about function and comfort rather than aesthetic in contrast with a study by Ellis et.al¹⁸ which proposed that aesthetic had direct initial impact on satisfaction. In our study female participants are more than male participants which could be one of the reasons for significant difference in aesthetic prior to treatment.

The present study had limited sample size therefore couldn't be representative of all the population of Nepal. So, further studies with larger sample size need to be done.

Conclusions

Within the limitations of this study, it can be concluded that the expectations in first time denture wearers is greater than satisfaction. Similarly, in existing denture wearer also

expectation is greater than satisfaction. However, among the two groups, expectation as well as satisfaction was found to be more in first time denture wearers than existing denture wearers. So we recommend that a clinician should discuss with the patients properly regarding the potential problems and help set the realistic expectations before beginning the treatment.

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