



RESEARCH ARTICLE

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ASSESSING THE PROBLEMS ASSOCIATED WITH SATISFACTION OF THE PREVIOUS DENTURE WEARER PATIENT AFTER NEW DENTURE FABRICATION: A QUESTIONNAIRE BASED SHORT STUDY

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ABSTRACT

Statement of problem: The satisfaction of new denture wearers after fabrication of first denture is often studied, but, there are very few studies on the satisfaction of previous denture wearers with new denture and problems associated with it. **Aim:** The aim of this study was to assess the problems associated with satisfaction of the previous denture wearer patient after new denture fabrication. **Materials and method:** 50 patients with past denture experience were included in the study. A questionnaire was given before and after the new denture fabrication. The new denture was fabricated considering the difficulties and the problems associated with past denture. The scores before and after the new denture fabrication were statistically analysed. **Result:** There was statistically significant difference between the score obtained before and after the new denture was made. The main reason for having a new denture was loss of retention followed by broken dentures. **Conclusion:** Previous denture experience and expectations of the patients should definitely be taken into considerations while fabricating a new denture for the patient. Proper counselling is needed for every patient after a denture is delivered.

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INTRODUCTION

In this era of implants and implant supported fixed prostheses, conventional complete dentures are still helping the growing elderly population to restore the esthetics and function, main reasons being cost factor and non surgical procedure. Success of the complete denture depends on the satisfaction of the patients. One of the ultimate goals of prosthetic treatment is the achievement of the patient satisfaction, which is defined as, "patients' cognitively based evaluation of, and affectively based response to the important aspects of the structure, process and result of their service" (Gurdal, 2000). The satisfaction becomes even more difficult with the previous denture wearers. The patients generally expect new dentures to fit and function better than their existing ones, i.e., most patients expect that their new dentures will bring an improvement compared to the existing one.

In a number of studies conducted over the past 30 years, the proportion of full denture patients who were dissatisfied with new and well-made prostheses was between 10% and 15%. It was found that the degree of satisfaction decreased during the first few years after insertion (Ivanhoe, 2002). Quality of mandibular residual ridges, retention and stability of mandibular dentures, accuracy of reproduction of retruded jaw relationship, and patient adaptability are considered powerful determinants of patient satisfaction (Subramanian, 2019). Assessing the satisfaction becomes important so as to improve the denture performance. This questionnaire study aims for assessing the influence of previous denture experience and patient expectations on the satisfaction with the new complete denture. The objectives of this study were to check whether the previous denture experience of patient affects the satisfaction with new denture, to study various problems associated with dentures and to study the expectations of patients from their dentures and dentists as well.

MATERIALS AND METHODS

50 complete denture wearers were included in the study. Only the patients who had previous denture experience were included. When patients reported to the department, a questionnaire was given to the patients regarding the satisfaction with the old denture and the problems with the old dentures. The answers in the questionnaire were based on Likert scale, ranging from points 1 to 5. The expectations of the patients were also taken into considerations. A new denture was fabricated for the patient. All subjects were instructed to wear their dentures during waking hours and to remove them at night. Oral hygiene instructions were provided. All patients were requested to return one week after insertion. Patients were recalled for corrections, if any. On recall after 1 month, a questionnaire was again given to the patients regarding the satisfaction with the new denture. The scores before and after the denture delivery were compared for each patient. Two questions were added in the questionnaire given before new denture fabrication.

) Why do you want a new denture?

) What are your expectations from new denture?

STATISTICAL ANALYSIS

-) Data obtained was compiled on a MS Office Excel Sheet (v 2010, Microsoft Redmond Campus, Redmond, Washington, United States).
-) Data was subjected to statistical analysis using Statistical package for social sciences (SPSS v 21.0, IBM).
-) Descriptive statistics like frequencies and percentage for categorical data, Mean & SD for numerical data has been depicted.

Since the data was graded on increasing order of responses, non-parametric tests have been used for comparisons. Comparison of before vs after responses was done using Wilcoxon Signed rank test (Table 1) and comparison of frequencies of responses before vs after was done using chi square test (Table 2). For all the statistical tests, $p < 0.05$ was considered to be statistically significant, keeping error at 5% and error at 20%, thus giving a power to the study as 80%

RESULTS

The statistical analysis showed statistically significant or highly significant difference for scores of each question before and after new denture fabrication when compared using WSR test (Fig 1). Comparison in before vs after scores using chi square test also resulted in statistically significant difference (Fig 2). The consideration of expectations of patients from their new dentures and the common problems faced by them while using old dentures played an important role in patient satisfaction. The main reason for having a new denture was found to be loss of retention followed by broken dentures. In patients who were not satisfied with the old dentures, some had problem mainly with retention, and were satisfied with the new denture where retention was improved. Some patients had severely resorbed ridges. Some patients were not being able to use dentures due to gag reflex while some patients had problems with the esthetics and thickness of the denture.

| QUESTIONNAIRE : | | | | |
|---|------------------|---------------------|--------------|-------------------|
| 1. HOW WAS THE COMFORT WITH OLD DENTURE? | | | | |
| 1. VERY UNCOMFORTABLE | 2. UNCOMFORTABLE | | | |
| 3. OK | 4. COMFORTABLE | 5. VERY COMFORTABLE | | |
| 2. HOW GOOD WAS THE APPEARANCE OF OLD DENTURE ? | | | | |
| 1. VERY POOR | 2. POOR | 3. OK | 4. GOOD | 5. VERY GOOD |
| 3. HOW WAS YOUR CHEWING CAPACITY WITH OLD DENTURES? | | | | |
| 1. VERY POOR | 2. POOR | 3. OK | 4. GOOD | 5. VERY GOOD |
| 4. HOW EASY IT WAS TO CHEW HARD FOOD ? | | | | |
| 1. VERY DIFFICULT | 2. DIFFICULT | 3. OK | 4. EASY | 5. VERY EASY |
| 5. HOW EASY IT WAS TO DRINK LIQUID ? | | | | |
| 1. VERY DIFFICULT | 2. DIFFICULT | 3. OK | 4. EASY | 5. VERY EASY |
| 6. HOW WAS THE FIT OF THE DENTURE ? | | | | |
| 1. VERY POOR | 2. POOR | 3. OK | 4. GOOD | 5. VERY GOOD |
| 7. HOW WAS THE EASE OF SPEECH? | | | | |
| 1. VERY DIFFICULT | 2. DIFFICULT | 3. OK | 4. EASY | 5. VERY EASY |
| 8. HOW WAS THE EASE OF DENTURE CLEANING? | | | | |
| 1. VERY DIFFICULT | 2. DIFFICULT | 3. OK | 4. EASY | 5. VERY EASY |
| 9. HOW CONFIDENT YOU USED TO FEEL WHILE WEARING OLD DENTURE? | | | | |
| 1. VERY LESS | 2. LESS | 3. OK | 4. CONFIDENT | 5. VERY CONFIDENT |
| 10. HOW WAS THE SATISFACTION WITH OLD DENTURE? | | | | |
| 1. VERY POOR | 2. POOR | 3. OK | 4. GOOD | 5. VERY GOOD |

Questionnaire given to assess the satisfaction of patients with denture

The most common expectation of patient from their new denture was related to retention of the denture, followed by esthetics and comfort. After insertion of new dentures, the satisfaction of the patients was improved. Some patients who were not completely satisfied reported the problem of increased height of teeth, which might be due to the attrition in teeth of old denture. Counselling was needed for those patients. 2 patients were not satisfied as they had gag reflex due to dentures in spite of proper posterior border extension. A couple of patients were not using dentures as they were adapted to their old dentures and found it difficult to get adapted to new dentures. They were counselled properly and were satisfied after 1 month recall.

DISCUSSION

The denture problems associated with the new denture wearers are often discussed. So, in this study, an attempt was made to highlight the problems associated with previous denture wearers and the effect of considering the expectations of the patients while fabricating new denture. The study showed that the main problem is with retention of the denture. Follow up appointments should be planned well as bone resorption can lead to loss of retention, which can lead to dissatisfaction of the patient. Some patients reported with the problem regarding more height of the teeth.

Table 1. Comparison of before vs after values (n=50) using WSR

| Variables | Time | Mean | Std. Deviation | Std. Error Mean | Mean diff | SE of diff | Median | Z value | p value |
|---------------------------|--------|-------|----------------|-----------------|-----------|------------|--------|---------|---------|
| | | | | | | | | | |
| Comfort | Before | 4.06 | .890 | .126 | -.360 | 1.025 | 4 | -2.101 | 0.036* |
| | After | 4.42 | 1.012 | .143 | | | 5 | | |
| Ease of chewing | Before | 3.88 | .940 | .133 | -.440 | 1.013 | 4 | -2.777 | 0.005** |
| | After | 4.32 | .913 | .129 | | | 5 | | |
| Chewing hard food | Before | 3.54 | .862 | .122 | -.340 | .848 | 4 | -2.681 | 0.007** |
| | After | 3.88 | .895 | .127 | | | 4 | | |
| Ease of cleansing denture | Before | 4.08 | .752 | .106 | -.360 | .776 | 4 | -2.993 | 0.003** |
| | After | 4.44 | .812 | .115 | | | 5 | | |
| Appearance | Before | 4.02 | .979 | .138 | -.420 | 1.197 | 4 | -2.061 | 0.039* |
| | After | 4.44 | 1.053 | .149 | | | 5 | | |
| Speech | Before | 3.86 | .926 | .131 | -.500 | 1.129 | 4 | -2.806 | 0.005** |
| | After | 4.36 | 1.005 | .142 | | | 5 | | |
| Liquid | Before | 3.86 | 1.010 | .143 | -.540 | 1.073 | 4 | -3.182 | 0.001** |
| | After | 4.40 | .926 | .131 | | | 5 | | |
| Fit of denture | Before | 4.02 | 1.000 | .141 | -.680 | .978 | 4 | -4.040 | 0.000** |
| | After | 4.70 | .707 | .100 | | | 5 | | |
| Confidence | Before | 3.88 | 1.023 | .145 | -.500 | 1.182 | 4 | -2.545 | 0.011* |
| | After | 4.38 | 1.067 | .151 | | | 5 | | |
| Satisfaction | Before | 3.76 | 1.021 | .144 | -.500 | 1.182 | 4 | -2.580 | 0.010* |
| | After | 4.26 | 1.046 | .148 | | | 5 | | |
| Total score | Before | 38.96 | 8.273 | 1.170 | -4.640 | 8.944 | 40 | -3.762 | 0.000** |
| | After | 43.60 | 8.659 | 1.225 | | | 48 | | |

* = statistically significant difference (p<0.05)

** = statistically highly significant difference (p<0.01)

= non significant difference (p>0.05)

Table 2. Comparison of frequencies of responses before vs after with chi-square test

| Question | Chi-square value | p value |
|---------------------------|------------------|---------|
| comfort | 20.581 | 0.000** |
| Ease of chewing | 10.266 | 0.036* |
| Chewing hard food | 5.863 | 0.210# |
| Ease of cleansing Denture | 11.693 | 0.009** |
| appearance | 18.428 | 0.000** |
| speech | 20.910 | 0.000** |
| Liquid | 12.717 | 0.013* |
| Fit of denture | 19.915 | 0.001** |
| Confidence | 20.478 | 0.000** |
| Satisfaction | 15.655 | 0.004** |

There was a statistically significant / highly significant difference seen for the frequencies between the time intervals (p<0.01, 0.05)

It was due to the attrition of teeth in old denture. Patients were explained properly about it. Counselling helped in those patients. Patients who had gag reflex were counselled. A controlled breathing method was advocated for them. It helped in those patients quiet well (Prosthetic management of management of gagging, 2017). According to some studies, Psychological factors can affect patients' acceptance of a denture, and therefore a personality assessment could be beneficial in predicting satisfaction with a completed denture

(AlQuran) so, along with all the other factors, the effect of personality of patient on denture satisfaction can also be studied. Residual ridge resorption is a chronic, continuous process that is more rapid after tooth extraction. The residual alveolar ridge is highest immediately after extraction, and support for a mandibular CD should be optimal. Most likely due to the long period of neuromuscular adaptation (and to the possible undercutting of residual ridges immediately after extraction), mandibular dentures move and damage oral



Fig 1. Graph showing comparison of scores before and after using WSR test

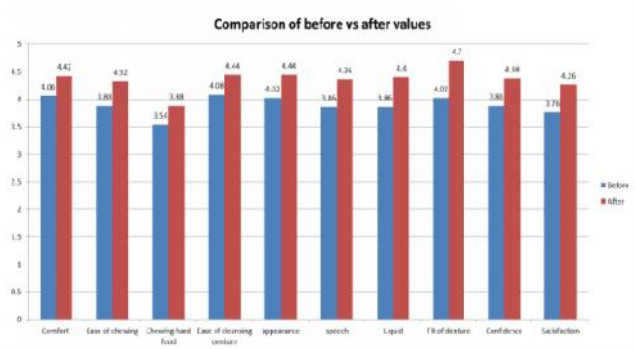


Fig 2. Graph showing comparison of scores before and after using chi square test

mucosa, thus causing discomfort, unfavorable retention, and low levels of chewing ability and general satisfaction (Asja, 2003). This is why the retention decreases with time. Periodic follow ups can help for this upto some extent. Esthetics, retention, speaking ability, chewing were the main criterias based on which patient satisfaction was found to be dependent. These things should be given main importance while preparing new dentures. Along with this, proper counselling is mandatory. Clinician know that patient satisfaction is not only based on the technical quality of the dentures but also psychological and emotional factors play a great role. For such patients, the dentist must listen to the patient and communicate with them efficiently (landesman 1997)

CONCLUSION

-) Previous denture experience and expectations of the patients should definitely be taken into considerations while fabricating a new denture for the patient.
-) Proper counselling is needed for every patient after a denture is delivered.

Glossary of Abbreviations:

-) **SPSS:** Statistical Package For Social Sciences
-) **SD:** Standard Deviation
-) **WSR:** Wilcoxon Signed Rank test

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