

## Dental prosthetic status and prosthetic satisfaction of institutionalized elderly population in Sri Ganganagar city, Rajasthan, India

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### Abstract

**Background:** Both function and aesthetics are impaired with the loss of teeth. It is possible to restore both of these functions by the means of artificial dental prosthesis. Mastication and speech rehabilitation along with building up of psychological confidence is necessary for the success of prosthetic treatment. Hence; we planned the present study to assess the satisfaction of the complete denture wearers delivered in a tertiary health care centre.

**Materials & methods:** The present cross-sectional study included quantification of 80 denture wearing patients with the purpose of assessing the impact of these dentures on the biological, psychological and social health of the patients. For the assessment of the impact of these dentures on the patients, a questionnaire was framed using Oral Health Impact Profile (OHIP) which consisted of fourteen questions. Five categories were allotted to the each of the question based on the five-point Likert item scale. All the answers were collected and summarized. Statistical assessment of all the results was performed by SPSS software version 18.0.

**Results:** Out of 80, 61.3 percent of the cases were of maxillary denture cases while remaining 38.7 percent of the cases were of mandibular denture. Out of all maxillary denture cases, 61 subjects were using their dentures whereas among mandibular denture cases, 23 cases were using dentures. More problems were found to be associated with mandibular denture wearers in comparison to the subjects wearing maxillary complete dentures.

**Conclusion:** Quality of life of the patients receiving artificial dental prosthesis is very minimally affected by upper denture.

**Keywords:** complete denture, quality, satisfaction

### 1. Introduction

Impairment of both function and aesthetics occur with the loss of teeth. Restoration of these functions is possible by the means of artificial dental prosthesis. Although preventative dentistry protects the teeth from future decay, the demand of prosthodontic treatment is increasing at a rapid phase in developed countries especially among geriatric population [1-3]. In the coming decades of time, it is expected that the ratio of elderly population over 65 years of age to rise up to 50 percent of the total population [4]. There are significant population of edentulous patients even in areas of the world subjected to high standard of dental health care [5]. As per the data given by the World Health Organization (WHO) Global Oral Data Bank, in Canada, Finland and United Kingdom, the prevalence of edentulism among subjects older than 65 years of age are reported to be 58, 41 and 46 percent respectively [1]. Over the years, there has been significant improvement in the techniques of fabrication of complete dentures; however, in relation to the psychological impact of the patient receiving artificial dental prosthesis, very little emphasis has been paid. In predicting the satisfaction of the patients after receiving complete dentures, an important role is played by Psychological factors [6]. For the success of prosthetic treatment, other contributing factors include mastication and speech [7]. Hence; we planned the present study to assess the satisfaction of the complete denture wearers delivered in a tertiary health care centre.

### 2. Materials & methods

The present cross-sectional study was conducted the department of Prosthodontics (Maharaja Ganga Singh Dental College, Sri Ganganagar, Rajasthan) and included quantification of complete denture wearing patients from April 2017 to July 2017 with the purpose of assessing the impact of these dentures on the biological, psychological and social health of the patients. A total of 80 dentures cases were analyzed. Ethical approval was taken from the institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. Inclusion criteria for the present study included:

- Patients who have received upper and/or lower complete denture,
- Patients more than 50 years of age,
- Patients without history of any other systemic illness,
- Patients without any known drug allergy

For the assessment of the impact of these dentures on the patients, a questionnaire was framed using Oral Health Impact Profile (OHIP) which consisted of fourteen questions. OHIP consisted of questions and topics related to the functional limitation, psycho-social discomfort, any form of disability related to physical fitness, psychological stress or pain related to use of these dentures. Following categories were allotted to the each of the question based on the five-point Likert item scale: [8]

- Category 0: Never,

- Category 1: almost never,
- Category 2: sometimes,
- Category 3: almost always,
- Category 4: always

All the answers were collected and summarized. Statistical assessment of all the results was performed by SPSS software version 18.0. One Way Anova, t- tests, Chi-square test and multivariate regression curves were used for the assessment of level of significance with Bonferroni correction.

### 3. Results

A total of 80 denture cases were included in the present study. Out of 80, 62 were complete maxillary denture cases while 18 were complete mandibular denture cases (Fig 1). Out of all maxillary denture cases, 61 subjects were using their dentures whereas among mandibular denture cases, 23 cases were using dentures. More problems were found to be associated with mandibular denture wearers in comparison to the subjects wearing maxillary complete dentures (Table 1).

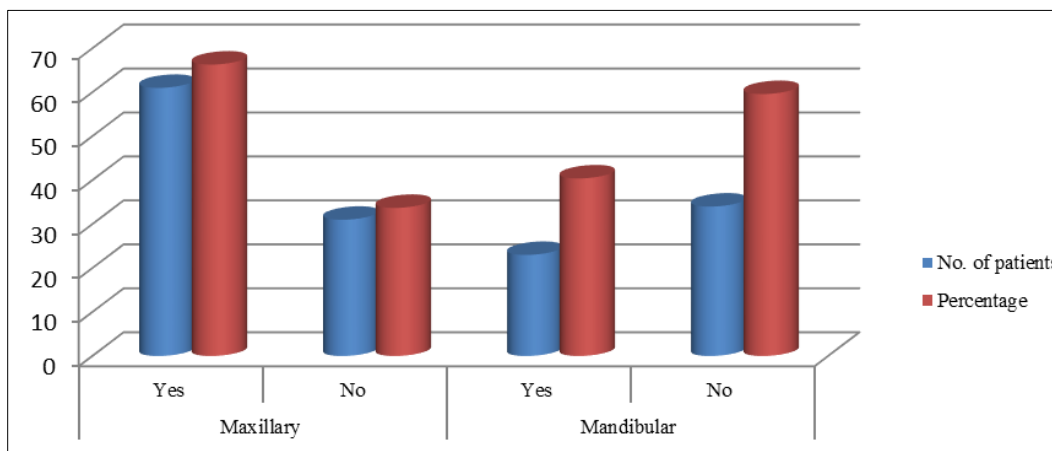


Fig 1: Details of the patients wearing dentures

Table 1: Study characteristic of the subjects wearing dentures

Parameter		Maxillary denture (n)	Mandibular denture (n)
Trouble in pronouncing of the words	Never	44	17
	Almost never	2	2
	Sometimes	8	1
	Almost always	3	2
	Always	0	1
Feeling of worsening of sense of taste	Never	50	18
	Almost never	2	2
	Sometimes	3	3
	Almost always	2	0
	Always	0	0
Feeling of painful aching in mouth	Never	44	9
	Almost never	9	3
	Sometimes	3	5
	Almost always	0	4
	Always	0	3
Feeling uncomfortable while eating foods	Never	42	12
	Almost never	5	3
	Sometimes	4	2
	Almost always	4	1
	Always	2	5
Feeling self-conscious	Never	45	13
	Almost never	1	3
	Sometimes	5	3
	Almost always	5	1
	Always	1	3
Feeling of tense	Never	51	10
	Almost never	3	3
	Sometimes	4	2
	Almost always	3	1
	Always	2	1
Unsatisfactory diet	Never	50	10
	Almost never	2	0
	Sometimes	2	0
	Almost always	2	5
	Always	5	4

Has had to interrupt meals	Never	52	12
	Almost never	2	2
	Sometimes	2	7
	Almost always	0	1
	Always	1	1
Difficulty in relaxation	Never	54	12
	Almost never	0	1
	Sometimes	4	0
	Almost always	3	3
	Always	0	3
Bit embarrassed feeling	Never	47	14
	Almost never	5	2
	Sometimes	4	2
	Almost always	4	1
	Always	1	0
Irritability with other people	Never	55	20
	Almost never	0	0
	Sometimes	1	1
	Almost always	1	1
	Always	0	1
Difficulty in doing usual jobs	Never	57	15
	Almost never	2	1
	Sometimes	2	1
	Almost always	0	2
	Always	0	0
Totally unable to function	Never	57	15
	Almost never	0	0
	Sometimes	3	2
	Almost always	1	1
	Always	0	1
Life less satisfying feeling	Never	59	10
	Almost never	0	5
	Sometimes	0	2
	Almost always	1	1
	Always	1	1

#### 4. Discussion

The well-being of the patients and satisfaction of their life is influenced by the presence or absence of complete edentulism [9]. Also, the health-related quality of life (OHRQoL) could be adversely affected by the use of complete dentures [10]. No specific and definite approach has been developed so far, that could assess the exact effect of conventional complete dentures on the OHRQoL [11]. Hence; we planned the present study to assess the satisfaction of the complete denture wearers delivered in a tertiary health care centre. In the present study, we observed that upper denture cases are found to affect quality of life of the subjects to minimal level in comparison with the mandibular denture (Table 1). Trouble in pronouncing of word was more associated with mandibular dentures in comparison to the maxillary denture (Table 1). Our results were in correlation with the results obtained by Veronez FC *et al.* who observed similar findings in their study [8]. The relationship between different complete denture parameters and satisfaction of the patients was assessed by Alfadda SA. They randomly assessed 33 edentulous patients who underwent prosthetic rehabilitation by conventional complete dentures. Seven clinical criteria's were set which were used for evaluating the dentures and for this purpose, they appointed three independent investigators. A validated denture satisfaction scale was formed which was filled out by all the patients. For identification of the possible correlations, the authors used Pearson product-moment correlation. They observe that majority of the subjects were either "reasonably

satisfied" or "very satisfied" by their prosthetic dentures. Among the subjects receiving both mandibular and maxillary dentures, the authors observed higher satisfaction levels. They also observed positive correlation between the overall satisfaction levels of the patient and mandibular dentures stability and retention. However, they couldn't observe any significant correlation between the esthetic lip support and the maxillary stability and retention with participants' overall satisfaction score. From the results, they concluded that most important determinant of the satisfaction of the patient was mandibular denture [12]. Fenlon MR *et al.* investigated the quality of newly fabricated and their correlation with satisfaction of the denture wearers after two years. They recruited 417 patients in their two year study and assessed their quality of denture and level of satisfaction by means of a questionnaire. Questionnaire was sent twice to all the subjects. Initially, assessment was done after three months of delivering the denture followed by second assessment done after two years of wearing of denture. They didn't observe any significant association between the denture quality and level of patient satisfaction after two years of wearing of denture. From the results, the authors concluded that in determination of patient satisfaction, clinical quality of the denture was not an important factor [13]. Celebić A *et al.* evaluated the factors associated with satisfaction of the patients wearing complete dentures. They analysed a total of 222 patients who were complete denture wearers. They divided their questionnaire into three parts. Both the dentist

and the patients completed the filled the questionnaire form separately. The answers to the questionnaire were based on the scale of 1 to 5 score with 1 score for dissatisfaction and 5 score for excellent. In relation to the quality of the complete denture, most of the patients were satisfied. Less than 8 percent of the patients were unsatisfied with their prosthetic denture. In relation to the aesthetic considerations, more satisfaction to the complete denture was seen in patients with comparatively lower education qualification. More satisfaction of the maxillary complete denture was observed in younger patients wearing dentures for the first time. From the results, they concluded that educational qualification, self-perception and socio-economic status of the patients were the different factors related to satisfaction of the patients [14]. Veronez FC *et al.* evaluated the satisfaction of the patients wearing complete dentures delivered by the public health care network. They conducted the survey using a 14 questionnaire profile which evaluated the social status, physical pain and psychological disability of the patients. They analyzed a total of 247 complete denture patients with more than 50 years of age. Qualities of life of the patients were affected minimally by the maxillary complete dentures. From the results, they concluded that for minimizing the damage caused on the patient's health, proper denture follow-up protocols should be formulated.<sup>8</sup> Ellis JS *et al.* evaluated the level of satisfaction of the patients and oral health-related impacts on the quality of life of the subjects who underwent prosthetic rehabilitation by complete dentures. They analyzed 40 patients who belonged to the age group of 55 years to 85 years. All these patients were assigned to receive upper and lower. 100-mm visual analogue scales were used for rating the satisfaction level of the patients before the starting of the treatment and after 30 days of the delivery of the newly formed denture. An Oral Health-Related Impacts on Quality of Life questionnaire (OHIP-20) was framed and was used for assessment the quality of life of the patients. Similar satisfaction was observed in both the groups of the patients. In relation to the functional limitation and physical and psychological disability, they observed significant improvement in the OHIP domains in both the study groups. From the results, they concluded that an overall improvement in the oral health related quality of life occurs with the provision of new dentures [15].

Awad MA *et al.* compared the satisfaction levels and quality of life related to their oral health of elderly patients receiving mandibular two-implant over-dentures and conventional complete dentures. They analyzed a total of 60 edentulous patients and divided them randomly into two study groups. One groups consisted of patients receiving maxillary and mandibular conventional dentures while the other group included patients who received overdenture supported by two implants with ball retainers. Level of the satisfaction of the patients was assessed twice. Initially it was done before the starting of the treatment and secondarily, it was done 2 months after the delivery of the patients. A significantly better result in patients treated with mandibular two-implant overdentures in relation to general satisfaction of the patients when assessed two months after the delivery of the denture. From the results, the authors concluded that better functional performance and quality of life related to oral health occurs in patients receiving mandibular two-implant overdentures [16].

## 5. Conclusion

From the above results, the authors concluded that quality of life of the patients receiving artificial dental prosthesis is very minimally affected by upper denture. However, mandibular dentures do have a significant effect on the self-consciousness of the patients. However, future studies are required for further exploring various follow-up steps that could be taken for improving the quality of life of patients receiving artificial denture prosthesis.

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