



## LEVEL OF SATISFACTION AMONG PATIENTS WEARING MAXILLARY COMPLETE DENTURE

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### ABSTRACT:

**Objective:** To compare level of satisfaction among patients wearing maxillary complete denture using closed and open mouth impression.

**Methodology:** Seventy patients with endentulism were selected and divided in two equal groups, group A had maxillary complete denture using closed mouth impression while group B had maxillary complete denture using open mouth impression. Level of satisfaction was assessed between both groups.

**Results:** It was notable that 24 (68.6%) patients in group A were very satisfied with denture comfort, while 12 (34.3%) in group B were moderately satisfied. ( $P = 0.01$ ). Speech satisfaction was similar between groups ( $P = 0.39$ ). Despite no notable difference in mastication satisfaction, 26 (74.3%) patients in group B were very satisfied with its efficiency, whereas 13 (37.1%) in group A were moderately satisfied ( $P = 0.06$ ). A notable difference was found between 28 (80%) patients in group A and 18 (51.4%) in group B in denture retention satisfaction ( $P = 0.03$ ). Denture satisfaction was similar in both groups.

**Conclusion:** Maxillary full dentures created with closed mouth impression technique are better than open mouth approach for comfort, denture retention, and speech quality, but overall satisfaction was not different.

**Keywords:** Maxillary complete dentures, Satisfaction, Closed mouth impression, Open mouth impression

## **INTRODUCTION:**

Dental implants are surgically placed into the jaw bone to hold dentures, crowns, bridges, and other types of prosthetics in place<sup>1</sup>. Osseointegration, the process by which a load-bearing implant and the surface of living bone form a direct structural and functional link, is the foundation of contemporary dental implants. A number of conditions, including edentulous and reconstruction of the head and neck, have benefited from the utilization of osseointegrate implants<sup>2</sup>. For the purpose of retaining auricular mandibular, maxillary, nasal, and orbital implants as well as bone-anchored hearing aids, dental implants are utilized. Before a dental prosthesis is connected to an implant, the fixture must be installed so that the implant can osseointegrate. Before a dental prosthesis such as a crown, dentures, or abutment can be implanted, a certain amount of healing time must pass for osseointegration to take place<sup>3</sup>. The traditional method of implant dentistry involves two distinct procedures: the extraction of the tooth and its subsequent insertion in the jaw<sup>4</sup>.

Dentures, or prosthetic appliances, are essential for restoring oral function, aesthetics, and quality of life in patients who have lost their natural teeth. Denture retention is a critical aspect that affects the effectiveness and comfort of denture wearers. It refers to the capacity of dentures to firmly stay in place during different oral activities<sup>5</sup>. Optimal precision and efficiency throughout the whole manufacturing process are essential for a high-quality full denture. Resorption might be accelerated by defective dentures<sup>6</sup>. An accurate impression of the denture-bearing area and the relevant anatomical markers is the first step that determines precision<sup>7</sup>. The technique used, the substance used, and the total amount of material all have a role in determining the final impression quality<sup>8</sup>. Several investigations have shown that the method used affects the dimensional precision of the impression material<sup>9,10</sup>. A misaligned prosthesis could be the result of laboratory mistakes brought on by erroneous impressions, which in turn affect the quality of the prosthesis itself<sup>11</sup>. Because the patient-denture connection is long-term and can only be sustained if the patient has few, if any, complaints about the denture, it is crucial that the patient be satisfied with it. The comfort or pain level of the user, the prosthesis's appearance, and how easily the user can chew or speak are all elements in the user's overall satisfaction with the prosthesis. Sometimes it takes time for the tissues in the mouth to adjust to a new full denture<sup>12</sup>.

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## **MATERIAL AND METHODS:**

Seventy patients were selected for this comparative cross-sectional study at Department of Dentistry Liaquat University of Medical & Health Sciences, Jamshoro Hyderabad, Pakistan. from July 2023 to December 2023 after taking ethical approval from the hospital. Patients selection criteria was age 45 to 70 years of either gender with endetulism. Patients having bony exostosis ridges were excluded. The researcher documented the patient's initial impressions using alginate impression material (CA37, produced by Cavex Inc., Holland).

Stone castings were produced. The fabrication of individual trays was carried out using self-cured acrylic resin, namely Self Polymerizing Powder, which was made by Deven International in the United Kingdom. Subsequently, secondary impressions were documented within the specialized trays utilizing elastomeric impression fluid. Group A patients were administered maxillary full dentures that were manufactured using the closed mouth impression technique. In Group A, patients were provided with upper and lower jaw record bases that had a flat-wax occlusal rim at a specific vertical dimension. These bases were placed in the patients' mouths and they were asked to close their jaw, suck, swallow, and move their lips while recording the final impression.

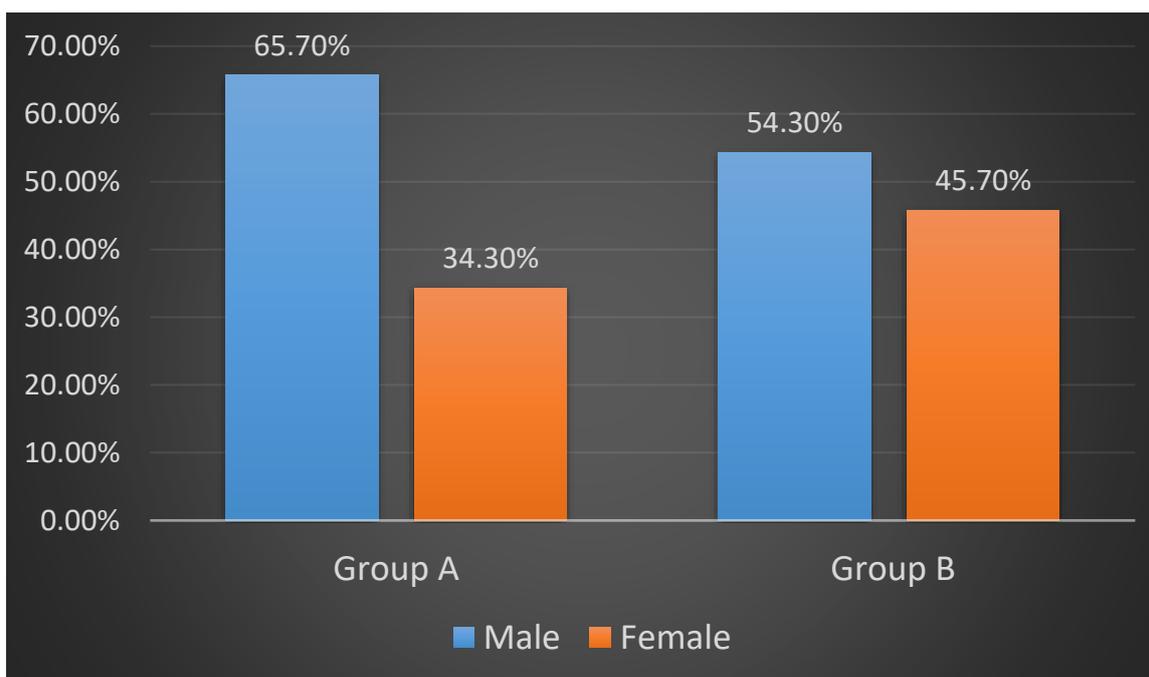
Group B, often known as the control group, consisted of patients who received maxillary dentures made using the open mouth impression technique. This approach entailed placing a custom tray in the patient's mouth and the operator manually manipulating the musculature responsible for oral functions. Following the bite registration and teeth trial, the patients were given dentures and instructed to report any post-insertion complaints.

Patients were weekly assessed for six months, assessment was made on a 3 point Likert scale questionnaire regarding general comfort, denture retention satisfaction, mastication satisfaction, speech and overall satisfaction, 3 presented very satisfied, 2 presented moderately satisfied while 1 presented not satisfied.

SPSS 23 was utilized for analyzing the data. Chi Square test was used for comparison between both groups keeping value of P significant at 0.05.

**RESULTS:**

Seventy patients were enrolled in this study divided in two groups equally, group A patients underwent closed mouth impression technique while group B patients underwent open mouth impression technique. Mean age in group A was  $59.34 \pm 7.68$  years while  $56.34 \pm 7.67$  years in group B, no notable difference was observed between both groups ( $P = 0.11$ ). Frequency of male patients in group A was 23 (65.7%) while frequency of female patients was 12 (34.3%), in group B the frequency of male patients was 19 (54.3%) while frequency of female patients was 16 (45.7%). In group A 24 (68.6%) patients were very much satisfied with general comfort of the dentures while only 12 (34.3%) patients in group B were moderately satisfied with overall comfort, notable difference was observed. ( $P = 0.01$ ) (Table 1). Speech satisfaction exhibited no notable difference between both groups ( $P = 0.39$ ) (Table 2). Although no notable difference was seen in terms of satisfaction regarding mastication, however 26 (74.3%) patients in group B showed that they were very satisfied with efficiency of mastication while 13 (37.1%) patients in group A were moderately satisfied with mastication. ( $P = 0.06$ ) (Table 3). About 28 (80%) patients in group A were very satisfied with their denture retention while 18 (51.4%) in group B were very satisfied, there difference was notably significant ( $P = 0.03$ ) (Table 4). No notable difference was seen in the overall satisfaction of dentures in both groups (Table 5).



**Table 1 Comparison of general comfort between both groups**

		General comfort			Total	P value
		Very satisfied	Moderately satisfied	Not satisfied		
Groups	Group A (Closed mouth technique)	24 68.6%	6 17.1%	5 14.3%	35 100.0%	0.01
	Group B (Open mouth technique)	12 34.3%	14 40.0%	9 25.7%	35 100.0%	
Total		36 51.4%	20 28.6%	14 20.0%	70 100.0%	

**Table 2 Comparison of speech satisfaction between both groups**

		Speech satisfaction			Total	P value
		Very satisfied	Moderately satisfied	Not satisfied		
Groups	Group A (Closed mouth technique)	18 51.4%	14 40.0%	3 8.6%	35 100.0%	0.39
	Group B (Open mouth technique)	16 45.7%	12 34.3%	7 20.0%	35 100.0%	
Total		34 48.6%	26 37.1%	10 14.3%	70 100.0%	

**Table 3 Comparison of mastication satisfaction between both groups**

		Mastication satisfaction			Total	P value
		Very satisfied	Moderately satisfied	Not satisfied		
Groups	Group A (Closed mouth technique)	17 48.6%	13 37.1%	5 14.3%	35 100.0%	0.06
	Group B (Open mouth technique)	26 74.3%	5 14.3%	4 11.4%	35 100.0%	
Total		43 61.4%	18 25.7%	9 12.9%	70 100.0%	

**Table 4 Comparison of denture retention satisfaction between both groups**

		Retention satisfaction			Total	P value
		Very satisfied	Moderately satisfied	Not satisfied		
Groups	Group A (Closed mouth technique)	28 80.0%	6 17.1%	1 2.9%	35 100.0%	0.03
	Group B (Open mouth technique)	18 51.4%	12 34.3%	5 14.3%	35 100.0%	
Total		46 65.7%	18 25.7%	6 8.6%	70 100.0%	

**Table 5 Comparison of overall satisfaction between both groups**

		Overall satisfaction			Total	P value
		Very satisfied	Moderately satisfied	Not satisfied		
Groups	Group A (Closed mouth technique)	12 34.3%	19 54.3%	4 11.4%	35 100.0%	0.59
	Group B (Open mouth technique)	10 28.6%	18 51.4%	7 20.0%	35 100.0%	
Total		22 31.4%	37 52.9%	11 15.7%	70 100.0%	

**DISCUSSION:**

It has always been difficult to provide rehabilitation services to patients who are edentulous. Edentulism, a condition that can have both functional and psychosocial repercussions, can be remedied by the use of removable dentures. It is possible that the effectiveness of this treatment modality will be influenced not only by the patient's acceptance of his new dentures, but also by his capacity to use them, which is largely dependent on the quality of the dentures that he is wearing<sup>12</sup>. Therefore, the success of conventional complete denture therapy may be influenced by a number of factors, including the patient's age, personality, previous experience wearing dentures, expectations,

aesthetics, residual ridge form and anatomy, denture quality, the method of its construction, the dentist's experience, and the relationship between the dentist and the patient.<sup>13</sup>

Patients' acceptance of their new dentures may be influenced by a number of factors, one of which is the level of experience had by the dentist. There are a number of doctors and patients who are of the opinion that the experience of the dentist could have an impact on the success of dental treatments; nonetheless, the findings and conclusions regarding this matter are inconclusive.<sup>14, 15</sup>

When it comes to complete dentures, the success of therapy is frequently evaluated differently by patients and dentists individually. According to the findings of a study, ten percent of the participants stated that they were dissatisfied with the detachable dentures they had received. In light of this, the therapeutic success of denture treatment can be evaluated based on the level of happiness experienced by the patient<sup>16</sup>.

Our trial was carried out on 70 patients presenting for deployment of maxillary complete denture. We distributed our patients equally in two groups, group A patients underwent closed mouth impression technique while group B patients underwent open mouth impression technique. Overall patients in both groups aged 45 to 70 years. In both groups we observed male frequency was higher but no notable difference was seen in terms of age and gender.

We assessed the patients after six months of follow up about their views and perception of satisfaction about their dentures. Patients who had closed mouth impression technique were very satisfied with their dentures in terms of overall general satisfaction while only 14.3% showed that they were not satisfied, patients who had open mouth impression technique showed moderate satisfaction while 25.7% reported that they were not satisfied, similar observations have been exhibited by a Pakistani study which showed patients with closed mouth impression technique showed higher levels of satisfaction.<sup>17</sup> The quality of speech was rated as moderate in over 80% patients in group A while less than 80% in group B, this is also similar to the aforementioned Pakistani study.<sup>17</sup> A few other studies have also reported similar observations, they reported that patients with closed mouth impression exhibited better speech satisfaction.<sup>16, 18</sup>

Regarding the dental retention we observed that not a single patient in group A reported that they were not satisfied, while 81% reported they were very satisfied with retention of the denture, similar observation has been reported by the aforementioned study conducted in Pakistan.<sup>17</sup> In group B 74% patients showed that they were very satisfied with their quality of chewing while only 48.6% patients in group A reported higher satisfaction, similar observation has been reported by a study which showed that mastication was highly effective in open mouth impression group in their trial.<sup>18</sup> Our results showed that the overall satisfaction was better in group A which underwent the closed mouth impression technique than group B which underwent open mouth impression technique but the difference was not notable however certain functions were notably better in group A such as dental retention and general comfort wearing the maxillary complete dentures.

## **CONCLUSION:**

We conclude that maxillary complete dentures made with closed mouth impression technique are superior to open mouth technique in terms of patients' general comfort, denture retention and quality of speech, however no notable difference was seen in overall satisfaction of the dentures between both groups.

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