

Comparative Evaluation of Oral Stereognostic Ability of Dentulous and Edentulous Population.

Reecha Gupta¹, Aditi Sharma², Randhir Singh³

¹Professor, Department of prosthodontics, IGGDC, Jammu, India.

²Lecturer, Department of prosthodontics, IGGDC, Jammu, India.

³Senior Resident, Department of prosthodontics, IGGDC, Jammu, India.

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ABSTRACT

Background: The aim of the study was to determine the oral stereognostic ability of completely edentulous individuals through identification of different forms. **Methods:** Twenty edentulous subjects were selected for the study, 5 large and 5 small geometrical forms were selected and placed intraorally and percentage identification was tabulated. **Results:** The mean percentage of the correct identification of large forms (91.64±8.71) and the mean percentage of correct identification of the small forms (76.27±11.58), using Student independent 't' test, statistically significant difference was found between the two values (p<0.05). **Conclusion:** the discriminating ability of edentulous and dentulous was not statistically different, although the differences between large and small forms were significant.

Keywords: Oral stereognosis, denture satisfaction, edentulous.

INTRODUCTION

Today the patient is more educated, well informed and has higher expectations, about the treatment received. Still the ability to predict patient's performance with complete denture is difficult. Several investigators have reported that the successful adaption to complete dentures may be predicted by oral stereognostic tests.^[1,2] Although this statement is still controversial, where on one hand investigators believe that, patients with high scores had more complaints in the post-insertion phase, whereas, patients with low scores had fewer or no complaints.^[3-5] On the other hand Van Aken Van Aken et al concluded with no such relationship.^[6]

Oral stereognosis is defined as the appreciation of the form of objects, intraorally, through oral manipulation the oral stereognosis test consists of placing objects into the mouth without being seen by the patient and having the patient identify the form. An individual perceives the shapes of the objects by the effective use of tongue. A correct identification of the form of the object is recorded as a score, which indicates that the patient is

receiving accurate information from his sensory feedback mechanism. Very few studies have been conducted comparing oral stereognostic abilities of both dentulous and edentulous individuals belonging to different age groups. The present study was conducted to determine the oral stereognostic ability of completely edentulous individuals through identification of different forms and compare it with the stereognostic ability of dentulous subjects.

MATERIALS AND METHODS

This study was conducted in department of prosthodontics, Indira Gandhi Government Dental College, Jammu. It included edentulous patients aged (52-68 years) visiting the outpatient department of prosthodontics. Patients were explained about the study and their informed consent was obtained. Patients who had deviation in the mandibular movement and any temporomandibular joint dysfunction were excluded from the study. For assessing the oral stereognosis five large and five small samples in the shape of a triangle, a square, a circle, a rectangle and a semi-circle were fabricated with heat cure resin. All the test forms were sterilized before use and the decontaminated shapes were kept out of the sight of the subjects. Test specimen were randomly selected and placed in patients mouth with eyes closed and were asked to identify the form.

Name & Address of Corresponding Author

Dr. Randhir Singh
Senior Resident,
Department of prosthodontics,
IGGDC,
Jammu, India.

RESULTS

Table 1: Comparison of the correct identification of the stereognostic forms in the control group.

Controls	Percentage of correct identification of small forms	Percentage of correct identification of large forms	Total percentage of correct identification of the forms
1	74.33	93.33	83.83
2	100	100	100
3	66.66	100	83.33
4	74.33	97.66	85.995
5	66.66	80	73.33
6	66.66	84.33	75.495
7	93.33	100	96.665
8	66.66	81.33	73.995
9	66.66	82.33	74.495
10	71.33	93	82.165
11	66.66	85.33	75.995
12	66.66	100	83.33
13	93.33	100	96.665
14	74.33	93.33	83.83
15	66.66	80	73.33
16	66.66	80	73.33
17	82.33	88	85.165
18	74.33	93.33	83.83
19	100	100	100
20	93.33	100	96.665
Mean	76.5455	91.5985	84.072
S.D	12.36546	8.084403	9.378584

Table 2: Comparison of the correct identification of stereognostic forms in the edentulous patients.

Patients	Percentage of correct identification of small forms	Percentage of correct identification of large forms	Total percentage of correct identification of the forms	t value	p value
1	75.3	90.33	82.815	2.55	< 0.05*
2	90	100	95		
3	73.33	80	76.665		
4	66.67	93.33	80		
5	80	100	90		
6	80	100	90		
7	71.33	100	85.665		
8	53.33	73.33	63.33		
9	80	86.6	83.3		
10	66.66	100	83.33		
11	80	81.33	80.665		
12	66.66	80	73.33		
13	93.33	100	96.665		
14	100	86.6	93.3		
15	82.33	100	91.165		
16	93.3	81.33	87.315		
17	66.66	93.33	79.995		
18	73.33	100	86.665		
19	66.66	93.33	79.995		
20	66.66	93.33	79.995		
Mean	76.2775	91.642	83.95975		
S.D.	11.58006	8.71142	7.895856		

*Significant Student independent 't' test was done to compare the mean percentage of the correct identification of large forms and the mean percentage of correct identification of the small forms.

Statistically significant difference was found between the two values ($p < 0.05$).

As shown in [Table 1], the mean percentage for correct identification of small forms in control population was 76.54(12.36), while for larger identification it was 91.59 (8.08). Total identification mean percentage was 84.07 (9.37). On the other hand in test group correct identification of small forms was 76.27(11.58) while for larger identification it was 91.64(8.71). Total identification mean percentage was 83.95

(7.89). [Table 2] When comparisons were made between the mean percentage of the correct identification of large forms (91.64 ± 8.71) and the mean percentage of correct identification of the small forms (76.27 ± 11.58), using Student independent 't' test, statistically significant difference was found between the two values ($p < 0.05$) (Table II) no such correlation was seen

when comparisons were made for age and between dentulous and edentulous subjects.

DISCUSSION

Oral stereognosis is defined as the appreciation of the form of objects intraorally through oral manipulation. This ability can be tested by placing appropriately shaped forms in the mouth and asking the patient to identify them after manipulating it in the mouth. Stereognostic ability of the oral tissues especially that of the tongue plays an important role in placing the food material appropriately. In this study screening of both edentulous and the dentulous individuals was done. The dentulous patients served as control group. For assessment purpose ten test forms of a triangle, a square, a rectangle, a circle and a semicircle shape were fabricated of heat cure resin five small and five large samples. The test shapes were fabricated using heat cure acrylic resin, with 1mm thickness. Same test forms were used by Berry D.C and Mahood M,^[3] Van Aken A.A.M. et al,^[7] Smith Philip W and McCord J.F.^[8] The test forms were chosen at random and placed on patients tongue care was taken to keep it out of sight of patient. After placement patients manipulated the form and identify the form, as drawn on a laminated sheet. The assessment was done on the accuracy of identification. Both the groups showed fair accuracy in identifying the objects. When the percentage of correct identification of the small and the large forms were compared, the large forms were easily identifiable than the small forms, studies of Berry D.C and Mahood M have shown the same results.^[3]

CONCLUSION

Within the limitations of the study, it was found that there was no significant difference between stereognostic ability of dentulous and edentulous subjects, hence the oral stereognostic ability was not affected by the loss of teeth. Although the bigger forms were easily identified than the smaller forms with the accuracy of 89.99%. This holds true for both dentulous and edentulous subjects.

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