



RESEARCH ARTICLE

AWARENESS AMONG DENTAL PRACTITIONER REGARDING OCCLUSAL SCHEMES
FOR COMPLETE DENTURE

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ARTICLE INFO

Article History:

Received 06th December, 2016
Received in revised form
20th January, 2017
Accepted 08th February, 2017
Published online 31st March, 2017

Key words:

Occlusal schemes,
Edentulous patients,
Natural dentition.

ABSTRACT

Aim: To conduct a survey focusing on the awareness of dental students on the various types of occlusal schemes.

Background: Complete denture prosthesis is usually customized for edentulous patients or ones that lost some of their dentition. However, the complete denture prosthesis is not stabilized when compared to natural dentition. Therefore, the ideology of complete denture prosthesis with various occlusal schemes has been proposed to give a significant stability and sometimes it is esthetically limited. In fact, it also provide comfort and a better function like chewing for the patients, as if resembles natural teeth. It is very imperative for the students to know each occlusal scheme specifically and their application.

Material and method: This study was carried out in an attempt to evaluate the level of awareness among the students regarding the various occlusal schemes for fabricating complete denture prosthesis by circulating 100 questionnaires.

Conclusion: The study showed that the participants are fully aware about various occlusal schemes for designing complete denture prosthesis however intervention measures should be carried out to increase the awareness regarding this disease. More emphasis should be placed on curriculum taught in undergraduate education.

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Citation: Nor Masitah Mohamed Shukri, Dr. Gheena, S. and Dr. Ashok. 2017. "Awareness among dental practitioner regarding Occlusal schemes for complete denture", *International Journal of Current Research*, 9, (03), 48393-48395.

INTRODUCTION

Nowadays, there have been many approaches on the occlusal scheme for occlusion which one of the essential principles in complete denture prosthesis. Based on the Glossary of Prosthodontics Terms, occlusion is defined as the static relationship between the incising or masticatory surfaces of the maxillary or mandibular teeth or tooth analogues. Many edentulous patients have problem in phonation, mastication, feeling discomfort and low-self esteem due to poor appearance. This encourages them to seek denture treatment to restore function and esthetics. It has been stated that complete denture has limitation with different biomechanical characteristics when compared with natural dentition. It transmits directly any applied forces to every single tooth, acts as one unit (Fenton, 2012). Therefore, there are many various kinds occlusal scheme being proposed to overcome this

problem (Fenton, 2012; Clough, 1989 and Brewer, 1976). Most dentists are more focusing to design complete denture prosthesis with good stability and masticatory efficient that does not compromise the underlying tissues of the edentulous arch, regardless of posterior tooth form selected (Becker, 1977 and Boucher, 1990). Occlusal scheme is the relationship and pattern of occlusal contacts in natural and artificial teeth. It determines the occlusion between maxillary and mandibular teeth during centric relation and functional movement of mandible (Krishna Prasad, 2013). There have been many records of concepts, techniques and theories regarding the complete denture occlusal schemes with various schools of thought about it. Many clinicians believe that cusps on teeth and harmonization with stomatognathic system are important form in the occlusal schemes in complete denture. In meantime, there are also some thought saying that cusplless teeth are able to minimize horizontal force to unseat denture (Harold, 2009). Some had suggested lateral forces on denture and residual ridge could be impacted and controlled by the alteration upon the morphology of posterior teeth and occlusal schemes (Fenton, 2012). There are five classification occlusal

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schemes; neurocentric occlusion, lingualized occlusion, monoplane occlusion, linear occlusion and balanced occlusion. In a randomized clinical trial comparing anatomic, lingualized and zero-degree posterior occlusal form, patients with complete denture having lingualized showed higher level of satisfaction that those with zero-degree posterior occlusal forms (Sutton, 2007).

MATERIALS AND METHODS

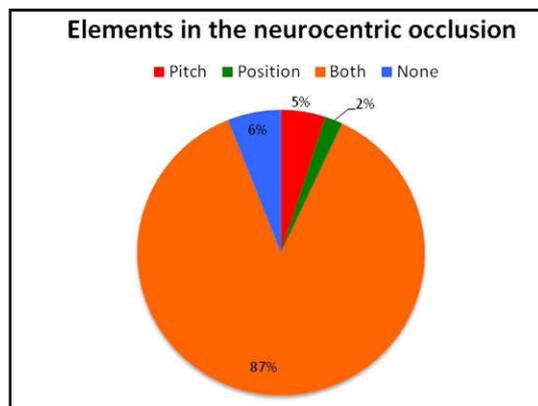
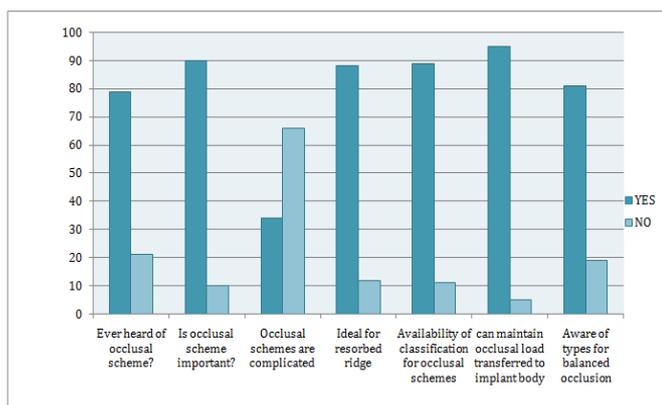
This study was conducted in Saveetha Dental College. A total of 100 questionnaires were circulated to the dental students, both male and female in this college. Particularly, all of them are from second year dental students aged between 19 to 21 years old. The questionnaire was cross-sectional in design with 10 multiple-choice questions. It has been designed in a manner to assess the level of knowledge and awareness among respondents concerning occlusal schemes for complete denture.

Questionnaire on Awareness among Dental Practitioner Regarding Occlusal Schemes for Complete Denture

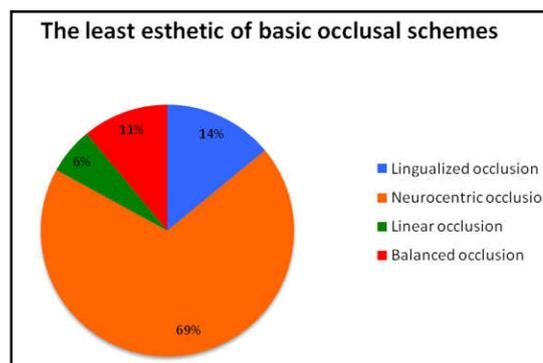
- Have you ever heard of occlusal schemes for complete denture?
- Do you think occlusal schemes are significant to design complete denture prosthesis?
- Occlusal schemes are complex and require more precise records.
- Occlusal schemes are ideal for patients with resorbed friable ridge.
- Occlusal schemes have been used to impact lateral forces on the denture and residual ridge.
- Are you aware of the availability of classification for occlusal schemes?
- Do you think occlusal schemes can maintain occlusal load transferred to the implant body?
- There are 4 types of occlusions that can be classified under balanced occlusion.
- Which of these are the elements in the neurocentric occlusion?
- Which of these following shows the least esthetic of basic occlusal schemes?

OBSERVATION AND RESULTS

Table 1. Questionnaire Analysis



Pie 1. Elements in the neurocentric occlusion



Pie 2. The least esthetic of basic occlusal schemes

DISCUSSION

As we all know, many edentulous patients seek denture treatment to restore function, provides stability, comfort and esthetics. Designing complete denture prosthesis is not an easy task as it is relatively unstable when compared to natural tooth. Therefore, it is very crucial for every clinician to know and learn practically the various approaches in the occlusal schemes in order to adapt to the function with prosthesis. Poor knowledge and awareness among them concerning this matter makes it more difficult to rehabilitate the edentulous patients with optimal occlusion in the complete denture prosthesis. Based on the above questionnaire analysis, we can conclude that many of the respondents are aware of the various occlusal schemes for complete denture, which is of paramount to enhance denture stability. Among the respondents, 79% of them had heard of occlusal schemes whilst remaining 21% had not heard of it. It is statistically significant that 90% of the total respondents believe occlusal schemes are important principle in complete denture prosthesis. As it determines the arrangement of occlusal contacts between opposing teeth, this will also determine the amount and direction of the forces that are transmitted through the bases of the denture to the residual ridge based on its quantity and intensity of these contacts. This explains why the importance of occlusal scheme (Krishna Prasad, 2013). One third of them had opinion that considering occlusal scheme as an important factor in the design of complete denture prosthesis are complicated and complex. Two third of the respondents argued that it is easy to manipulate occlusal schemes to provide balanced occlusions. In total, 88 out of 100 were correctly thought that occlusal schemes are important for friable ridge, which is specifically neurocentric occlusion as stated by Krishna Prasad. It was said that neurocentric occlusion which was developed by De van,

requires less precise records and simple. In fact, it is ideal for edentulous patients with resorbed friable ridges and also Geriatric patient with limited oral dexterity (Krishna Prasad, 2013). It was found that 89% of total participants knew the classification for occlusal schemes. They are lingualized occlusion, neurocentric occlusion, balanced occlusion, monoplane occlusion and linear occlusion. Balanced occlusion itself is further divided into four types; unilateral balanced occlusion, bilateral occlusion, protrusive balanced occlusion and lateral balanced occlusion, in which 81% of them had correctly answered and aware of it. Balanced occlusion provides stability even when bruxism but it will require a semi adjustable of full adjustable articulator (Harold, 2009). There are five elements in the neurocentric occlusion; pitch, position, proportion, number and form. In this study, eighty-seven percent answered the correct option, which was both position and pitch for the elements in neurocentric occlusion. Five percent of them had opinion that it is only pitch, whereas 2% were in favor of position and 6% for none of them. 69% of the respondents believed that neurocentric occlusion is the least esthetic of other occlusal schemes. Meanwhile, the remaining opted for lingualized occlusion (14%), linear occlusion (6%) and balanced occlusion (11%). In linear occlusion, anatomic teeth are being used in the maxillary posterior region to fulfill esthetic requirement (Koran, 1972 and Donald, 1974).

Conclusion

Although the search for ideal occlusal schemes are still underway, it still imperative for every single dental practitioner to enhance their knowledge about occlusal schemes in the manner of their characteristics and recommendations for usage along with the pros and cons. Based on this study, it can be concluded that the students had fairly good knowledge and suboptimal level of awareness regarding the various kind of occlusal schemes for complete denture prosthesis. Nevertheless, there still need for further intervention such as continuing education and communication to overcome such resistance and improve their level of understanding.

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