

# KNOWLEDGE, ATTITUDE AND TECHNIQUES IN RECORDING HORIZONTAL JAW RELATION

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**Abstract:** The horizontal jaw relation is the maxillo-mandibular relation in horizontal plane. A lot of methods are practised by the dental practitioners in recording the horizontal jaw relation of a patient. The purpose of this study is to evaluate the different methods used by practitioners to record the occlusion and the complications faced by it. The exact method used by dental practitioners was not clear, so this study is done to evaluate the different methods used to record the horizontal jaw relation.

**Keywords:** jaw relation, horizontal jaw relation, centric jaw relation

## INTRODUCTION:

Edentulism is the condition of being toothless to at least some degree; it is the result of tooth loss. Loss of some teeth results in partial edentulism, whereas loss of all teeth results in complete edentulism. <sup>(1)</sup>Persons who have lost teeth both partially or completely are called edentate or edentulous whereas those who have not lost teeth can be called dentate or dentulous. In case of partially edentulous patients the edentulous space can be corrected by various techniques like Temporary partial denture, Fixed partial denture, Implant, etc

In case of completely edentulous patient Complete denture can be made to rectify the edentulous oral cavity. <sup>(2)</sup>Recording jaw relations in the treatment of edentulous patients aims at facilitating the adaptation of the complete dentures to the masticatory system to give them an optimal and comfortable function

During complete denture process jaw relation must be taken to reproduce maxillo-mandibular records to design an occlusion that limits trauma to the denture foundation area, enhances stability of the dentures and restores speech, aesthetics and mastication.

Jaw relation refers to "Any relation denotes of maxilla to mandible" (GPT). Jaw relation can be 3 types

Orientation jaw relation

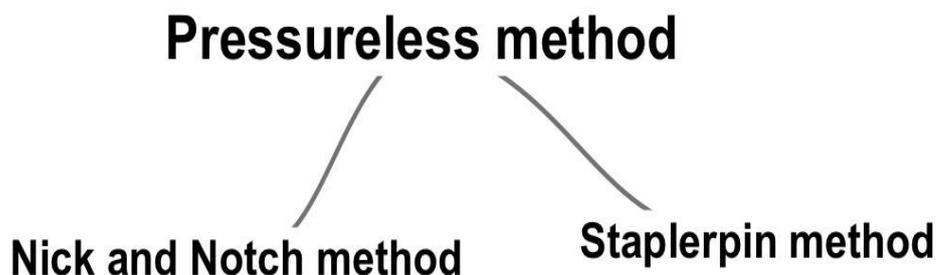
Vertical jaw relation

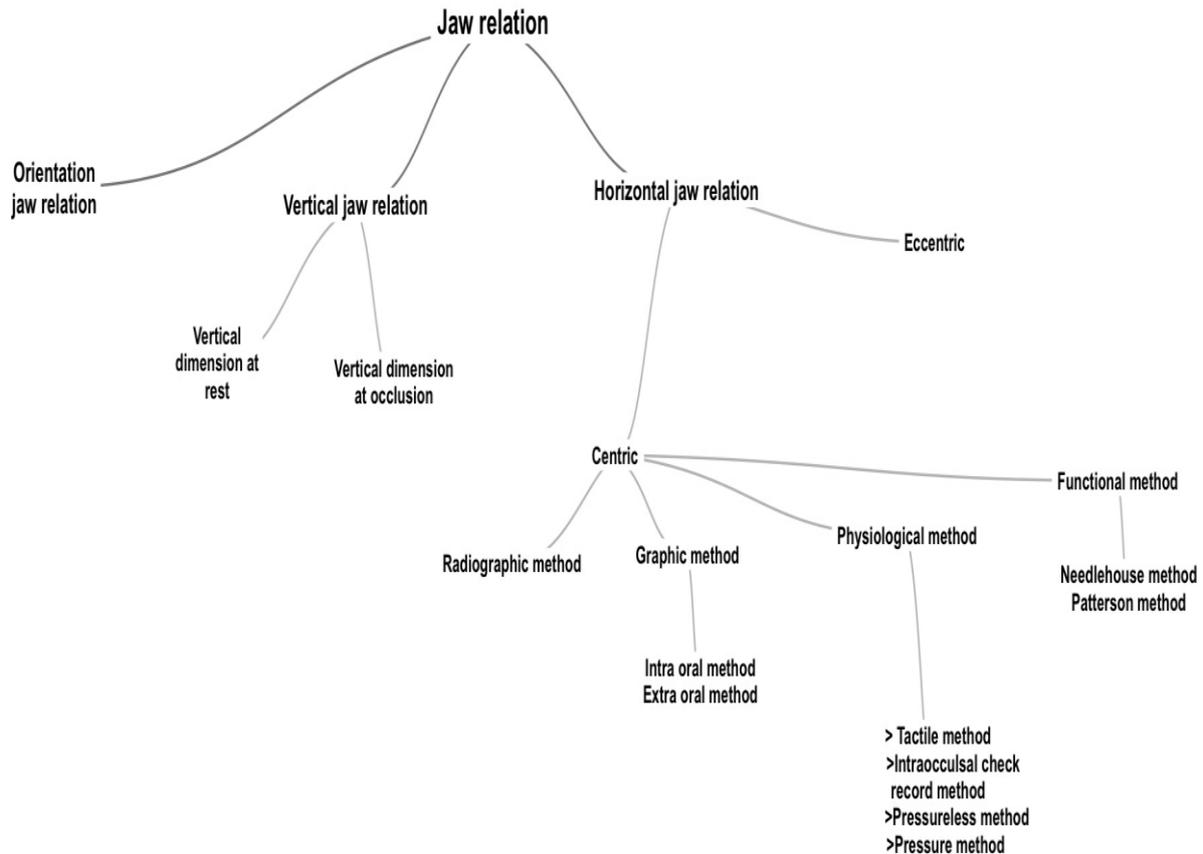
Horizontal jaw relation

Orientation jaw relation: The jaw relation when the mandible is kept in its most posterior position, it can rotate in the sagittal plane around an imaginary transverse axis passing through or near the condyles

Vertical jaw relation: It is referred to as the length of the face determined by the opening of the jaw. It is maintained either by occlusion of the teeth or the balanced contraction of the opening and closing muscles of mandibular movements.

Horizontal jaw relation: It is a Maxillo-mandibular relation in horizontal plane. It is the relationship of mandible to maxilla in anteroposterior direction.





#### HORIZONTAL JAW RELATION:

<sup>(3)</sup>Horizontal jaw relation can be classified into Centric and Eccentric jaw relation. <sup>(4)</sup>Major muscle responsible for horizontal jaw relation is Lateral Pterygoid

#### Centric relation:

The most accepted definition is, "The maxillo-mandibular relationship in which the condyles articulate with the thinnest avascular portion of their respective discs with the complex in the anterior-superior position against the slopes of the articular eminences. This position is independent of tooth contact. This position is clinically discernible when the mandible is directed superiorly and posteriorly. It is restricted to a purely rotary movement about the transverse horizontal axis"-GPT

#### Eccentric relation:

"Any relation of mandible to maxilla other than centric relation"-GPT

Horizontal jaw relation can be recorded by both centric and eccentric methods. In case of recording the horizontal jaw relation by centric method any methods can be used. Though many methods are there for recording the jaw relation the exact method or the most commonly used method cannot be determined.

#### MATERIALS AND METHOD:

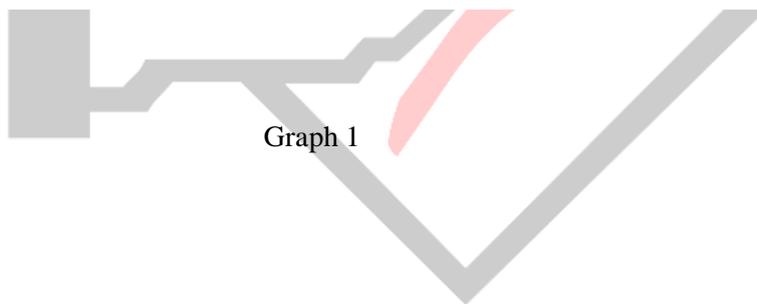
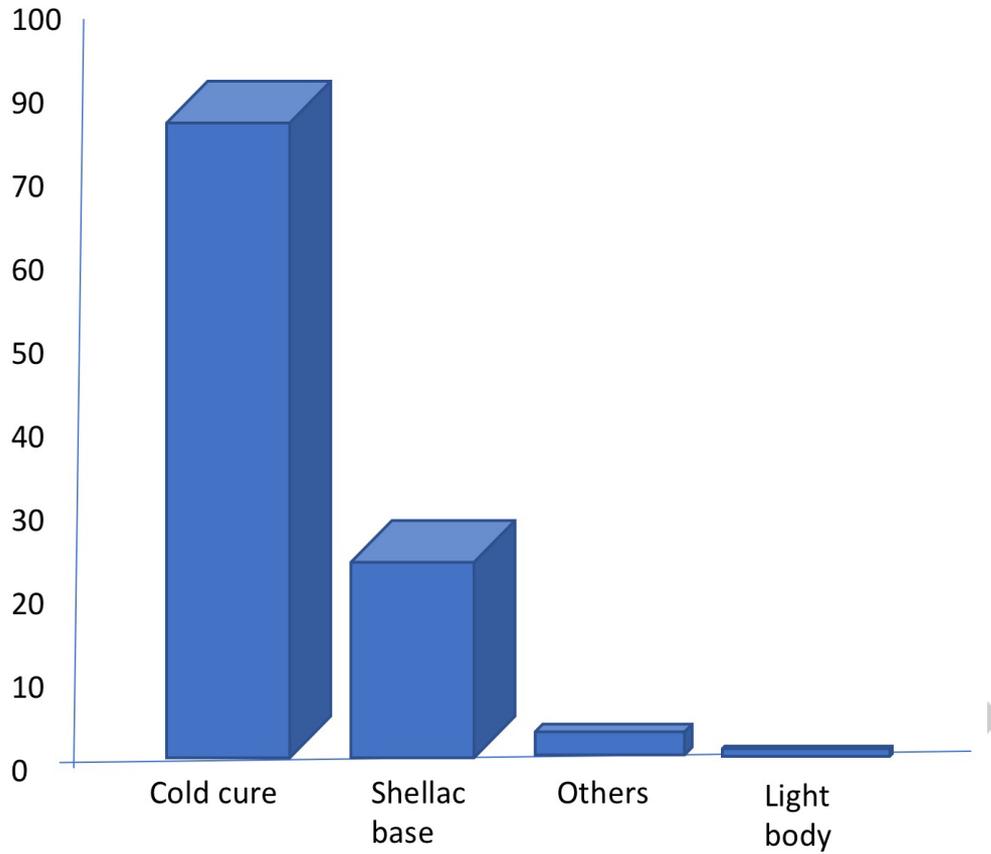
This questioner based study was conducted for a period of one month (December 2016). Questions on horizontal jaw relation were asked to 100 dental practitioners about the method they use to record the horizontal jaw relation. The questioner consists of 9 questions about the method they use to record the horizontal jaw relation. The purpose of this study is to evaluate the different methods used by practitioners to record the occlusion and the complications faced by it .

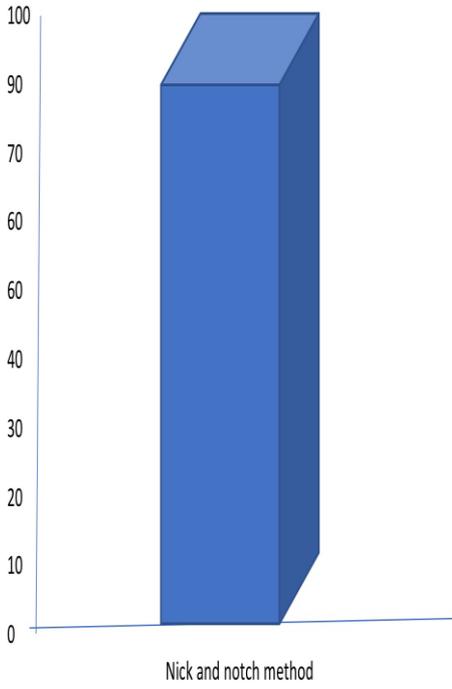
The questions in the questioner are as follows,

- 1) What type of denture base do you use a) Shellac base plate b) cold cure c) light cure d) others
- 2) What techniques do you follow to record horizontal jaw relation for completely edentulous patient.
- 3) What technique do you follow to record the horizontal jaw relation of partially edentulous patients?
- 4) What techniques do you follow to record the horizontal jaw relation of dentulous patient.
- 5) Which techniques of horizontal jaw relation were you trained
- 6) Do you follow the same techniques now?
- 7) Are you confident with the techniques you are using?

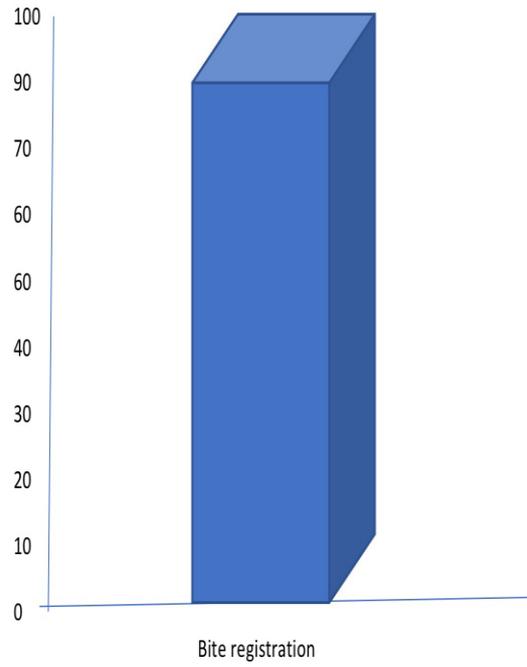
- 8) Would you require any refresher course to improve your skills?
- 9) What difficulty did you face while recording horizontal jaw relation?

**RESULTS:**

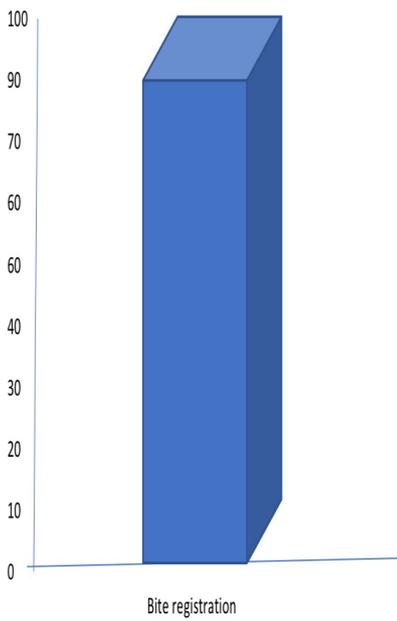




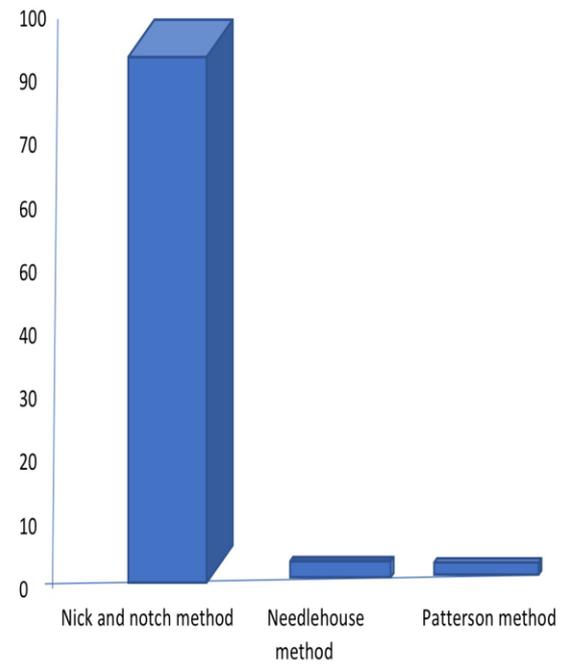
Graph 2



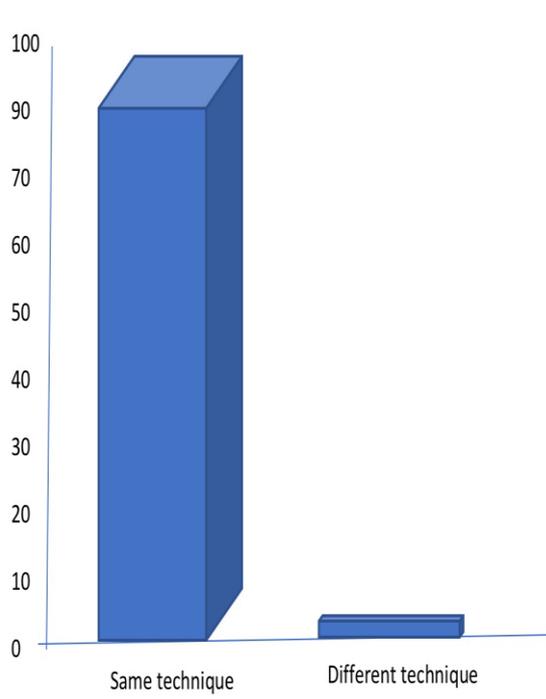
Graph 3



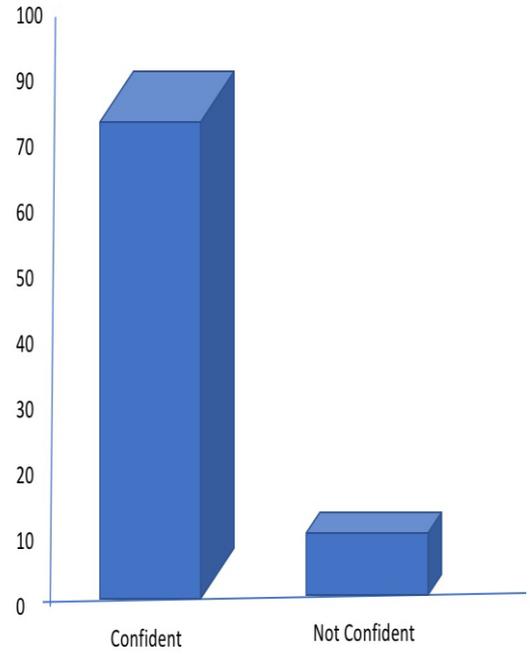
Graph 4



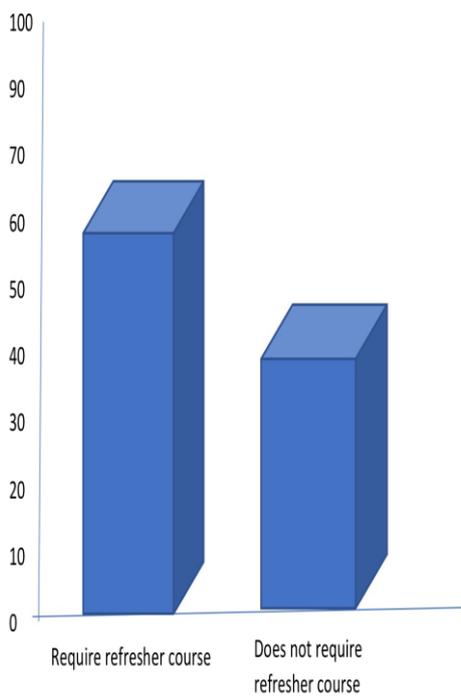
Graph 5



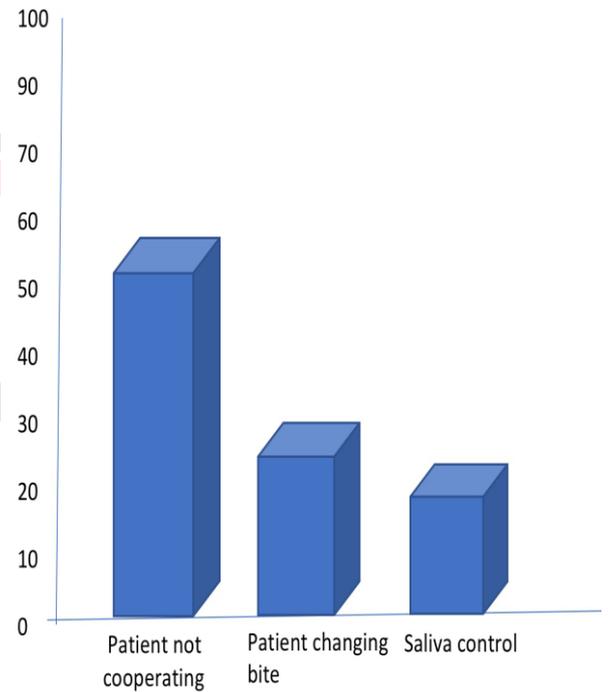
Graph 6



Graph 7



Graph 8



Graph 9

**DISCUSSION:**

Among the 100 dental practitioners most of them used cold cure as the denture material. That is 90% of the dental practitioners used cold cure.

<sup>(5)</sup>The method used to record the horizontal jaw relation in completely edentulous patients 90 % of the dental practitioners uses Nick notch method which is a pressure less method under the classification physiological method and it follows centric jaw relation and others used functional method which are needle house method and Patterson method (Graph 1). In a study done by

Raymond C. Walker on comparison of jaw relation recording methods, he has proved that physiological method was more convenient than the functional method

The method used to record the horizontal jaw relation in partially edentulous patient among the dental practitioners is bite registration method. All 100% used this method to record the horizontal jaw relation (Graph 2). The method used to record the horizontal jaw relation in partially edentulous patient and dentulous patient by the dental practitioners is bite registration method (Graph 3 and Graph 4). <sup>(6)</sup>In a study done by David P. Wood, DDS, MCID and Robert W. Elliott; it was proved that for registering the horizontal jaw relation in dentulous and partially dentulous patient bite registration was more convenient and reliable

The technique of jaw relation the dental practitioners were trained was Nick notch method (Graph 5)

97% all the dental practitioners are following the same technique now (Graph 6). 90% dental practitioners were confident with the technique they use for recording the horizontal jaw relation (Graph 7). 60% of the dental practitioners accepted the fact that they do require a refresher course to improve their skills (Graph 8).

The difficulties faced by the dental practitioners while recording the horizontal jaw relation are patient in cooperation, patient changing bite, saliva control, class 3 skeletal structure (Graph 9).

#### CONCLUSION:

The graphs show that out of all the 100 dental practitioners, 90 of them used cold cure as denture base material, 100 of them used nick and notch to record the horizontal jaw relation in completely edentulous patient, all 100 used bite registration method for recording the horizontal jaw relation in partially edentulous patient, all 100 used bite registration method for recording the horizontal jaw relation in dentulous patient, 90 of them were trained on nick and notch methods and others on pressure method, 90 of them were confident on the technique they use to record horizontal jaw relation, 97 of them followed the same technique, 60 of them accepted that they require a refresher course to improve their skills in recording the horizontal jaw relation, the difficulties faced by the dental practitioners while recording horizontal jaw relation patient not cooperating, bite change in patient, saliva control.

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