

**Awareness on protocol for all ceramic crowns and bridges in restorative therapy  
among dental practitioners**

K. Thirumagal

Undergraduate student

Saveetha Dental College, Saveetha University, Chennai, India

Dr. Vinay

Senior Lecturer

Department of Prosthodontics

Saveetha Dental College, Saveetha University, Chennai, India

Dr. Marian Anand

Senior Lecturer

Department of Prosthodontics ,

Saveetha Dental College, Saveetha University,

162, Poonamallee High Road, Chennai - 600 077

Tamil Nadu, India

e-mail id :ai.vynter@gmail.com

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## **ABSTRACT**

### **Introduction**

Dental crowns or other wise known as cap which covers the tooth structure that is made of ceramic or porcelain it is placed just on the top of tooth surface. This can be joined along with the dental implants or bridges. Dental bridges can be used for one or more missing tooth. It bridges the remaining gap between the teeth and filled the space with the customized dental crowns. Advantages of using all ceramic are they provide aesthetic , biocompatible, preservation of tooth structure, strength.

### **Material and Methods**

The questionnaire was prepared. The survey was conducted among the dental practitioners about all ceramic crowns and bridges in restorative therapy. The survey was conducted using a link created by survey planet and it was shared through various social media's. The data was collected and it was statistically analyzed and interpreted in to graphs.

### **Key word**

All ceramic crowns, all ceramic bridges, aesthetic, Survey planet, biocompatible.

### **Conclusion**

77% of them provided all ceramic crowns and bridges for there patients. Over all there is awareness among Dental practitioners about all ceramic crowns & bridges in restorative therapy.

## Introduction

The main aim of the dental surgeon is to replace the lost teeth structure by preventing it from other deleterious effects which are associated with the lost tooth (1). Mostly the patient may ask, "Is it really necessary to cutaway all that good tooth?" this is the question that always troubles the dentist to give replacement for the missing tooth as they tries to give balance to the periodontal, occlusal and esthetic for the benefits of prosthesis patients against the damage due to abutment teeth (2). The treatment options for the lost teeth can be given like no treatment and the patients may accept the resulting space obtained, therapies of orthodontic to redistribute the space or replacement of prosthetic tooth (3). Many techniques in processing the ceramic are used to improve both chemical and physical properties of zirconia-based materials. (Lazar et al., 2008) Co-precipitation from the metal aqueous solutions has shown to yield both physical and chemical homogeneity in non-dental zirconia based applications while it being cost-effective and it is simpler than many alternatives to achieve the similar results (4). Now we are currently in the new era of routinely providing the all-ceramic restorations for the patients because of there new availability of the materials such as polycrystalline alumina, highly sintered glass, adhesive monomers and zirconia based ceramic materials. Adding to this new fabrication systems which is combined with the computer assisted fabrication system known as dental CAD/CAM and the networks are now being increasingly available(5). Despite of being clear the trends towards the use of interventive minimally , the direct restorative techniques and the uses of all- ceramic restorations it also includes both the ceramic inlays, onlays, all-ceramic crowns and bridges, veneers is anticipated to expand continuously. The reasons behind the anticipated growth may be attributed to patients because of increasing in the expectations of aesthetic , the advancements in technologies of ceramic by developments in (CAD/ CAM) computer-aided design and computer-aided manufacturing and further development of the all- ceramic adhesive systems (6). Advantage of using all ceramic crowns that are made of lithium disilicate glass-ceramic it resist to high fracture loads. Adhesive for the cementation of crowns and bridges that enhances the survival rate of the all-ceramic material (7). In most of

the all-ceramic crowns and the prosthesis is composed mainly of zirconia core in the substructure, and a feldspathic porcelain present in the superstructure position. Now a days zirconia material is considered to be the most suitable material for restorations of the posterior teeth's because of its higher bending capacity and resistance against the fracture (8-9). Even though the zirconia ceramic restorations that are luted using the conventional luting cements (10). The bonding capacity of resin towards the ceramic would be more advantageous for many clinical applications (11). The factor like caries, erosion, bruxism, occlusion of the tooth, fracture, exostosis, eruption disharmony, genetic variations are the factor that contribute to etiology of short clinical crowns (12). Popularity for all-ceramic restorations have been gained the regard due to their excellent biocompatible nature and esthetic properties (13). The new zirconia ceramics with the high-strength property overcomes the problems of brittle conventional ceramics by allowing the fabrication of restorations that have good ability to withstand functional loads and the esthetics (14-16). Restoration along with the post and core of cast metal and the all-ceramic crown requires for ideal over jet and overbite to decrease the fracture of restoration under any functional stresses (17). The high failure rates in the crown and bridge works are recorded in previous study which is done in Khartoum state (65% in 2001) that shows the importance of assessing the function of crown and bridge work (18). Many patients demand the dentist for the replacement of crown and bridges in place of missing teeth and this shows the quality of crown and bridge therapy have become increased in professional as well as public concern (19). Good quality of crowns and bridge must be well designed and constructed. So that it can restore the normal function like that of natural tooth and promote good masticatory unit along with long lasting life (20).

## **Materials and Methods:**

The questionnaire was prepared. The survey was conducted among the dental practitioners about all ceramic crowns and bridges in restorative therapy like whether they have provided all ceramic crowns and bridges for their patients, In which situations they don't use the material E max, what is the primary source of failure in all ceramic bridges etc were asked. The survey was conducted using a link created by survey planet and it was shared through various social media's. The data was collected and it was statistically analyzed and interpreted in to graphs.

## **Discussion:**

(Figure 1) shows that 77% of the dentist provide all ceramic crowns and bridges for their patients remaining 23% of them have not provided all ceramic crowns and bridges for their patients this is because they may belong to maxillofacial surgeon. (Figure 2) 33% of them don't use E-max material for posterior 3 units followed by 28% of them said anterior 3 units, 21% of the selected anterior 4 units remaining 18% said posterior single tooth. (Figure 3) Majority of them says that chipping is the primary source for failure in all ceramic crowns and bridges. Remaining 31% of them says debonding 21% of said it is due to connector fracture and only 9% of them choose delamination. (Figure 4) shows that 58% of them says that they will use E-max as their all ceramic system for their anterior teeth this is because it gives more esthetic look compared to other all ceramic systems. 21% of them choose alumina followed by monolithic zirconium 12% of choose and 9% of them choose layered zirconium for anterior teeth. (Figure 5) Majority of them choose monolithic zirconium is the best material for posterior all ceramic restoration. Remaining of them says E-max, alumina and layered zirconium. (Figure 6) shows that most of use resin cement for all ceramic restoration. (Figure 7) Majority of them says that 2mm occlusal reduction is needed for all ceramic crowns. (Figure 8) 30% of them says that they will

use the materials like E-max, alumina and monolithic zirconium for the clearance less than 2mm and remaining 10% says layered zirconium. (Figure 8) shows that E-max is the aesthetic all ceramic material followed by monolithic zirconium, alumina and layered zirconium.

**Result:**

Fig1: Have you provided all ceramic crowns & bridges for your patients

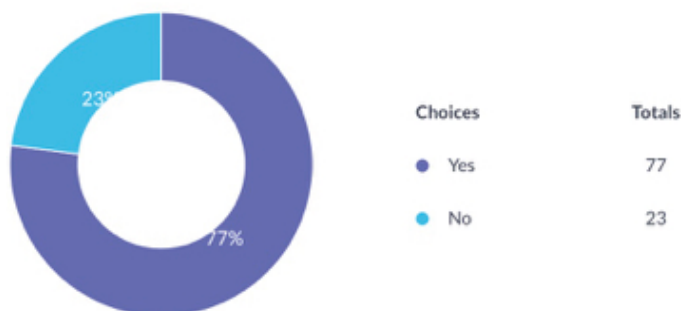


Fig2: In which situation can E-max material not be used

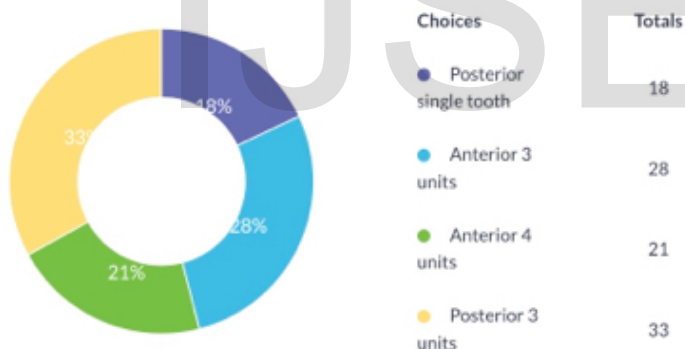


Fig3: Which is a primary source of failure in all ceramic bridges

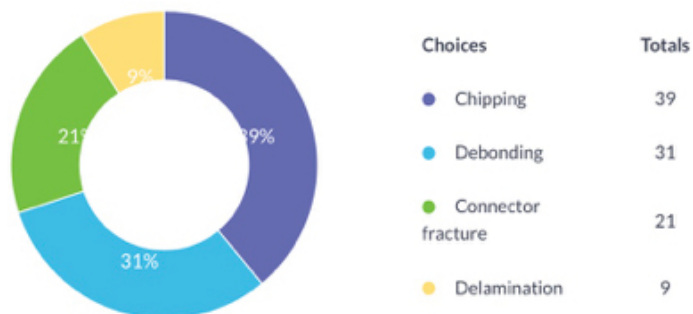


Fig4: Which all ceramic system would you use for anterior teeth

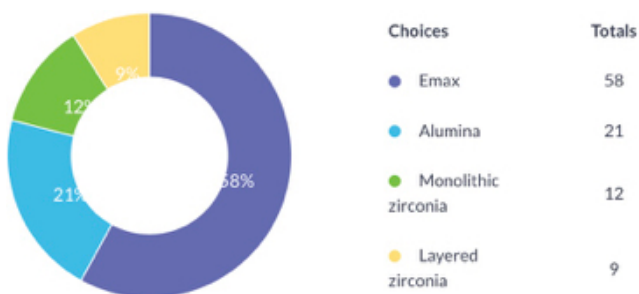


Fig5: Which is the best material for posterior all ceramic restoration

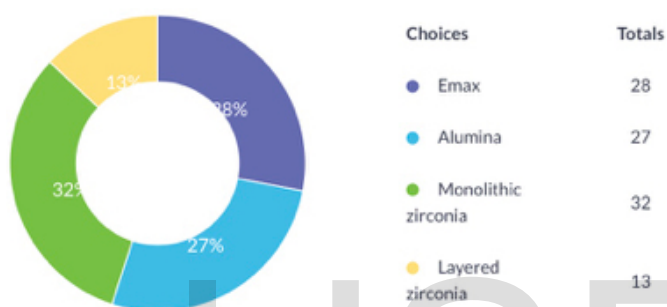


Fig6: Which cement would you use for all ceramic restorations

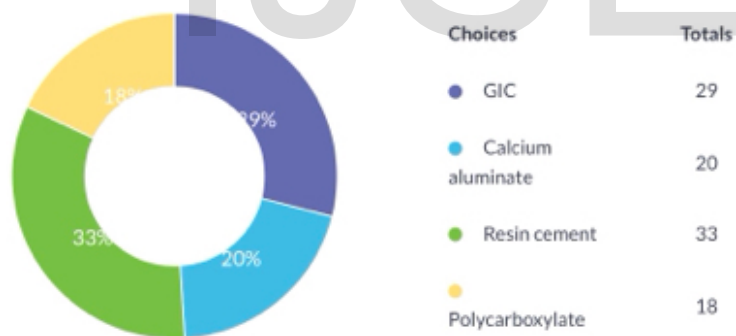


Fig7: What is the amount of crown reduction required for all ceramic

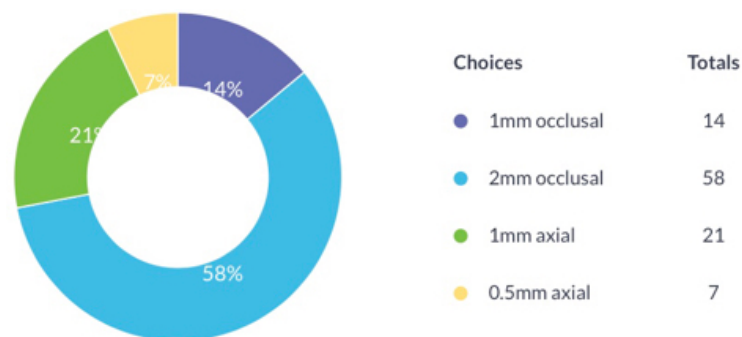


Fig8: What type of all ceramic restorations would you provide in case of clearance less than 2mm

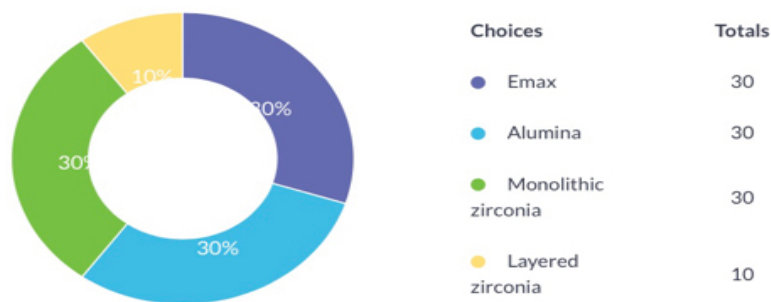
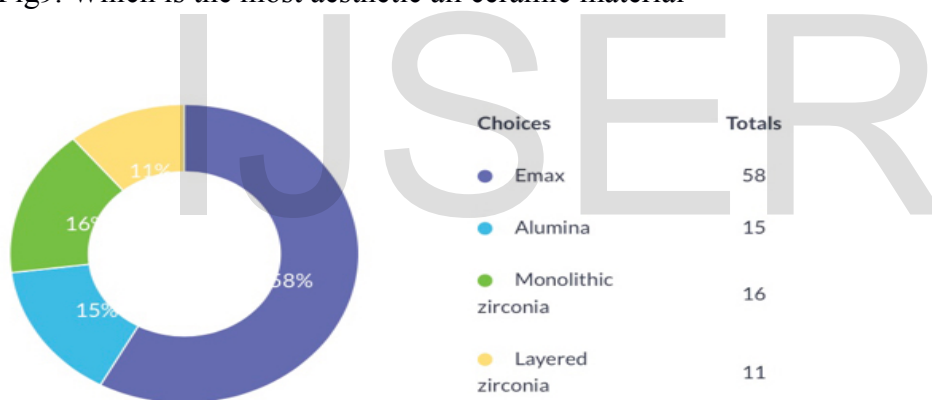


Fig9: Which is the most aesthetic all ceramic material



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