

## A Retrospective Study To Determine Patients' Satisfaction With Fixed Dental Prostheses Provided During The Period 2008 – 2012 at The School of Dentistry In Trinidad

Research Article

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### Abstract

**Introduction :** The School of Dentistry undertakes the training of dental students, where they provide fixed dental prostheses such as crowns bridges and onlays to patients of the dental polyclinic. The aim of this study was to determine the patient satisfaction with their fixed prostheses and the quantity of remakes at the School of Dentistry polyclinic during the period 2008-2012.

**Methods :** The lab records of fixed prosthetic work during the period 2008-2012 were analyzed. Patients who received treatment during this period were contacted via telephone for a structured interview via a questionnaire.

**Results :** Ninety-six (96) patients were contacted via telephone and 72% of patients were female. Fifty-six (56) crowns and onlays, 22 conventional bridges and 18 resin-retained bridges were provided for patients. Ninety-six (96%) of patients were satisfied with the aesthetics (appearance) of their prosthesis immediately after fitting and 90.7 % were still satisfied with the appearance at the time of interview.

79.2% of prostheses were still in place at the time of interview but patients reported that 18% of crowns failed, 22.7% of conventional bridges and 27.8% of resin-retained bridges had failed. Fifteen (15%) of the fixed prostheses were remade. However, the majority of patients (99 %) were overall satisfied with their services at the School of Dentistry in Trinidad.

**Conclusion :** Patients are generally satisfied with the fixed prosthetic work delivered at the School of Dentistry polyclinic and highly satisfied with the services provided. The amount of remakes whilst small can be reduced with more stringent quality assurance measures.

**Keywords:** Dental Students, Fixed Prosthesis, Crowns, Bridges, Patient Satisfaction.

### Introduction

The School of Dentistry, University of the West Indies (UWI) in Trinidad undertakes the training of undergraduate dental students, where they are allowed to work on patients of the Dental School Hospital. They can provide fixed prosthesis to patients referred to the Restorative Department of the School of Dentistry Adult Polyclinic.

A fixed prosthesis is defined by the Academy of Prosthodontics

as any dental prosthesis that is luted, screwed or mechanically attached or otherwise securely retained to natural teeth, tooth roots and or dental implant abutments. Examples of these prostheses are crowns, bridges and onlays, which serve to restore the function and aesthetics of badly broken down teeth and in some instances to replace missing teeth [1].

The satisfaction of a patient after conducting a dental procedure is essential in the overall success of the treatment of that patient. At the School of Dentistry polyclinic, fixed prosthetic procedures

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are commonly done on patients annually. Palmqvist and Soderfeldt [2] stated that there are many factors that may influence the longevity and strength of such restorations or procedures and therefore ultimately the satisfaction of the patient. The survival rate of metallic ceramic crowns and bridges has been shown to vary in the range 68 – 83% over periods of 15 – 23 years [3-5].

Patient satisfaction is one measure of the quality of delivery of dental services.

### Aim

The objective of this study is to determine the level of patient satisfaction among the crown and bridge patients who received treatment at the School of Dentistry, UWI, Dental Polyclinic during the period of 2008 – 2012. This research project will help the dental students and dentists, to identify areas for improvement of fixed prosthetic work when treating future crown and bridge patients at UWI dental school therefore improving our patient satisfaction rating and the school's quality of care for patients.

### Materials and Methods

Informed by available literature, a stepwise methodological approach as was described by Findlay et al., [6] was taken for this study. Firstly, limitations for the study were identified and a review of published studies was conducted.

A list of patients who received fixed prosthetic work from the School of Dentistry Adult Polyclinic during the period 2008-2012, was generated from laboratory records. This list was used to request patient dental records where contact information was obtained. A questionnaire was developed to determine patient's satisfaction with their fixed prosthesis. The questionnaire served to guide an interview with the patient and collect data on oral hygiene, aesthetics, oral function and satisfaction. A pilot of the questionnaire was done among student peers to pick up errors and inconsistencies. The final draft of the questionnaire was then

developed based on feedback from the pilot. The study and questionnaire were approved by the UWI Faculty of Medical Sciences Ethics committee. Attempts were then made to contact patients via telephone by the researchers. Patient interview data was then recorded on the questionnaires and this data was subsequently entered into SPSS® Version 20 and analyzed.

### Results

A list of 231 patients was generated and ninety-six (96) patients were contacted and interviewed which is a response rate of 41.6%. Seventy-two percent (72%) were female and 28 % were males.

The fixed prostheses delivered included 53 porcelain fused to metal (PFM) crowns, 2 onlays and 1full gold crown (FGC), 23 conventional bridges and 18 resin-retained bridges (Figure 1). Seventy-six of the prostheses(79%) were still in place at the time of interview. Fourteen of the prostheses (15%) were remade and 10% were recemented.

Sixty-two prostheses (64.5%) are posterior restorations and 68 prostheses (71%) are in the upper arch. Eighty-three of the 96 patients (86%) reported to be in good health and 95 (99%) had visited the dentist once a year or more often. Nearly 95 % brush twice daily or more often and 77 patients (80.2%) floss daily.

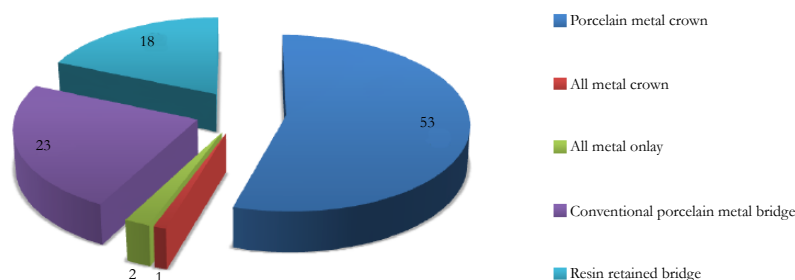
Ninety-two patients (96%) were satisfied with the aesthetics of their prosthesis immediately after fitting and 90.7% were still satisfied with the appearance at the time of interview. Eighty five patients (89%) felt that they got “value for money”. However, 19 patients (20%) complained that they waited to long to receive their prosthesis.

Some of the patients' complaints with their prostheses were food impaction (39%), bleeding gums (24%), dropping out (22%), mouth odor (8%) and difficulty in cleaning (7%) (Table 1). However 28.6% had no complaints at all and the majority (99%) of the 96 patients interviewed described their overall satisfaction with the provision of their services at UWI dental school as

Table 1. Distribution of Study Group According to Patient Complaints (n=96).

Patient Complaints	Number of Patients	Percentage (%)
Food Impaction	37	39
Bleeding gums	23	24
Dropping out	21	22
Difficulty in Cleaning	7	7
Mouth Odor	8	8

Figure 1. Distribution of prosthesis to patient (n=97).



“Satisfactory” or “very good” and only 1 patient was “dissatisfied”.

## Discussion

A 41.5% response rate was obtained in this study. While attempts were made to call all patients, some numbers were found to be out of service or the calls were not answered. Our patient pool shows a predominance of females: 27 males and 69 females. This might suggest that female patients are more concerned about their oral health or have more time to visit the dentist for long procedures. A very small percentage of patients were medically compromised to the extent that it limited their activity. Therefore most patients were able to visit the clinic and should have been able to maintain their prostheses.

Ninety-nine per cent (99%) of the patients were satisfied with their prostheses and this is comparable to other studies that also had similar findings of patient satisfaction with fixed prostheses [7]. Even though a number of patients had problems with their prosthesis their overall satisfaction was high. This suggested that the student patient management is to be commended.

Only 15% of the patients had their prosthesis remade and 10% recemented. Leempoel et al., [5] stated that survival rate of the prosthesis decreases progressively after 8-10 years. This percentage can be improved. Further studies might be conducted to determine what stage of the prosthesis construction was at fault.

However the 10% who had decementation problems and therefore had to have their prosthesis recemented is similar to studies done by Saleem et al., [8]. Decementation can be associated with the follow up care and eating habits of the patients or human error made by the student dentist. Saleem et al., [8] also revealed that porcelain fractures and metal damage were present amongst patients who used prosthesis for the past 5 years; this could be as a result of fatigue of the material. However this study can relate to the present paper as our research showed that 21% of the patients complained that their prosthesis dropped out after the 5 year period.

23 persons (24%) of the patients complained of bleeding gums, this may be as a result of poor oral hygiene and failure to comply with the home care post operation requirements of the prosthesis. Fifty two per cent (52%) said they go for regular cleaning and 80% said they floss regularly. There might be a need for student to reinforce oral hygiene practices as it related to fixed prostheses. The majority of the restorations were in good condition aesthetically and functionally after the 5 year period. Most of the patients found the cost of the prosthesis affordable and the time taken for them to receive it was reasonable and they were able to get good value for their money. This reflects well on the quality of the fixed prosthetic work at the UWI dental school.

The study was conducted by phone interviews via the University of West Indies, Dental School, which is a low cost dental clinic available to the general public. As such the studies sample population and data obtained would be a representation of only a portion of the country's economic classes, as most of the attendees belong to the lower socio-economic group in society. Data col-

lection was conducted between the hours of 8:30 AM and 7:00 PM, as such, patient diversity was thus reduced to those who had active phone numbers, who were able to answer the phone and were available for 10 minutes to go through the interview process during these times.

The accuracy of the interview-based questionnaire relied on the memory and honesty of patients. If the patient could not remember exactly when the prosthesis was obtained and over how many visit, this could have affected their response. The questionnaire design was not specific compared to if there was an analog scale to measure variables such as pain [9]. Participants also may have been embarrassed to divulge information such as how often they brush and/or floss their teeth, visit the dentist, or if they smell an odor when cleaning the site where the prosthesis is located. Finally the study was limited to the patients that were contacted and not all patients that actually use the dental clinic [10].

## Conclusion

This retrospective study was beneficial in obtaining useful information that will serve to evaluate the standard of the products and services given at the UWI School of Dentistry clinics. Patients are generally very satisfied with the fixed prosthetic work delivered and are highly pleased with the services provided. There were also a few remarks of complaints, which will be valuable for the School of Dentistry to use to attempt to provide quality prostheses and services to ensure all patients are given the highest degree of satisfaction possible.

## Acknowledgements and Declarations

There are no conflicts on interests with any authors or any financial grants associated with this project. The study was approved by the University of the West Indies, Faculty of Medical Sciences Ethic committee.

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