

**THE NATURE AND QUALITY OF THE DELIVERY OF PROSTHODONTIC CARE IN
THE KINGDOM OF BAHRAIN.**

**EXPERIMENT #5: LOOK AT THE TREATMENT PLANNING PROCESS IN
GENERAL DENTAL PRACTICE: THE GENERAL DENTAL PRACTITIONERS WILL
BE CONFIDENT AND COMPETENT AT PROVIDING SATISFACTORY AND
SUITABLE PROSTHESES.**

By

Sima Hem

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This dissertation is an opportunity for me to extend my regards to my research supervisor, my beloved friends, and my family for their untiring support that they furnished throughout my research. I am grateful to them for their belief in me and the guidance that they provided me without which I would have never been able to work on and complete this research. It also signifies my own views and does not closely relate to the university.

Signature: _____

Date: _____

DECLARATION

I, (Your name), would like to declare that all contents included in this study stand for my individual work without any aid, and this proposal has not been submitted for any examination at academic as well as professional level, previously. It is also represents my very own views and not essentially those that are associated with other university.

Signed _____

Date _____

Abstract

Aim: The aim of this study is to explore The Nature and Quality of the Delivery of Prosthodontic Care in the Kingdom of Bahrain. The competencies of the GDPs practicing in Bahrain in demonstrating procedures like Prosthodontics and related disciplines.

Background: The techniques of Prosthodontics and the quality of provision of dental services in Bahrain can be assessed on the knowledge through dental experience, implication of learned knowledge into practice largely depends upon the control of health care organization over practicing dentists.

Methodology: Qualitative Research design with Semi-Structured Interview Sessions has been conducted with 30 randomly selected General Dental Practitioners (GDPs) in Kingdom of Bahrain. The interview questionnaire comprised of 3 sections and data was collected through e-mails from the respective respondents.

Main findings: The GDPs in Bahrain reported to be practicing Dental Implants through simpler procedures that are not invasive surgical interventions. The synthetic bone grafting and restorative dental techniques have widely been practiced by the respondents. Participants demonstrated professional explanation of the methods for treatment for dental insufficiencies and elaborated treatment criteria for latest technology. However, respondent also depicted that cost of treatment they have been offering is high for people to afford expensive procedures as dentists have been using costly materials in their procedures.

Conclusion: These studies suggest that the utilization of dental services in Bahrain has been up to the optimum mark throughout the country as GDPs have been providing better services to public but the cost of the treatment has been the issue restraining people from achieving maximum benefits from dental services in Bahrain.

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CHAPTER 1: INTRODUCTION

Dentists are the fundamental working force in the provision of dental services in Bahrain. These professionals are recruited from specialized dental schools and in some cases foreign qualified graduates are also been chosen to serve within the country. This makes the phenomenon of quality and timely services more fluent and effective in terms of making sure cost effective care but yet better services are been required. In order to observe high level of dental services that can be provided to the patients, perceptions of self-efficacy within the organization can be a uniting factor between gender, age, race etc. within the dental services boundaries (Nash, 2007). The knowledge through dental experience, implication of learned knowledge into practice largely depends upon the control of health care organization over practicing dentists. Some studies state that the global diversity of dental service provision is not a root cause for the dentist not to serve the patients who are underserved rather dentistry has aligned itself from a health related profession to a profit making business model (Nash, 2007; Ozar, 2006b).

Background of the Study

Dental Service Provision in its best essence has been a real challenge faced by Bahrain now days. Removable (Partial or Complete), Crown fixing, Bridges Fixation has not been a smooth convey of care delivery. The cost of dental care has been high and for a norm it is difficult to assess these services (Hakestam, Karlsson & Glantz 1997). The dentists are prone to perceive negative and stereotypical perceptions towards serving patients on concessions and in some instances free of charge. This has been likelihood for them to prefer practicing into faculties high in costing services where customers who can actively pay them and are the only

patients to attend to. A practicing dentist at the end of the day considers money as the entity that can only be justified to his hard work and strive (Hakestam, Karlsson & Glantz 1997). The dental health services in Bahrain have been better in competence and quality but gaps stand in places where a role of preparedness and possible connection to practice can be placed. A reason to problem for difficulty in providing quality dental care is the shortage of practicing dentists in Bahrain. Over the years, the country has observed decline in good dentists, migration of dentists to specialized areas like Orthodontistry, low capacity for dental education, fewer available students in dental schools and retirements of experienced dentists throughout the country. Provision of care is also interrupted by inefficient regulatory supervision for the practicing dentists for checks and balance.

Rationale

The rationale of this study is the need to demonstrate the quality of Dental Care Service in Bahrain with particular attention towards allocation of Removable (Partial or Fixed) Dentures, Crown, Bridges and the mediating factors that are responsible for better Restorative Surgical service provisions. This study will evaluate the services in the country and also lay research foundations for attaining knowledge and implementing its outcome in practical means. The field of Prosthodontistry concerns mainly with the implantation of supportive frameworks assisting patients with improved looks, aid in better mastication process and making possible better alignments of teeth and dentures (Hakestam, Karlsson & Glantz 1997). This makes the justification for this study more profound as various categories of people are being suffered from dental anomalies in Bahrain. The need to evaluate for effective service provision can better be understood by considering the intervening factors and the level of competencies of professionals

in their fields. The expertise of the Prosthodontists will be evaluated by observing their ability to perform clinical dental processes in their best efficacy.

Problem Statement

The oral cavity is an area of the body that is both specialized and deserves significant dexterity to reconstruct simple microscopic alternations in order to promote normal repair functions. In Bahrain quality dental care has been provided with RPDs, and other prosthetic techniques but the evaluation of the competency and confidence of the dentists need to be evaluated in order to identify measures that can be implemented to improve the service provision.

Significance of the Study

This study is significant because the current studies regarding evaluation of quality of service provision in Bahrain lack supportive grounds and information for data about clinical experiences and actual dental facts or figures. This study will be a source to aid for formulating improvement strategies through analyzing the inferences drawn from interviews conducted with the GDPs with respect to various dental procedures.

Purpose and Hypothesis

Creswell (2003) has emphasized that well documented and formatted questions provide structure and focus for Qualitative Research Design. The following stated research queries will provide the better hypothesis for looking at a possible relativity between variables that allow

dental provision in Bahrain for prosthesis, and will evaluate the nature of expertise for these clinical procedures.

- ✓ To examine the level of delivery of Prosthodontic care to the patients within Bahrain and their satisfaction levels.
- ✓ To assess the nature and quality of dental services for Prosthodontic treatment and procedures.
- ✓ To evaluate the effectiveness for RPDs, Crowns, Fixed Bridges, Complete Dentures and Implant Supported Prosthesis and relevant choices for the dentists in Kingdom of Bahrain.
- ✓ To investigate the degree of competency and confidence within the General Dental Practitioners (GDPs) in providing best available services in Kingdom of Bahrain.

Assumptions and Limitations

It is essential for the success and progression of a research project that it should be based upon considerations for expected assumptions and limitations before the initiation of the study (Cooper, 2008). In order to construct an unbiased interview instrument identifying assumptions before the research may stave off complexities. Identifying limitations also assist in formulating areas for future study options.

Assumptions

- The 30 GDPs who will be interviewed for reasons of executing effectiveness for (Removable Partial Dentures) RPDs, Crowns, Fixed Bridges, Complete Dentures and

Implant Supported Prosthesis, will be assumed to be based upon the instrument that is valid and credible.

- The study participants have access to and understand all the dynamics for fundamental research procedures and acknowledge the seriousness of this research.
- The intended recipients would be provided with a formal invitation to participate and navigate with the primary researcher.
- The participants who have served patients within a span of 10 years that is between 2003 and 2013.
- The participants will answer each and every question truthfully and honestly with no hidden professional benefits.

Limitations

- The study is restricted to specialists that have been lawfully practicing within Kingdom of Bahrain and are pass outs from accredited dental institutions.
- Some of the participants have lesser practice experience than the others.
- Some of the Dentists may or may not remember the exact time from which they have been implanting a particular prosthesis and the information of all receivers for the prosthesis.

- The survey has been conducted among participants that are currently practicing within jurisdictions of Bahrain and have missed some that were out of the country at the time of this research.

Project Plan

The remainder of the Study deals with the review of the extensive Literature and explanation of the research methodology.

The **Chapter 1** of this dissertation will provide a general idea of this study from the perspective of the researcher will develop from, clearly introducing the question of this study and set 'in context'.

The **Chapter 2** of this dissertation will provide a brief overview of relevant Literature and criteria to extract the related review in accordance with the stated problem.

The **Chapter 3** of the study will be the methodology of the research used for describing the study adequately and how will it be carried out together with the detailed procedure undertaken in relation to the critical review and the studies included in the study. The ethical considerations recognized essential for this thesis will also be presented along with the justification demonstrating that this review is not 'biased', by documenting the literature searching and critical appraisal process. The complete methodology and process of the study will be discussed in detail.

The **Chapter 4** of the study will present the analysis and discussion of the data determining the benefits of the studying this problem, assessing and comparing the inferences related to our topic along with its discussion, and interventions.

The **Chapter 5** of the study opens up with the results shortened in the form of a conclusion to the dissertation along with the implications for research and practice.

CHAPTER 2: LITERATURE REVIEW

The section will open up with the review of Literature of the published work related to the topic. It will also highlight the theories close to the subject of research along with the general review of the studies selected.

Search Strategy for Literature Review

For research on the nature and quality of Prosthodontic services in the Kingdom of Bahrain and evaluate the competency and professionalism in practicing GDPs, the inclusive review of most of the studies available was important. The databases used and accessed for this purpose included: ProQuest, PubMed, Cochrane Library, Science Direct and CINAHL. For the data bases searches following keywords were utilized includes Prosthodontic Procedures, Prosthesis, Crowns and Bridges, Quality Service Provision in Dental services and Restorative Dental Surgeries. The bibliographic references of studies selected for the Literature Review were also searched from these databases. All studies meeting up with the explicit inclusion & exclusion criteria for each Literature Review section were retained at the end of the search.

Treatment Planning Process in General Dental Practice

The GDPs practicing in Bahrain have been offering dental services to people with reasons to appraise and limitations to cater. The service provision for people living in rural areas who have lower incomes, higher incidence of poverty, fewer resources and health care provision and have to commute long distances to receive dental care has observed prominent challenges (Zhang & Anderson 2003). According to Bandura (1997), perceived efficacy regards to beliefs in one's own capability to structure, formulate and execute the aligned courses of actions

mandatory to produce desired attainments. The Dental health research project states that in British Columbia utilizes a structured and comprehensive model that assess needs and demands of delivery system, estimates design and costs, clinical expertise and quality control evaluation (DeFrieze, 1982).

The Annual Incidence information within Saudi Arabia can not be collected completely because of the limitations of semi-structures interview format of this study. In order to nullify this limitation on whether the patients visited for specific procedures regularly in order to make sure the needs have been treated adequately. A strict treatment protocol and accurate diagnosis have proven to predict rates of good long term survival for the care of Prosthodontics. Hence, the prosthetic treatment is one of an excellent clinical quality; however, few patients are primarily dissatisfied. This dissatisfaction among patients can be due to the non-compliance between patients and dentist (Sondell, 2004). It is essential for the Prosthodontists to completely understand their patients as these types of understanding predispose the patients for accepting the treatment kinds they need (Listl & Behr, 2013).

Prosthodontics is committed to achieve highest excellence in providing highest Prosthodontic treatment. It is very essential to know the views and needs of the patients in order to ensure the highest level of care delivery. The services to cater high demands of consumers and their expectations for quality care has been steadily increased. The provision of goods and services need to match the consumers demands otherwise they will be insufficient in maintaining competitive edge in the future. The service to Prosthodontic care delivery has an integral part in consumers satisfaction and is theorized to depend on the inter-correlation between expectations and perceive dynamics. This gap forms the parameters for care satisfaction information and forms the primary framework for “Gap Theory” principles. According to Parasuraman et. al

(1985), service quality is a measure of service expectations of patients and care delivery perceptions. In order to remove such gaps, feedback and modifications for care delivery of services provided important instruments for Prosthodontists to monitor and improve their services.

Assessing Competency in Relative Expertise in the Field

According to a research back in 1999, there have been witnessed great variations in professional individual attitudes form the backbone factors when considering decision making in Prosthodontics. The relative competency of the GDPs rests on the reflection of Prosthodontic treatment that has been revolutionized over the years. In 1981, implant treatment methods were not acknowledged and recognized in the treatment planning process for the edentulous patients. At that time, only a conventional RPD treatment was available for those who wanted tooth replacements in posterior fossas. The competent attitude and ability for the Prosthodontics since those times have led to advancements in reduce risks of treatments, cost-effective service and enabling patients to retain their original teeth as they age (Eva-Karin et.al. 2006).

The Prosthodontists must identify the possible treatment plans to the patient along with the potential risks and benefits of a particular dental procedure. The expertise of various specialties of dentists differs in respect of ease they feel in executing the procedure (Goldstein & Rich, 2002). For example, one Prosthodontist feel more comfort in fabricating a fixed prosthesis then a RPD or vice versa. Competencies are highly dependable on variables like , what is the “In Style” type of treatments, as dentists feel attracted towards the use of state-of-art technology as compare to conventional methods (Goldstein & Rich, 2002).

Competency of Prosthodontics also deals with facts of analyzing the advantages of a treatment plan for the patient and to justify the expense and treatment cost to the final outcome of the process. The responsibility of a Prosthodontist lie in the fact of supplying the patient with enough information in order to arrive at an informed decision about the most beneficial treatment strategy. Effective and competitive treatment planning is no more a entity for a simple diagnosis. It is a complex combinations of diagnostics, patients needs, evidence-based treatment inferences and a multidimensional review of the alternative methods. The collection of various authentic procedures form the ground for the practicing dentist to choose best possible treatment for the patient (Goldstein & Rich, 2002).

CHAPTER 3: METHODOLOGY

Qualitative Interview Design

The main argument for this particular research study is to carry out a review to examine the nature and quality of Prosthodontic services in the Kingdom of Bahrain and evaluate the competency and professionalism in practicing GDPs. Creswell (2009), stated that a qualitative research comprise of using exclusive steps of strategies and analysis of inquiry with researchers interpreting what they hear, see, and understand. The method used in this study is qualitative. As compared to quantitative research, Qualitative research with semi-structured interview questionnaire is more subjective, and it is based on unlikely methods of gathering information.

According to Polit (1995), the research design helps researchers to form a fundamental structure that allows the development of accurate information which can be interpreted in order to answer the basic queries of the study. This study follows Qualitative Research Design, exploratory with Semi-Structured Interview Session. This survey allows researchers to evaluate the quality of Prosthodontic care in Kingdom of Bahrain and will examine the competencies of GDPs in providing prosthesis care in the country. A survey tool was used to determine inter-relationships with the study variables (Polis, 1997).

Sampling Frame and Sample

The selected population for this research was 30 GDPs providing dental care in different tertiary and private care settings in Bahrain. These participants were evaluated for providing care in terms of RPDs, Crowns, Fixed Bridges, Complete Dentures and Implant Supported Prosthesis

in children and adults within a 10 year time period. The respondents were interviewed via e-mails in which they were asked ample questions and received quantifiable data through electronic technology. The researcher also made sure that all the participants have access to internet and have adequate literacy for using the computer and appreciating the technical complexities. Kim et. al. emphasized on using an intermediary known to the respondents to distribute an invitation for a survey. Respondents on attempting the interview received an e-mail message from the researcher in their message introducing the researcher, determining the primary focus and purpose of the interview sessions, and a link to the study for the future research to navigate to this research. According to Norris (2008) the confidence interval was a 5 % of 95 % in a study. What follows is a determination of the obstacles for reaching the desired sample size that were selected at the start of the study along with the plan that was constructed to nullify the obstacles. The cheaper cost and rapid speed were the benefits for using the e-mail formats for the survey. In addition, the sample size was large and this was another reason for choosing the internet-based interviews for this study.

Participants and Responses

This research has been conducted through an interview session by using e-mail structure. Respondents replied in positive responses to participate in the study. The request to participate was obtained through written documents and invitation to the respondents was sent to those who have been practicing in Bahrain from 2003 to 2013. As discussed previously, the respondents were 30 in numbers and each of them had experience in Prosthodontic practice. A total of 37 dentists were contacted initially out of which 30 signed the consent form for the study. The response rate was 95 % for the whole research process. The data collected was analyzed under

the accredited experts who themselves were dentists and had no prior knowledge about the respondents. Survey has also asked the respondents to indicate the time and type of dental prosthesis the Prosthodontics have been utilizing. The experience of the respondents in dental practice and follow through has been the primary domain of section 1 of the interview session. This has been an unknown factor for the interview questions and asked the participants how they rank their expertise in Prosthodontics.

Instruments

A self structured interview is designed for the proposed study. This technique was suitable to provide the participants with the intellectual capability to express and concentrate on their experiences. The process of becoming a dentist begins with forming a goal to achieve before and after a dentist enter into another specialty. Therefore, the survey tool was designed to determine the competencies of Prosthodontists in Bahrain with respect to quality service provision for prosthesis. Questions for the interview were also designed in relation with the actual type and length of dental experiences in prosthesis, materials being used to form the implantation items and factors contributing for better service provision and those that form barriers.

The reliability of the instrument used for the study is assessed by whether or not it is consistent in measuring what it states it will measure (Polit, 1995). Polit (1995) further determine reliability of the instrument in terms of thorough and accurate inferences. If a test keeps on displaying a same result, then the instrument is said to have reliability and stability in its structure. Validity of the instrument is dependent on the appropriateness of the questions asked. Questions asked or the instrument actually fits and is directly related to the addressed hypothesis.

Over-view of the Qualitative Semi-Structured Interview Sections

Section 1: For Implications of RPDs (Removable Partial Dentures)

Section 2: For Crown and Bridges and Related Application

Section 3: Restorative Dental Implants

Data Collection Method

For collecting the data information, the research segment consists of semi-structured interview questions. The application of this query will permit the interviewer to capture anticipated and unanticipated responses. For the semi-structured questions, the benefits included to confine the responses of the participants to permit the participants to respond openly to attain research data. For this Semi structure interview, the dental practitioners' competency measurable, has been used to design this research study and it assisted in collecting the data necessary. After successful completion of the process which was 2 weeks interval, the collected data was cleaned and edited for completeness before initiating the process of entering the information into the documentary format.

Data Analysis

The interviews among groups were corrected, reviewed, and transcribed for the masking/removal as well as transcription accuracy for identifying the quality of dental services in Bahrain and relative competency of the Prosthodontists in dental field. The team of research participated in achieving and identifying the analysis consensus. For the interviews, the Qualitative analysis was completed and the essential themes were translated and identified. Independent variables were interview respondents' answers to questions with combination to those designed to elicit the type and length of dental expertise and experience respectively. Other independent variables

are identified as answers to queries regarding oral health status of the patients related to dental experience for the dependable variable of preferred appliances used.

Consent

Permissions for this study were attained from Health Ministry of Health and all prerequisites for the essential research framework have been followed. Content validity refers to whether or not the interview questions will optimally evaluate what is being researched upon (Polit, 1995). Content validity was also adequately addressed through comprehensive Literature Review before selecting the interview tool and methodology.

Ethical Considerations

Ethical consideration is essential because it involves issues of consent confidentiality, and anonymity (Truman, 2003). A written consent was obtained for the interview, and all the participants were advised that they are capable to withdraw from the study at any given time. It is of utmost importance to keep the information of the participants confidential and to ensure anonymity of a participant. The data of the participants is saved by nominating definite numbers to each consent form. This study has obtained approval from the research ethics committee. The researcher has considered the principal ethics to utilize any previous information/literature. No wrong information will be cited in this study. For audio recordings, verbal permission was also sought. The entries were noted in reflective diary, and the actual names of the participants were not disclosed. Moreover, it is essential to keep the convenience of the participants in mind; hence, the time, location and mode of the interview are decided on the basis of the participant's ease.

CHAPTER 4: ANALYSIS AND DISCUSSION

According to Manappallil, following a successful removable complete denture treatment the patient should be able to return to his normal activities, should be able to socialize confidently and should be able to chew foods normally so that the amount of food intake is not comprised. Furthermore, a complete denture must be well-retained, supported and stable so that it functions efficiently. A respondent stated, *“when asked about the prosthetic status among patients he reported; only 3 out of 10 patients receive prosthesis in one or both arches. He further elaborated to the researcher that out of these 3 individuals who receive prosthesis more than half of the recipients are from ages 35 to 44 who need one or more prostheses”*.

Nearly all participants acknowledge this technique’s efficacy and one reported, *“combinations of Removable Partial Dentures with Crowns, Bridges and precise attachments results in better compliance for the patients. Patients are very conscious about visibility of clasps and demand for enhance retention rates and permanent solutions for increasing mastication effectiveness”*. One respondent reported that posterior *“denture teeth can contribute to retention and support. Certain occlusal techniques can be useful in decreasing lateral forces, thus improving retention”*. He proceeds by explaining that *“denture stability is affected by severity of occlusive factors; a reduction in lateral forces and proper occlusion can aid in improving denture stability”*.

In order for posterior artificial teeth to perform their function and provide comfort, masticator efficiency, aesthetics, denture stability, retention and cause no bone resorption they are selected depending on certain criteria which are cuspal inclination, size, shade and material used. A respondent reported, *“complex Implant Supported Restorations require*

multidimensional rehabilitation. Like extraction of teeth, surgical interventions for replacements for implants and fabrication for crown bridges and prosthesis”.

Joy Manappallil explains that with the loss of teeth the psychological state of the patient may be harmed due to the bad appearance. The physical state of the patient may also be affected due to the inability to chew food adequately and hence weight loss may occur as a consequence. One of the options available to restore the functions lost subsequent to teeth loss is by the use of a Complete Denture (Manappallil JJ 2011). One of the most successful innovations in this area has been the introduction of dental implant techniques, which allows for improved comfort and stability when using dentures. Within the field of dental implants there have also been a number of developments and advancements that have brought the technologies a long way. One participant added his views by saying, *“most of the Dental Implants are manufactured from Titanium compatible with biological tissue and is relatively strong”.*

Dental Implants are placed into specially prepared sockets in the jawbone, and each one of these Titanium structures is then left to heal over a period of several weeks or even months. In that time, the surface of the implant fuses with the Mandible to form a stable, almost singular structure which is designed to mimic the roots that underlie the natural teeth framework (Manappallil JJ 2011). Each root is responsible for supporting its tooth, and in a similar way, dental implants are responsible for supporting artificial teeth. According to a respondent, *“this is an example of Biological efficacy working against it, and unfortunately this loss of bone can mean that there isn’t enough Mandibular substance for the implant procedure”.*

Dental implants stabilize artificial teeth by acting like the roots found beneath our natural teeth. The benefits of this are most evident in improved bite strength and more comfortable chewing. Some forms of prosthetic teeth lack stability without implants, and while functional,

can often limit the diet available to a person using them (Manappallil JJ 2011). With implants however, many people find that the use of artificial teeth becomes much closer to that of their natural teeth, with improved biting and chewing capabilities. From this are other benefits like the improved longevity of any artificial teeth being used, as well as a reduction of the discomfort sometimes associated with dentures as they can rub against the gums without the added support of dental implants and cause injuries. Many people who have suffered tooth loss will also have suffered a certain degree of degradation in their jawbone through a process called Resorption. This is where the body harvests Mandible because of the loss of stimulation normally generated by the teeth during mastication process (Sondell, Soderfeldt & Palmqvist, 2004).

One GDP reported that *“the point of forming inclination base for the anchoring is to create an artificial base similar to that found beneath our natural teeth. The roots that lie beneath our biological teeth anchor them to the Mandible, distributing the forces a tooth encounters on daily basis through Mastication”*. The size and density of the jawbone means that it can absorb these forces, and the fact that it is there to stabilize teeth and preserves them in the long run and prevents excessive wear and tear (Manappallil JJ 2011). It is this remarkable system which is in fact responsible for the robustness of our teeth, which can, with proper care, last as long as a lifetime.

Dental implants are fitted through an invasive procedure that requires a surgical incision into the gum to access the jawbone. A respondent responded by saying, *“invasive surgery can restrict access to the procedure as many people, particularly elderly, might not be able to safely go through an invasive surgical intervention. Fortunately Dental implants offered in Bahrain can offer an effective alternative through a much simpler and more straightforward procedure which isn’t quite as invasive”*. He continued by saying, *“bone grafting procedure in Implanting*

prosthesis requires invasive surgery and need accurate estimation of patients biological profiling regarding the strength of the Mandible, Osteopenia or significant loss of Temporo-Mandibular Joint enactment”.

The costs of mini-implant procedures in the private sector will vary depending on the experience of the dentist, the location of their practice as urban and rural places markedly differ in offering quality services, and the materials for the implants used. These are synthetic bone graft materials and have no intrinsic potential for Osteogenesis. Respondent reported, *“bioactive calcium phosphates like synthetic Hydroxyapatite is most widely used for this regard, it has a complete lack of toxicity and form firm adhesions with the bone as a substrate for bone growth”.*

The edentulous cases present a treatment challenge that has often been resolved inadequately. Traditionally, edentulous patients have been treated with Traditional methods from Complete Dentures, but it remains difficult for them to masticate because their Mandibular denture lacks retention and stability. A participant stated, *“the design of commercially available Dental Implants is characterized by shape, type of implant-abutment mating, presence or absence of threads, thread design, surface topography, and chemical compositions”.*

In addition, the stress distribution had maximum values on the cortical bone side and the lowest values were observed on the cancellous bone framework during all levels of the healing period. According to a respondent, *“this is due to the fact that the cortical bone has more stiffness, rigidity and support as compared to the cancellous bone”.* Restorative Dental procedures like inductions of Crowns for cover teeth, restoration of decayed teeth to their natural form, size, color and shapes. When decay in the teeth extended to significant loss of substance (enamel) Crowns and Bridges are been implicated. In Bahrain, porcelain prosthetic restoration has been practiced as is also practiced worldwide. According to a participant, *“after the removal*

of old crowns, in some instances the need to perform additional gum surgery for patients is mandatory in order to save the teeth. The final cemented base is rooted into the teeth allowing ideal length of support for final metal Crowns”.

When faced a challenge of replacing front Crowns in patients with significant tooth decay, a respondent reported, *“the tooth was extracted from the patient’s mouth and it was decided to fabricate the fixed bridge, however, a temporary bridge was fabricated first before removing the decayed tooth. After it, adjacent teeth were implanted by temporary bridge. After evaluating the quality and control of the temporary bridge and complete soft tissue healing final molds were taken and Porcelain Bridge was constructed. Final touches were comprised of restoring color and shape of the teeth in accordance with the other teeth framework”.* Another respondent said, *“there are many choices available for the patients to decide the type and nature of bridges and crown materials to choose from. Few patients selected Zirconia material for their bridges which makes it a better match with the patients other teeth structure”.*

What follows is the analysis of the data collected from dentists by utilizing an e-mail assisted survey studies. The later chapter will discuss the results drawn from this Semi-Structured Interview.

CHAPTER 5: CONCLUSION

In order to draw accurate conclusive evidences the results were evaluated by experts on reviewing data. Each of the reviewer added a constructive and valuable advice. Ignoring the spelling and grammatical errors related comments, the researchers received feedback regarding possible bias that can be depicted in the study. For example, Dr. Salami who has been one of the respondents and has specialist knowledge in the field of Prosthodontic, mentioned that some of the interview questions would have given the participants the very idea of competency issues can form restrictive measures by the authorities later that can seriously jeopardize their ongoing practice. The researcher identifies the importance of this response and made suitable adjustments in the survey in order to eliminate the possible bias.

Another respondent, Dr. Taha addressed the redundancy in some of the queries referring to RPDs insertions. Issues like not using the correct order or numbering were also recognized and were solved before the beginning of the research. The researcher considered the complains of the contributors and remove doubts so that the resultant result was a better oriented and stronger tool. The purpose of this study is to illustrate the quality of services executed by the GDPs in Bahrain and evaluation of Removable, Fixed and Implantation appliances in patients across the country.

This chapter begins with overview of study respondents, their response rates and details about how the data was retrieved and cleaned, the preparation for data analysis and description about responding participants. In order to analyze the collected data, a research needs to undertake responses from survey in accordance with the statement of the research questions and hypothesis stated.

Overall, responses from the respondents do signify the faster adaptability towards latest technology in dental practices, optimum level of performance but the cost of dental care appears to be a barrier in quality service provision to people in Bahrain. The respondents' comments and evaluation of their experiences has been positive that can lead to enable dentists to serve with maximum potential. Our conclusion is that although better services are been provided in Bahrain but still in order to identify the significant discovery further investigation are both desired and justified.

Implications and Recommendations for Future Research

The purpose of this qualitative study in-cooperated in semi structured interview format was to evaluate the quality of prosthetic service provision within Kingdom of Bahrain in Crown, Ridge and Removable appliances. The researcher goal was to illustrate the efficacy by which the dentists are fixing prosthesis and this calculates their relative expertness and competency in the field. A recommendation for the future development would be to investigate the research questions before choosing to design a survey. Data from this research can be utilized to create focus groups. These focus groups can be selected by using national dental organizations with large audiences following federal approvals. The selective recommendation for the future perspective would be to define the basics for what is the criterion for quality dental services provision? How and where the discrepancies are being surpassed without being noticed? Is the standards for prosthesis depicted by GDPs are not in accordance with the international standards of care delivery?

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APPENDIX

Semi-Structured Interview Questionnaire

Section 1:

1. *How GDPs analyze perception of giving a specific treatment plan in accordance with the age of the patient?*
2. *What are the criteria for GDPs to select perfect recipients for a dental procedure?*
3. *How complexities for Removable Dentures will be assessed depending upon the severity of occlusive process or bone resorption?*
4. *What are the best materials or fillers been used in placing RPDs in positions?*

Section 2:

1. *What are the rehabilitation strategies being followed within dental practice in Bahrain?*
2. *What are the materials used in carrying out Supportive Restorative Implants? Are these materials verified to be used commercially and in treatment processes?*
3. *How often invasive surgical interventions are the choice for the GDPs in applying permanent dentures?*
4. *What is the implication of using metal crowns in saving the decayed teeth?*
5. *What are the procedures to transform temporary bridges to permanent bridges keeping in mind the concept of fabrication of bridges?*

Section: 3

1. *What factors demonstrate the efficacy of Biological and Mandibular substance assessment in order to decide to clinically implant prosthesis?*

2. How important is the establishment of diagnosis of effectiveness of basal inclination techniques in implanting prosthesis?

3. How often the use of synthetics like Calcium Phosphates is observed and benefits in utilizing this material in prosthodontistry?

4. For implant prosthesis what is the role of selecting cortical bones over cancellous bones?