Experiment #6: The effect of training on prescription writing and treatment planning.

By

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Introduction

The purpose of this experiment is to help the general dental practitioners (GDP) in effectively increasing their confidence in planning, designing and prescribing a wide range of dental prostheses. The same group of participants that took part in all previous experiments were included in the next experiment. The areas under discussion include designing a range of dental prostheses, assessing how the participants design the prosthesis and making a comparison. Effective prescription writing will also be discussed and guidance regarding effective writing will be included. The experiment will be divided in three parts, firstly effective prescription writing will be discussed, secondly the treatment planning for a range of dental prostheses and lastly a comparison between the findings obtained from the participants and those presented previously.

Part One: Prescription Writing

Changing attitudes and perceptions regarding oral healthcare and dental treatments in developed countries has increased the prevalence of dentate adults. Designing and prescription of prostheses are two crucial elements of prosthdontic therapy and they need to be completed effectively, considering every necessary element (Lynch & Allen, 2003). All biological information needs to be gathered in order to determine the effectiveness of the prostheses. The information gathered needs to be communicated to the patients in an effective manner. Discussions with the dental technicians should also be conducted in order to plan out the best prosthesis suited for the individual case. Through inadequate communication and design information results in the prostheses to be developed with little importance given to clinical and

biological information. Through poorly developed prostheses there is a greater possibility that the designed prostheses might result in tissue damage. In most cases it has been witnessed that the written instructions have not been thoroughly communicated with the technicians (Davenport, Basker, Heath, Ralph, Glantz, 2000).

According to Sheikh (2011) the quality of communication needs to be concise and clear in order to ensure all major elements of concern have been discussed in order to ensure that the technician is able to determine the best prostheses to formulate. Based on the study conducted by the stated author conducted a study that helped in understanding that in most cases the written instructions are clear enough for the technicians who can easily understand what is expected out of them. However 34% of the participants who took part in the study conducted by Sheikh (2011) revealed that the technicians were not clear on what was expected and the dentists' written prescription reveled poor prescription, inadequate information, lack of biological information provided in the prescription.

According to Lynch and Allen (2005) there are a number of ethical and legal guidelines that dental practitioners need to consider while they are in the process of designing, prescribing and fabricating effective and good prostheses. The first step that the dentist considers after a general clinical assessment of the patient is how they intend on proceeding with the case and how can they ensure that the patient is provided with quality care. It is crucial that the doctor considers the situation from biological and clinical aspects in order to ascertain the most suitable and effective prostheses design including the materials to use while developing removable partial dentures (RPD). The findings obtained from this study revealed, that only 50% of the respondents were fulfilling their legal and ethical requirements in terms of how they were prescribing the RPD and how the technicians perceived them. The use of certain material was

based on judgments instead of proper evaluation and assessment in this fashion the people are being provided with prostheses that might not necessary be suitable for the patients. Based on this study and the responses received, it is evident that a total of 50% of the written prescriptions failed to provide the technicians with clear guidance, some even failed to mention crucial information vital for the formulation of proper prostheses. The master impressions made also failed to follow various legal and ethical guidelines provided. Jenkins, Lynch, Sloan, Gilmour (2009) concur that findings gathered from various regions all reveal that there is a communication gap between the practitioners and the technicians is in most cases vague and lacks the proper ethical guidance required. When such situations arise, then the prostheses made will necessarily fail to meet the expectations of the patients, secondly it can cause a number of medical problems.

Based on the ethical and legal guidelines provided for dentists it is necessary that all dentists understand the fact that they have one of the most powerful therapeutic tools that needs to be used only for the advantage of people. Every aspect of prescribing must be considered in order to ensure that the prescription is conducted legally and ethically. Following are a number of elements that dentists must keep in mind while writing prescriptions.

Scope of Authority

The scope of authority in prescription writing is granted once they begin practicing; it is not limited to drugs only and rather focuses on a number of key elements that a dentist might provide its patients. Firstly it is crucial to ensure that the prescription is carried out in good faith and that the prescription has to have a dental purpose which is legitimate. The prescription must be issued by the practitioner in the course of practice. In case a written prescription meets and

fulfills the validity test there are no restrictions upon the practitioner. Crucial for the good faith aspect with the validity test are legal, ethical and professional it is crucial that the dentist complies with the guidelines provided regarding record keeping and the standards of care. In the case of prescribing RPD it is necessary that the prescriber begins with understanding the problem, the issue and the solution must be considered and assessed. Once a choice has been made based on the most effective solution that can be implemented it is necessary that the practitioner focuses on obtaining as much personal information possible in order to understand and determine how to go about in the case of designing the prostheses. Without obtaining biological information and background details there is no possibility that the practitioner will be able to assess the most suitable dental retainers. The process, the materials used and the selection of dentures is crucial whether the patient requires partial or full dentures. Secondly while making such a prescription it is advisable that the practitioner consults with either another physician or the technician in order to determine the most suitable process to follow and the best design that would suit the patient. Only once a mutual consensus has been achieved only then should the development of the prostheses begin. Written prescriptions often fail to communicate a number of elements that can be communicated in person, still the practitioner needs to ensure that all the details crucial for the creation of the right prostheses are included and considered. With the accurate and proper provision of information there is always a possibility that a technician might not be able to create the right prosthesis causing unnecessary pain and suffering to the patient.

Responsibility

The practitioner has a great responsibility while making prescriptions that need to be considered. It is crucial that the doctor remains aware about a number of crucial elements. Firstly

in terms of the medication and the prostheses the practitioner has a responsibility to ensure that all medical histories of the patient is consulted and assessed in order to make a better prescription and to ensure that the prescription does not harm the patient in any way. Dental practitioners need to be aware of the changes in practices the best approach to deal with a problem and the medication that needs to be provided in a certain case. Without proper consideration regarding a number of crucial elements there is a possibility that medications might clash with the prostheses. Hence it is the responsibility of the practitioner to understand all side effects of the medications and how they might interfere with the proper implementation of the dentures. Understanding the medications can prevent a number of complications that can arise otherwise. Similarly dental treatment plans needs to be modified once all details have been obtained regarding the patient. The best practitioners need to be constantly aware about some of the changes taking place in the practices and how they can provide the patient the patient with the most suitable and accurate procedure. It is necessary that they understand how each medication and procedure affects the person and how they can be certain that the process is not affected and that the interactions do not affect the patient. Obtaining a current medical history is the responsibility of ascertain a patients regimen and all medical problems experienced in order to determine whether the patient can undergo the process of obtaining the RPD. The patient might be unaware about the necessity of providing all information, it might be possible that they might consider certain information of no use, whereas the information could be vital. Thus, it is the responsibility of the doctor to cross check all details, assess for any drug abuse and addictions in order to make sure that there is not information withheld. Obtaining all information is crucial on behalf of the practitioner.

Clearly Communicating the Information

Since the practitioner will be working with a technician, it is crucial that all information that might seem important it gathered. Secondly the information needs to be clearly provided to the technician. In most cases it has been witnessed that the practitioners fail to provide all information accurately. Every detail needs to be shared and passed on to the technician who might in return need the information in order to select the right material for the denture or generally how to go about with the overall process. By providing unclear information the practitioner are risking the life of the patient. Instead of the technician seeking clarity and guidance regarding the findings presented the practitioner should accurately present them in the first place. Such careless mistakes can be avoided if the practitioners understand their responsibility and the pain and mishaps they can create if they fail to provide the patient with what they were looking for. The practitioner being the one who obtained the information is in a better position to understand the details that are necessary to be provided and the information that needs to be kept off. Without proper communication the practitioner will not be able to carry out the process effectively as the technician responsible for creating the dentures will fail to make them accurately. The selection of material is crucial and if the practitioner failed to provide the required information accurately there is a possibility that the information crucial for the development of the right dentures was withheld causing the technician no guidance and the chance to make the RPD without proper guidance.

Discussion

The biggest issue that the dentists and technicians face while creating the RPD for the patients arises when effective communication does not take place. Communication is the first step that needs to be considered in order to assure proper development takes place. It is crucial that the practitioner makes sure that the technician understands all the respective details of the patient and the most suitable measures that need to be taken in order to ensure that the RPD are created in the most suitable manner. Once the practitioner and the technician effectively communicate with each other regarding the details and the requirements of the patient then there is a greater possibility that the technician will make every possible effort in order to create the dentures in an effective manner.

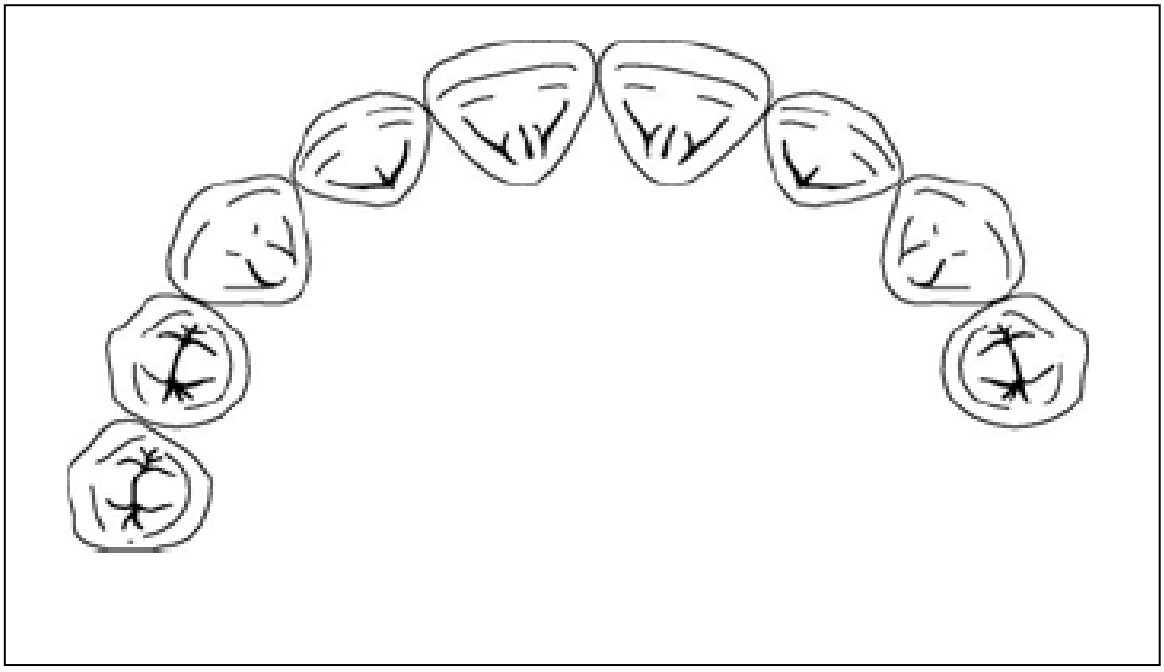
Ensuring clarity and communicating with the technicians regarding the needs and requirements of the patient will ensure that the technician meets all the needs of patient. Once the practitioner conducts a proper assessment of the patients mouth and understands the situation. Creating a mold and selecting the right material is crucial as it ensures that the patients needs are brought into consideration. By selecting the mold and ensuring that the right materials are used can ensure that the right product is made for the patient. Such details are required in order to ensure that the prescription is clear and that the details of the patient are kept in mind. Without proper consideration of all elements that are important regarding the patient can cause a number of issues to arise. Prescriptions can be enhanced only once the practitioners realize the importance of information and the details that need to be provided. When all information is accurately provided to the technicians then there is a possibility that the prescription will be written effectively and the RPD will be made according to the requirements of the patients and that the medications and all other products are chosen in order to ensure that the patient is

provided with the most suitable and effective dentures that meet the needs and requirements of the patient. The proper selection and consideration regarding the needs to the patient will ensue that the prescription is accurate and that the needs to the patients are accurately met.

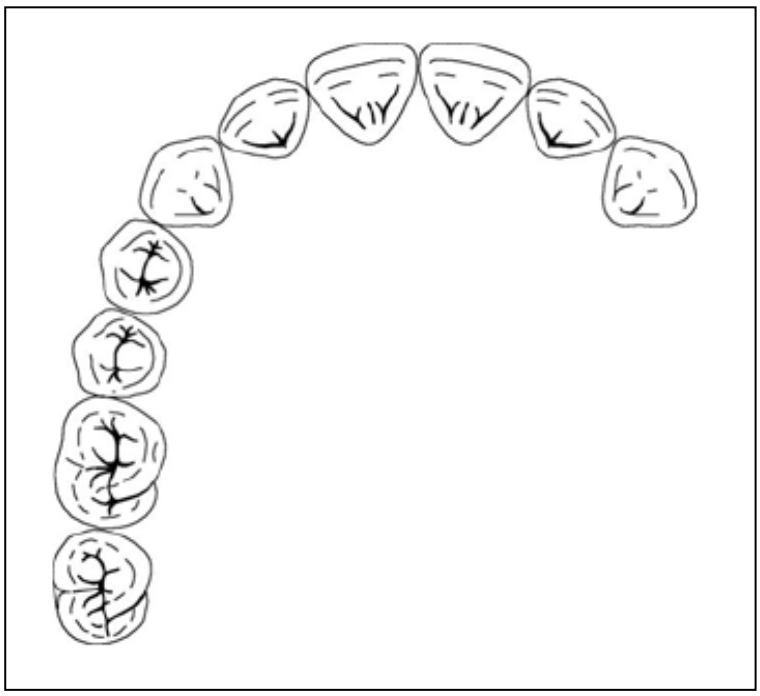
Part Two: Designing a Range of Prostheses

Initially there were a number of classifications and systems used in the formation and designing of the prosthesis. However, traditions have changed considerably and there are presently four classifications that can be considered in order to determine the most suitable design for the prostheses. Teeth can be classified based on four classes that can accurately describe the present condition of the patient and how it can be resolved accurately. It also helps in choosing the most suitable and best approach while designing the RPD. Based on the four classification, selection of class and the designing of the prostheses becomes less complicated and easier to perform.

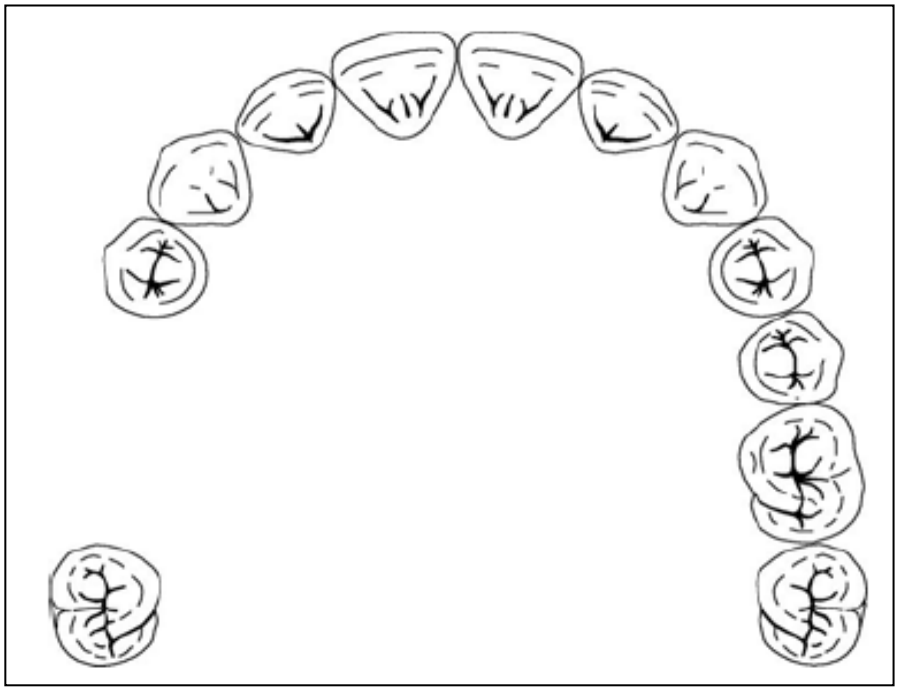
Class I - bilateral edentulous areas located posterior to all remaining teeth.



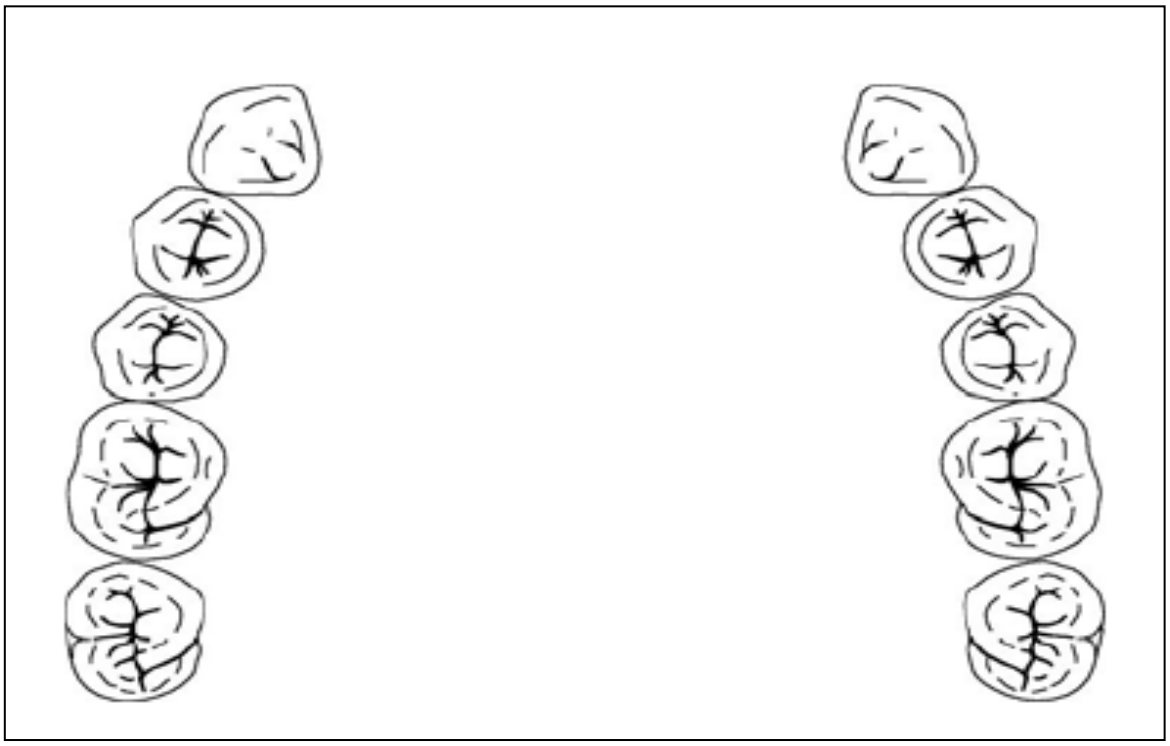
Class II - unilateral edentulous area located posterior to all remaining teeth



Class III - unilateral edentulous area bounded by anterior and posterior natural teeth.



Class IV - a single, but bilateral (crossing the midline) edentulous area located anterior to remaining teeth



Preliminary Impressions

While carrying out the preliminary impressions it is necessary to ensure a proper selection of the right stock tray. A space of 5-7mm needs to be present between the tray and the tissues in order to ensure that a bulk is provided for the purpose of strength and accuracy of the material. The selection of the tray needs to be short from the labial vestibule and should be a little bit beyond the vibrating line. There is also possibility that compounds can also be placed on the peripheries of the stock tray in order to extend the borders when needed. Extensions can be considered once the coverage of the critical anatomy is provided. The purpose can be for the

displacement, distortion and the vestibular tissues, which in most cases needs to be registered with precision in order to obtain an effective peripheral seal on a denture. The tray needs to be modified along with the impression compound or in certain cases autopolymerising acrylic. In most cases a high viscosity alginate needs to be used since this will compensate for the lack of fit within the stock tray. Once a thin layer of adhesive needs to be applied to the tray before the mix of alginate is placed in the tray.

Laboratory Prescriptions

Since the initial stages and all subsequent stages in order to determine exactly those elements which are needed not only for the present appointment but for the subsequent ones. Another factor as discussed previously is the fact that the prescription card needs to discuss in detail the requirements, secondly all findings must be clear and comprehensive. If there is the slightest chance that the technician might be confused or might misinterpret the prescription. In such cases the technician and the practitioner need to meet in person and discuss the case. During this stage it is necessary during this stage that the casts created are poured within the dental stone and the type and material used for each of the individual trays needs to be described by the practitioners. It is also noteworthy to mention the fact that practitioners and technicians need to discuss in detail the next step that needs to be taken and take all required measures accordingly in order to ensure that the technician does not end up making mistakes which can cause the patient any harm. If the laboratory does not understand the prescription or if there is the slightest doubt, then the technician needs to make all necessary measures in order to determine the right course of action required.

Dealing with the required material

Infections are common particularly when materials are being used. For that purpose the technician needs to consider a number of elements in order to ensure that the material used remains free from infections. The technician needs to carry out pre-measurement of all the materials used. Secondly the containers and all other material, substances and equipments should not be taken out of the laboratory. All substances, materials and other elements need to be handled with care the practitioner and technician and all those associated with the material must use protective gear. They should keep their hands properly protected with gloves. When such measures are taken it ensures that all infections and germs are kept away. Proper handling and effective management of the products is crucial since the slightest mishap can cause the product to lose its effectiveness, it can also develop issues which will ultimately affect the person. Hence the products need to be dealt with in an effective manner. For instance the materials used need to be kept in the right location. They need to be kept away from heat and humid environments. When in the presence of heat and humidity there is a possibility that the product will lose its effectiveness and it will also cause deterioration of the powder.

In order to effectively use all materials and to understand certain mishaps which are likely to take place it is necessary to ensure that the products are dealt with according to their properties and their traits. Containers, substances, bowls all utensils which have already been contaminated with dental stones should not be used for the remaining process. Gypsum or the dental stones used can actually lead to increase and acceleration of the alginate. Additionally alginate contamination can have a series of issues and can cause problems to the overall development of the denture. Even when a bowl contaminated with dental stone is used for any of the process it will have severe consequences. The most severe issue lies in the fact that such

contamination can cause the cast or model to lose its strength. Such models will rapidly lose its strength and will cause the person problems; they will cause them pain and will also need to be replaced. Hence by making small changes it is possible that a number of problems can be averted for instance keeping all utensils used for the alginate and the dental stone should be kept separate.

Working with the Alginate

Using alginate can be considered tricky since the slightest error in the measurements can have serious consequences hence it is necessary that the right measures are taken in order to avoid all mishaps. Firstly, since the alginate is in the form of powder, ensure that it is fluffed up before measurements are taken, this will ensure that there are no empty spaces which have not been seen. Lightly using the substance will ensure there is no void created. It is also crucial to ensure that the scoops are not tapped more than once or twice since that will cause the mixture to turn far too think, lumpy and hard to use. While making measurements, certain technicians often consider using volume, as they feel they will be able to create a more reliable mixture. This is however, not the case and instead of volume measurements need to be made according to the weight. It is also crucial to ensure a measurement has been created in order for the ease of the technician and to ensure no mistakes are made. The setting time can often be considered as an issue, in order to resolve the issue various different measures are taken with the intent of being able to create the right mix which is able to set on the right time. In order to reduce the set time the biggest possible mistake which is most likely to arise is when the content ration of water and mixture is altered. Instead the temperature of the water needs to be changed. Other processes can affect the strength of the model and can cause it to become fragile. It is also necessary to ensure that the technician regularly spatulates until a smooth mixture is prepared and there are no lumps.

Making the Impression

In order to make a model that can be used effectively it is necessary that the best first impression is taken, if the impression will not be carried out with efficiency there is a possibility that the model will not be accurate for the patient. It is necessary that the teeth are lightly dried and all mucosa is wiped away. However, if the teeth become too dry, then there is a possibility that the mixture will stick to the teeth. In such a case there will be many problems for the patient. Hence such incidents need to be avoided. It is also necessary to ensure that all alginate is wiped onto the occlusal surfaces of the teeth. While setting the tray it is necessary to ensure that it is not poured on the bottom teeth or the residual ring. Since this can cause distortion of the tissue and it can also cause issues in the movement of the teeth. It is also necessary to ensure that the right time is spent on waiting for the mold to dry. Usually it takes a minute in order to set, pulling the lip up will allow air to break the seal with the tissues. This will also make it easier to remove the impression. Only a few drops of water can also help in breaking the seal. During this stage it is necessary to ensure that the seal s broken and removed as fast as possible in order to ensure no permanent deformation takes place. Once the impression has been removed it is necessary to place the impression in a damp towel. Once taken out the impression should not be kept alone and left flat on its own instead it should be kept in contact with some surface until the stone has not set. This will ensure there are no changes in the actual mold and the shape that it needs to take. Once the master impressions have been made the next step will include the use of metal materials.

Creating the Metal Framework

For the creation of the metal framework it is necessary to ensure that the metal model also conforms to the original design. In order to ascertain how effective a certain framework it is necessary to check whether it can fit into the master cast. In case the fit is not smooth and is unsatisfactory, then it will be more suitable to start over again since the mold will not fit into the mouth smoothly. All other components which were created with the intent to keep them clear of the gingival margin area needs to be checked in order to ensure that the clearance is effectively met and that there are no issues. Once placed in the mouth, the positioning and checking whether all clear components are clear is necessary. Checking the occlusion is necessary in order to ensure there are no premature contacts which have resulted as a result of support units. Visual examinations should be performed thoroughly in order to ensure there are no issues with the framework. In case of any premature contacts it is possible to remove them easily and without problems. It is necessary at this stage to ensure that the metal framework it perfect within the mouth the slightest issue will grow into a greater problem if attention is not paid over the appropriateness of the metal framework. Once the metallic framework has been deemed suitable and satisfactory the technician can start setting the teeth, once a mold and shade are chosen.

Trial Denture

This can be considered as the last stage where conducting modifications is possible, before the wax used is replaced by acrylic. In order to ensure there are no mistakes and the present dentures are effective it is necessary to examine them and to ensure there are no mistakes. Ensuring that the adaptation of the dentures on the casts has taken place, occlusion also needs to be checked. Checking the artificial teeth and ensuring that they are adjacent with the

natural teeth is necessary. The arrangement of the anterior teeth is also important and needs to be considered. The appearance matter the most, hence the positions of the teeth and the anterior teeth need to be focused on. Once all changes and modifications are determined the next step is to ensure that the all modifications are clearly specified and determined by the practitioner who will pass them over to the technician. Properly communicating the changes and modifications required will help in facilitating the technician in making the right chances and ensuring there are no issues.

Denture Insertion

Ensure that the dentures are perfect that there are no sharp edges or acrylic hangings; place the dentures in the mouth. When the denture is placed within the mouth ensure that the denture and the tooth located in the undercut area never touch each other. Check the occlusal contact by constantly asking the patient how the denture feels in the mouth, visual inspection can also ensure that the denture is inserted properly and that there are no issues. Once the insertion has been finalized and the overall appearance seems suitable then the practitioner needs to advise the patient on how to look after the denture, when to take them off and how to ensure they are kept properly and that there are no issues.

Part Three: Designing RPD based on participants

According to most of the participants the first step that needs to be taken in order to design the RPD it is crucial that the practitioner assesses the condition of the mouth, and understands the dentures needed. Determining the required dentures and the needs of the patient are crucial during the first stage. Once determined the practitioner must gather all information

associated with the patients, his medical history, conditions, drug usage everything needs to be understood. When all information is gathered only then can the practitioner focus on providing all the gathered information to the technician.

The respondents majorly claimed that the next step includes deciding about the master impression. The next step includes assessing the mouth, selecting the right stock tray and making all required changes in order to ensure the first impression is gathered in ease. Once the impression is made and all the details are finalized. Selecting the materials to be used and assessing how the impression will be taken are crucial steps that will ensure that the mold is accurate and that it fits the mouth in ease.

The next step indicated by the participants, was the prescription. Once all details have been determined and the impression has been formulated the next step that the respondents considered as the most important stage included sharing all the information obtained from the patient, secondly the impressions of the mold should be provided to the technician. Here there is a difference related to how the overall process was carried out the practitioners were least concerned with how the information was interpreted by the technicians, instead they claimed that the impression will facilitate them with understanding the mold and the denture required. The participants all felt that the technicians understand how to proceed on their own and if they were constantly pushed and monitored it would affect their work. They also claimed that if the technician does not understand what is required, then they need to come to the practitioner. They further claimed that the practitioner has countless cases and no time to constantly assure that the technicians understood what was expected from them. This is a practice that must be changed as the more they focus on ensuring perfection the first time around the more they will be able to obtain what they require.

The next step is establishing the jaw relationship and determining how the jaw and the denture associate with each other. By effectively creating an association between the jaw and the denture any modification required can be considered at an earlier stage. Once the mold is deemed suitable and all issues are removed then the final impression using wax can be carried out. Once the final impression has been obtained the metal framework is created. Here it is necessary to mention that the constant monitoring and effective perusal of the mold was considered optional. This step is actually crucial and it needs to be carried out since it ensures that the final denture will be perfect for the patient.

Another element which needs to change is the trial denture, most of the respondents strongly believed that once the master impression is accurately taken then there is no need to carry out the trial, whereas ensuring the dental impression is formulated with perfection is a tedious task. The next step is the fitting followed by the final appointment where the practitioner, technician and the patient meet in order to discuss any issues and to check how the denture is adjusting.

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