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Research Article

COMMUNICATION IS THE KEY BETWEEN THE DENTIST AND THE LABORATORY TECHNICIAN

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ABSTRACT

Aim: This study was aimed to review the role of communication between dentist and laboratory technician. **Methodology:** A systematic literature search was performed electronically and hand-searched with terms of Communication, Work authorization, Technician, Laboratory. The search was carried out through Medline via PubMed, Wiley online library, Ebscohost, Science Direct, as well as the Google Scholar for articles published from 1965 to 2020 and found 45 articles. After exclusion of non-English articles and abstract screening finally 15 articles were found to be relevant. **Results:** Different articles described various communication methods between dentist and laboratory technician. The literature search revealed 10 articles in PMC, 8 articles were found on Wiley online library, 8 articles in google search. Additional 19 articles were identified by hand search. **Conclusion:** Increase in the patient's knowledge and needs, requires an interactive relationship between dentists and dental technicians for achieving a successful outcome. Clear effective communication of design features between dental practitioners and dental technicians has long been recognized as a main factor that contributes to the production of high quality fixed and removable prostheses. Insufficient design information to the technician results in a prosthesis that is constructed with an inadequate consideration to important clinical and biological factors and this can cause tissue damage. This article highlights the importance of communication between the technician and dentists.

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INTRODUCTION

Communication is defined as the act of sending and receiving information, either verbally or nonverbally. This can be observed in a variety of ways, including speech, writing, charts, maps, and photographs. Individuals have the ability to communicate via these numerous methods, with the overarching goal of achieving a level of understanding between the one delivering the information and the person receiving it.[1]

In order to create intraoral prostheses with acceptable fit, function, and aesthetics, prost hodontics requires a synergy between the dentist and dental technician. Because most dental technicians are based remotely and rarely visit the patient, effective communication between the two sides is critical.[2]

MATERIALS AND METHODOLOGY

PubMed/Medline, Wiley online, and Google search were the electronic resources used to review the biomedical literature, using the following keywords Communication, Work authorization, Technician, Laboratory.

In total, we found 45 relevant articles. The literature search revealed 10 articles in PMC, 8 articles were found on Wiley online library, 8 articles in google search. Additional 19 articles were identified by hand search. As a criterion for the selection of these studies, we included only the articles published in English; after reading the abstracts, we selected 15 articles that fit these criteria, with the publication dates ranging from 1960 to 2021 (Flow Chart -1).

Flow Chart -1

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Means of Communication between the Dental laboratory and Dental clinic

Paper-based communication, online web-based communication, and the Dental Office–Laboratory Web Content Management System (WCMS) are the three most commonly utilized means of communication between the dental laboratory and dental clinic.[1]

Paper-based Communication

A laboratory work authorization from comprising handwritten instructions from the doctor to the dental technician that identify the materials to be used and the type of prosthesis is the most common method of communication. A dentist fills out a work authorization form to order lab work from a specific dental laboratory in ordinary practice. The dental assistant and other members of the team then make arrangements with the laboratory for pickup, payment, and delivery. This paper-based recording has numerous severe limitations, including a lack of visual engagement and miscommunication between the laboratory and the clinic. Due to missing information, unclear handwritten instructions, or even missing of lab work, time may be wasted on both sides. One of the most significant issues that the clinician and technician face is poor communication.[3,4]

Online Web-based Communication

The internet has become the most convenient and accessible means of communication. People are increasingly reliant on the internet for banking, bill payment, and shopping.[5] Data transfer between the dentist office and the dental laboratory has become easier because to recent advancements in internet connectivity and data uploading/downloading. In addition, emerging technology in dental offices, such as digital shade matching and scanning impressions, could facilitate the transition from paper-based to web-based communication between the dental office and the dental laboratory.[6]

Dental Office-Laboratory Web Content Management System (WCMS)

A web content management system (WCMS) is software that provides website authoring, collaboration, and administration tools that enable users with little or no expertise of web programming languages or markup languages to easily develop and manage website contents.[7] It is utilized to develop long-term relationships and information sharing between dentists and technicians, as well as between dental clinics and dental laboratories.[6]

Medical data, photos, and patient records can all be shared and accessed online using an office-laboratory WCMS. Dental laboratories can use theinternet to track and manage lab cases and payments. Additionally, dental clinics and dentists can follow lab cases and provide alerts regarding their status. Both have an account and may see their lab case history, current balance, and pay bills online, minimizing paperwork and time spent on lab case processing. A dental laboratory can set up its own communication system with the dental clinics it works with.[6]

Commercial vs Open-Source WCMS

Commercial and open-source dental office-laboratory management systems are both available. Users may pay a licensing fee to access a commercial WCMS, which is a website produced and owned by an individual or a company. While open-source WCMS is a website that is free to the public and has its own community of contributors, which includes web developers from across the world who design and share plug-ins (software add-ons) for the software.[8]

Work Authorization form

Content

The information contained in a work authorization form should include: (1) the name and address of the dental laboratory, (2) the name and address of the dentist originating the work authorization, (3) the date of the work authorization, (4) identification of the patient, (5) desired completion date of the request, (6) specific instructions, (7) the signature of the dentist, and (8) the registered license number of the dentist. All of these essentials can be accommodated in a simply designedform.[9]

Function

A work authorisation performs four vital purposes. These are: (1) It specifies the laboratory processes to be performed and determines the acceptable minimum level of quality for the services provided. (2) It serves as a safeguard for the public against the unauthorised practice of dentistry. (3) It serves as a safeguard for both the dentist and the dental laboratory technician in the event that they are involved in a litigation to settle a dispute. (4) It clearly defines the dentist's and dental laboratory technician's responsibilities.[10]

Characteristics

Work authorizations must be legible, clear, succinct, and simple to comprehend. It's unrealistic to expect laboratory personnel to be specialists at decoding. A work authorization must include enough information for the technician to study and carry out the request. Many dentists are overconfident in their belief that a request may be satisfactorily met without sufficient guidance.

There is no one work authorization form that can provide precise directions for completing the laboratory phases of removable partial dentures, crowns and fixed partial dentures, complete dentures, or orthodontic laboratory operations. Individual prescription forms are required because to inherent variances in the different types of restorations themselves, as well as differences in the laboratory phases required for their completion.[9]

Work authorization for RPD

Work authorization forms may be designed in such a way that only a small amount of writing is required to convey detailed instructions. The form might include printed lists of items and requirements that must be authorised by either a "check mark" or a "fill-in." There's even a spot for you to write down the metal you want for the structure. A check mark can be used to indicate the substance of the denture foundation. It's impossible to glean this information from master cast markings.[9]

On the work authorization form, a section has been set aside to provide the technician with information about the teeth you've chosen. The dentist must continue to be in charge of tooth selection. The size, number, and positioning of the denture teeth, as well as the material from which they are formed, all

have a role in the success of the removable partial denture. A well-deserved show of kindness and respect for the laboratory worker is recommended. Please precedes the general request, and thank you concludes the specific instructions. Is there any other combination of three words that promotes better relationships?[10]

When the master cast is sent to the laboratory for manufacturing of a framework, a colour code index can be utilised to describe the markings on it. The framework is outlined in green pencil; red identifies the desired placement of finishing lines on the framework; and black lines indicate the height of contour on teeth and soft tissues developed during the cast survey. The colour coding makes deciphering the markings on the master cast much easier. Waxing specifications for gold, chromium-cobalt, or titanium alloy castings must be provided to the technician and are included in the work authorisation form.[10]

Although the dental laboratory technician may be asked to execute specific technical parts of the service, the dentist is responsible for all phases of a detachable partial denture treatment in the strict sense of the word. The laboratory technician, on the other hand, is only accountable to the dentist and never to the patient. When a dentist delegates the design of a removable partial denture to a less qualified individual, he or she takes the risk of receiving a subpar removable partial denture service.[9]

Work authorization for FPD

The information should include but not be limited to 1. The name, gender, and age of the patient; 2. The date of the request; 3. A detailed description of the work necessary and a diagram of the design, if appropriate, for the prosthesis (margin design, pontic design); 4. The specific type of materials to be used in the construction of the prosthesis; 5. The shade of the prosthesis and the shade guide used; 6. Information regarding customization in staining, if applicable; 7. The type of occlusal scheme; and 8. The signature, license number, and telephone number of the requesting dentist/specialist.[11]

DISCUSSION

Transferring the right shade to the technician is another difficult component of communication. The most often used reference point for communicating tooth colour is shade guides.[12] However, changing the shade entails more than simply giving the technician a "shade number." It should include specific details about the colour, surface texture, shade characteristics (e.g., enamel crack, hypocalcified patches, incisal translucency, incisal halo, and so forth), and other characteristics. To improve the result of shade matching, draw an outline for the teeth and divide it into vertical and horizontal portions to clearly prescribe the colour and all shade characteristics.[6] Taking a photographic image of the tooth to be matched and sending it to the technician is a better technique to transfer the shade. Although this photograph cannot express exact colour, it can provide sufficient information to the technician regarding colour and shade characteristics by displaying an image of the tooth next to the selected shade tab.[13]Tulbah H et.al, suggested that Dental students should be educated early in their pre-clinical courses and later in their clinical years about proper work authorization form writing. Additionally, they should understand their legal and ethical obligations as dentists.[14] Christensen suggested the following concepts for dentist and technician to improve dentist-technician integration and communication and, ultimately, to improve patient care: Attending continuing education courses together, Holding private meetings, Increasing the quality and scope of communication in laboratory orders, Incorporating technicians into dental practices or buildings, Making postoperative telephone calls to technicians, Initiating or joining study clubs or joining dental organizations that include both dentists and technicians, Promoting integrated education of dental and laboratory technology students.[3]An alternative to the more traditional methods of visual shade analysis and transfer is to use a contemporary digital-shade–analysis device. These devices use an intraoral colorimeter or spectrophotometer and have been shown to provide accurate and repeatable shade determination. Aside from the obvious advantage of predictable shade analysis is the ability of some systems to perform a "virtual" try-in, thus allowing the technician to verify the color accuracy of the fabricated restoration before being tried in clinically.[15]

CONCLUSION

Dentist and technician communication must be two-way. Improving communication between the dental office and the dental laboratory will save time and effort while also improving the end product's quality (the prosthesis).

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