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Teaching Dental Students How to Obtain a Pain History

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ABSTRACT

The role-playing method shown in this report was used as a teaching strategy on 153 dental students enrolled in the Orofacial Pain and Temporomandibular Disorders course, with the goal of helping students recognize the impact that thoughts and feelings have on pain perception and to facilitate learning on how to carry a pain history. Role play was applied as an assignment, using a video format, looking for a deeper learning of the elements on a pain history with the aid of the Spanish mnemonic SOCRATES: S (site), O (onset), C (quality, calidad in Spanish), R (radiates or localized pain), A (relief-associated factors), T (timing or frequency), E (exacerbating factors), and S (severity). Each student had to create a two-minute video portraying an interview with an actor playing a patient with orofacial pain. The interviews were analyzed, and four levels of role playing were developed to determine how prepared is a student to face real patients. Moreover, these four levels of role-playing when carrying a pain history are explained in detail. The students evaluated the overall teaching strategy emphasizing on how it facilitated the learning process of a subject that has always been considered highly complex.

Keywords: Role Play; Orofacial Pain; Pain History; Learning Temporomandibular Disorders; TMD

Introduction

Within this paper you will find a well-recognized tool, role-play, used as a teaching strategy with the goal of learning how to collect a pain history, while soft skills like verbal communication and empathy are reinforced. In addition, the reasons for the application of the strategy in the framework of the teaching context of a specific course and its objectives are also described. This specific didactic strategy was applied as an assignment, using a video format that portrayed the connection between a practical activity and the learning that resulted from it. Within this report, the process, development, and evaluation of the experiment is explained.

Background

Pain is an emotional and sensory experience associated with real or potential harm. It should be studied considering the biological (Axis 1) and biobehavioral factors (Axis 2) that impact pain perception [1]. For this reason, in the orofacial pain courses, situations associated with the Axis 2 are analyzed. This represents a unique contribution to the curriculum; it helps the development of an emotional framework to understand the biological aspects of the patient's experience [2]. This course is taught in the final years of dental school when there is ample theoretical foundation since the basic areas of health sciences (anatomy, physiology, biochemistry, pharmacology, etc.) are developed in previous semesters. The main purpose of the course is to educate the future professional in dentistry about the complex experience of facial pain and to generate empathy for their upcoming responsibility, which will be the care of their patients. As it is well known, the area of temporomandibular disorders and orofacial pain has been subject to debate since it was just recognized as an individual field by the American Dental Association on March 31, 2020. The virtual learning context presents specific challenges for the learning process. Achieving an eloquent and natural performance while collecting patient data is a difficult task. Collecting the history of pain, in particular, may benefit from a guideline or protocol. Moreover, the global COVID-19 pandemic isolated people for months and radically transformed the dental education when virtual teaching became mandatory in different universities around the world. Some consider that this contributed somehow to the "loss of human connection" [3].

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Interview taking or recollection of medical history is a fundamental skill that every professional on the health care area must develop during their training. Some authors even indicate that in more than 70% of cases, clinical history can lead itself to the diagnosis [4]. Currently, most health science students interact with real patients without having a solid foundation in terms of taking an adequate medical history. According to Huag et al., this is due to lack of time, lack of space in the curriculum or a deficient ability to transmit this knowledge [5]. The role-play strategy and standardized patient simulation have been reported to be efficient tools to develop interview skills in different health professions [6]. Regular teaching methods involve a combination of lectures and case resolutions studies; this classic approach have shown efficacy on how students develop non-technical skills [7]. On the other hand, several teaching centers prefer a standardized patient simulation as a teaching method since they feel that it brings more realism to the training because it involves the participation of a trained actor. At the same time, due to ethical and safety considerations, these methods provide a safer environment for the student [6,8]. Moreover, the role play method has several advantages when applied on classes with a big amount of students: it requires less organization, less financial support, and it is easier to analyze [9].

Design of the Teaching Strategy

The global situation due to the pandemic has further increased the need to develop interpersonal interaction skills in health sciences students. Because of this, different didactic strategies must be taken into consideration to face these new difficulties without affecting training of future professionals. Some examples of these strategies are: role simulation or "role play", recorded interviews, virtual interviews, feedback using videos with appropriate or inappropriate interviews, among others [10,11]. The "role play" or role simulation allows students to practice a situation they will face in the future. Students in early stages of their preclinical training, can practice basic skills of the clinical interview without having to formulate a formal diagnosis or treatment plan; this reduces pressure and facilitates learning the interview sequence [4,12]. Simulation is widely used when teaching dentistry to learn procedures; however, it has now been introduced in the areas of oral diagnosis to practice taking a medical history and interviewing. In the current era, it is recognized that communication skills with the patient are vital for the dentist to achieve an adequate relationship of trust in which the mutual exchange of information is of crucial importance for the development of the treatment. In different research experiences, students who accepted this teaching method obtained higher scores in medical history and medical records [4,5,13].

One of the recognized advantages of the recorded role simulation is that the trainee can analyze the interview later and recognize areas for improvement. Recording the interview also allows the teacher to give positive and formative feedback. In a study carried out by Sanderson et al., it is recognized through self-evaluation of dental hygienist students that having a guided practice helps clinical evaluations [14]. "Role play" gives students the opportunity to put into practice, in a pressure-free environment, how to collect a pain history while facing the challenge of interaction. Talking with someone face to face requires a comprehensive and individualized approach. In this process, theoretical concepts are transformed into much needed skills. This strategy will allow the student in preclinical training to receive positive and formative feedback before being in front of real patients. Specifically in orofacial pain, the clinical interview is of the utmost importance. It is the professional's first contact with the patient and many factors become vital: the patient and his non-verbal language, and the interviewer's ability to generate a therapeutic relationship that may develop in a trusting encounter. Moreover, based on the clinical examination, interview, and pain history, the clinician must be able to generate a differential diagnosis and a potential treatment plan. In the case of this didactic experiment, the "role play" is selected as a strategy to facilitate the students to learn and remember how to obtain a history of pain while, at the same time, managing to put into practice soft skills before being exposed to the real clinical environment.

Methodology

The strategy was implemented with participants enrolled in the "Temporomandibular Disorders and Orofacial Pain" course. These dental students are in the "preclinical" stage of training. In other words, they have not been in contact with real patients yet. At this stage, most of them are highly motivated to learn and grow, they feel empowered after having passed the firsts years of the career that involve heavy courses in basic sciences and humanities. The course where the strategy was implemented was 100% virtual at the time due to the pandemic. It included 58 students during the second semester of 2021 and 95 students during the first semester of 2022. Their age range was between 20 and 35 years (82% of them were between 20 and 25 years-old). The present investigation received approval from the school of dentistry review board, upon revision of the course Syllabus. In addition, each participant was asked to provide informed consent for his/her work to be part of the analyzes. The goal of this experience was to motivate a deeper learning of the elements of a pain history with the aid of the Spanish mnemonic SOCRATES: S (site), O (occurence), C (quality, calidad in Spanish), R (radiates or localized pain), A (relief-associated factors), T (timing or frequency), E (exacerbating factors), and S (severity). Each student had to create a two-minute video portraying an interview with an actor playing a patient with orofacial pain. The following key aspects were evaluated afterwards: originality, content, professionalism, sythesis, and time (as shown on Figure 1). It was clearly explained that this assignment included only the orofacial pain history, even when a complete clinical diagnostic process also includes initial interview, pain history, systems review, and clinical evaluation. A five-phase teaching sequence was also developed by the teacher. A summary can be seen in Table 1.

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Figure 1: Key aspects evaluated in the "role play".

Table 1: Teaching sequence.

Phases	Explanation
1	The students received classes on how to conduct a clinical interview and a pain history.
2	The students saw an example video in which a dental specialist performs a pain history compilation.
3	The students were given instructions on how to create a video in which they interview a fictional patient using the SOCRATES mnemonic.
4	The students explored different platforms to record and edit their videos (YouTube, iMovie, Vimmeo, etc.)
5	The students made a video during a two-week period of time that included planning, recording, and editing. Considering the whole group, 98% sent the assignment without any delay.

Discussion and Results

This didactic experiment was applied at a crucial moment in the dental students' training because those who were taking the Orofacial pain course were in the preclinical stage. This means that they had not started any contact with real human patients. This adds a bonus to the activity: they would experience the most authentic scenario until then. This novelty became a challenge that motivated a real interest in developing skills that would help them confront future interactions. During the lectures, the students were taught the most vital questions they were supposed to ask and which nonverbal-communication aspects were essential for treatment. In addition, students were introduced to the concept of "verbal analgesia", in which a clinician pays close attention to the patient's voice, tone, speed, pitch, and information with the goal of helping the person to relax [15-17]. This so called "placebo or non-specific effect" has shown to be an important part of the multidisciplinary treatment of chronic pain or any other kind of pain condition [18,19]. "Role play" allows the student to notice the importance of communication skills that are vital for an adequate outcome of any intervention or potential treatment. These skills involve verbal and non-verbal communication, aspects that are not commonly considered in dentistry. Furthermore, in the clinical-pain field it is key to control or modulate the anxiety of the patient related to the diagnosis or further treatment. Decreasing the anxiety symptoms helps to increase, to some degree, the relief.

To assess the results and obtain feedback from the students about the activity, a questionnaire was carried out. Its results are shown below (see Chart 1). Almost all of students, 96% (133 students), reported they would recommend the activity for future courses and considered the dynamics of the experiment positive, since they helped to put into practice the theory they had learned. Student statements illustrated the positive perception: "SOCRATES will never be forgotten", "I finally know how to conduct a pain history". These examples, among many others, made it clear that the goal was achieved. On the other hand, as educators, we must embrace that no activity will achieve a 100% its purpose. In this case, a minority (4 students) had negative perceptions when asked about the assignment. The recorded interviews proved that different environments can be used to carry out a clinical interview; in particular, homes, offices, or dental clinics. It is noteworthy that absolutely all students behaved professionally during the "role play", showing respect for the academic activity. However, when using this strategy, it is important to notice several limitations. One of those is how the students find a person that will become the fictitious patient. In this case, some chose patients that were relatives or close friends; thus creating a relaxed environment that did not replicate with precision what they will encounter in their professional practice. Another limitation was the amount of topics and activities included in the course, this does not allow for multiple repetition of the role playing exercise and affects feedback that students may receive. Considering this, it is imperative to plan how

much time is going to be available to allow the students to learn from their own mistakes. On the positive side, there was a remarkable motivation and creativity shown by the participants. To achieve the expected response, both students and teachers must prepare beforehand on how the strategy will be implemented. In this case, a lecture about the importance of the clinical interview and video example of the "role play" was given before the activity was assigned. Furthermore, the class was highly motivated and performed the activity with professionalism: they wore impeccable clothing, behaved appropriately, and used respectful language at all times when addressing the "patients". On the negative side, some students were less than thrilled when asked to record their interviews. This should be addressed in future studies since it impacts the way they carry themselves during the interview and may even affect how they gather information and deliver follow-up questions. It is possible that explaining more deeply the benefits of "role play" on the learning process can improve the quality and receptiveness to the strategy. In addition, when planning this strategy, there should be time for the teacher to help the class to familiarize with the goals of the activity.

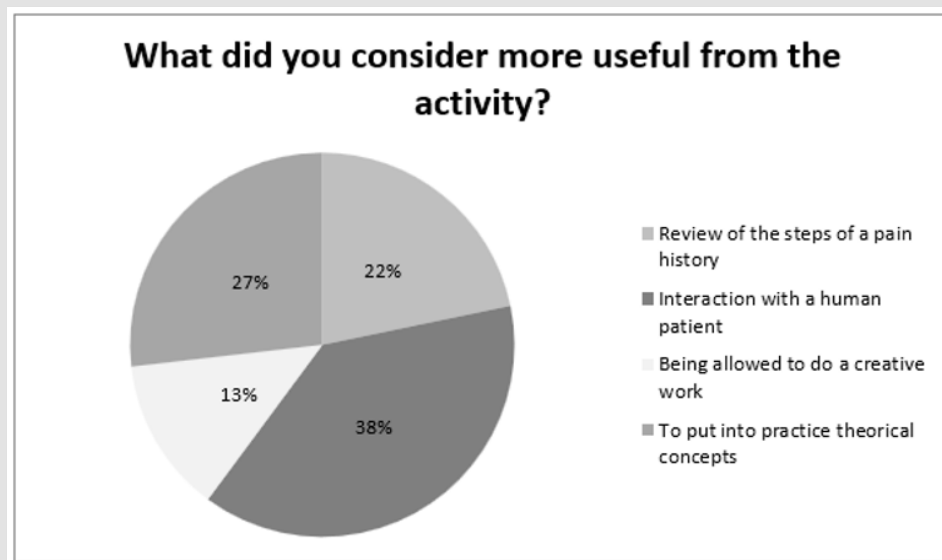

Chart 1: Students self-report relevance of the "role play" activity.

Negative comments were mostly about recording themselves and having to share the video. At this level, it is evident that dental students are not used to interact with human patients or even speaking out loud in front of a classroom or a video camera. Motivating them was crucial to show the whole group how this experience would help them apply what they had learned in previous courses. Most felt they were unprepared to test their knowledge and perform well on their first attempt. Furthermore, letting them know there are different levels of performing a pain-history interview will allow them to understand they can practice several times until they reach the upper levels. Showing them interviews before they record the videos can also help them understand how they should behave during a pain-history collection of data. The analysis of the didactic strategy led the researchers to develop a four-level description of the elements that should be assessed when students perform a role-playing in class or within a course. As shown on Table 2, the differences between levels can help them review their own interviews and repeat the process to improve their technique and confidence. Some examples of the interviews can be seen to understand a little more about each of the different levels. Level 1 portrays minor mistakes that can be improved and refined in the future to allow a deeper connection with the patient. Some of the students speak too fast or rush through the interview, not allowing the patient enough time to answer. This increases the chance of losing eye-contact with the patient while taking notes, ignoring their questions, etc.

Table 2: Levels of “role play” as a didactic strategy.

Level	Explanation
1	The student mistakes important data (for example, the patient’s name), and sticks rigidly to the script, thus failing to ask follow-up questions. He or she is too literal when repeating what the patient said. The patient has difficulty understanding the asked questions because the interviewer does not speak in a clear voice or does not make an effort to explain the meaning of certain words. During the interview, the student gets distracted (checking the cellphone, moving constantly or playing with the pencil or paper). The interaction with the patient is rushed. At the end of the session, no synthesis of the patient’s information is mentioned and no explanations are given about the next phases of treatment.
2	During the interview, the student looks confident and writes down all the important information provided by the patient. Constant eye-contact with the patient is shown because the student is not immersed in the patient’s chart. Also, the student makes sure the information given to the patient is clear and respectful: “Please let me know if you understand what I am saying”, “Do my comments make sense to you?”, etc. Finally, the student manages to change the volume and tone of his or her voice according to the volume and tone of the patient. All the questions related to the pain history are asked, even if the order is not the same as the one explained by the teacher.
3	The student begins the encounter asking questions that are unrelated to the pain history. The rapport with the patient can be noticed during the interview and a clear intention to understand what the patient is going through is shown: “Correct me if I’m wrong…”, “Tell me if this summarizes what you are feeling…”, “Would you say that I am understanding you?”, etc.
4	Aside from the strategies mentioned in the levels 2 and 3, the student uses pain-acceptance information to show the patient how talking about the pain can activate the endogenous analgesic system. Also, anxiety-reduction strategies are used to help the person feel he or she is well taken care of and can eventually regulate his or her perception of pain.

Level 1 Examples

- Student: Where does it hurt?
- Patient: It really hurts close to my ear but… (interruption by the student)
- Student: And from one to ten, how much does it hurt?
- Student: I’m… going to… ask you … about… your pain… (Using a robotic voice)
- Patient: I’m in pain… my teeth. It also affects my ear. Do you think both are compromised?
- Student: For how long does the pain usually last? (Ignoring the patient’s question).

Level 2 Shows More Communication Proficiency and a Better Performance Than Level 1

- Student: Do you feel pain only where you are pointing or in other areas as well? Can you please clarify?
- Student: Are you sure about what you are feeling? I sense a hesitation. (Trying to build rapport)
- Patient: I’m not. I am quite sure about the pain.
- Student: According to what you are telling me, the pain is not located specifically where you are pointing, it radiated to other areas as well. (Trying to do a follow-up).

In Level 3 a Need for Clarification is Clear in Many of the Interventions, as well as a Deeper Understanding of What the Patient is Going through:

- Student: Let me clarify, you feel pain only when eating cold food not with warm or hot meals. Is that correct?
- Patient: Exactly. That is correct!
- Student: I’m going to ask some questions about your pain. Please try to respond in the best way you can.
- Student: What factors do you think make your pain worse? I mean, have you noticed what triggers or worsens the pain?.

No examples of students in Level 4 were found since the assignment was only executed once. In addition, there were time constraints that limited the ability to deepen the conversation with the patient. As a final remark, when approaching or treating people, our communication skills should be considered an imperative part of the intervention. It may decrease the patient’s uneasiness and even their pain just by letting them know that the person doing the interview truly cares about them. This helps the healing process. Teaching new generations how to pay attention to patients during the interview could have an impact on the way they carry on interactions with real patients in the future.

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