

Original Research Article

Auxiliary Sensory Media in Oral Surgery: Reduction of Stress and Anxiety

Abstract

objective: Put into practice the use of physical, auditory and visual aids. In oral surgical care in order to reduce stress and anxiety during consultation and treatment in this specialty.

Materials and Methods: type of study: prospective, cross-sectional, quasi-experimental, mixed, descriptive, observational, risk-free. Definition of the study universe: patients who attend surgical consultation at the Mexican Center for Stomatology, Morelia campus, in the period 2023 – 2024. Sample size: 34 patients who undergo a dental surgical procedure. Definition of observation units: stress and anxiety response to physical, visual and auditory stimuli during the surgical procedure. Inclusion criteria: patients who attend surgical consultation, have an age group of 18 to 45 years of age. Exclusion criteria: patients who attend endodontic, orthodontic and pediatric dentistry consultations, patients under 18 years of age and over 45 years of age. Elimination criteria: patients who abandon the research, patients who do not completely answer the survey.

Results: A total of 36 patients were counted who attended surgical consultation. Auditory, physical and visual means were applied in order to decipher which method allows reducing the patient's state of anxiety at the time of the surgical procedure, and they were applied in the same distribution of 12 (33.3%). The acceptance of the physical environment was the one that presented the greatest state of comfort with 100% of the participants studied.

conclusion: The use of physical, visual and auditory aids; for the management and reduction of stress, anxiety and uncertainty that the patient experiences, from the time they are in the waiting room, during oral surgical care and after treatment,

they allow generating a comfortable and calm environment, in addition to carrying out control.

keyword: Oral Surgery, Psychological distress, Stimuli, music therapy, Third Molar, anxiety, stress, anxiolytics, emotional intelligence, auxiliaries.

Introduction

Visiting the surgical dentist usually generates stress and anxiety in many patients. The mention of "surgery" can provoke feelings of distrust and uncertainty. Hernández-Vargas CI and Dickinson-Bannack ME, emotional intelligence plays a crucial role in the care of these patients, since its lack can hinder treatment. This type of intelligence refers to the ability to manage one's own feelings and emotions, being an integral part of the social intelligence of the doctor or treating specialist towards the patient¹.

To effectively manage emotions during the consultation, it is essential that the professional knows and applies his or her own emotional intelligence. This allows you to act with objectivity and precision, improving efficiency for both the patient and the clinician. It is essential that the dentist can identify and manage emotional situations such as apprehension and anxiety that may arise during oral or dental surgical procedures².

From a pathophysiological perspective, the stress and anxiety response is short-term adaptive, preparing the body to face threats. However, when these responses are prolonged or excessive, they can have negative physical effects, such as increased risk of cardiovascular disease, suppression of the immune system, and metabolic disorders. It is crucial to highlight that the hormonal regulation of stress and anxiety is complex and varies depending on the situation and the individual, depending on feedback mechanisms and fine regulation of the hypothalamic-pituitary-adrenal axis to maintain hormonal balance in response to stress and

emotionally generate post-traumatic stress, apprehension, and refusal of medical or oral care^{1,2}.

Anxiety

Anxiety is defined as an emotion characterized by feelings of tension, worry, and physical changes such as increased heart rate. To measure it, there are various scales such as the Corah Dental Anxiety Scale (DAS) and the Modified Dental Anxiety Scale (MDAS), specifically designed for adults. Additionally, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and the International Classification of Diseases (ICD-10) provide data on the level of anxiety a patient may experience, both in the waiting room and during and after of elective dental treatment³.

Stress

Capdevila N is a natural response of the body to fear, tension or danger, classifying it into psychological, physical and metabolic stress. They describe its phases as alarm reaction, resistance state and exhaustion phase. They recommend consulting a specialist to determine individual needs, proposing measures such as a balanced diet, adequate sleep, regular exercise, and avoiding the consumption of alcohol, tobacco and drugs⁴.

Orlandini A explains that stress and anxiety are brain responses that involve metabolic and hormonal changes, initiated by corticotropin-releasing factor, which activates the release of norepinephrine, adrenaline, norepinephrine and cortisol^{5,6}.

Domínguez TB et al identify five major sources of stress: environmental, family, personal, work and interpersonal, associated with disorders such as migraines, headaches, gastrointestinal disorders, chronic fatigue, back pain, insomnia, bruxism and hypertension⁷.

Stress management includes psychological strategies or the support and consultation of specialists in the field to identify and control the causes, of which

they are, good communication with the patient to generate trust with them, as well as pharmacological support with palliative care that They include substances to regulate hormonal production. Additionally, methods such as music therapy and the use of stuffed animals are effective in relieving stress and anxiety, providing relaxation and emotional security during medical and dental procedures⁸⁻¹².

Managing dental anxiety

Managing anxiety in the field of dentistry is essential for both the professional providing care and the patient receiving treatment. Anxiety related to dental visits is common and can negatively impact the patient's experience as well as the effectiveness of treatment. Below are some strategies for managing anxiety in dentistry for both the dentist and the patient¹⁰⁻¹²:

For the Dentist

It is important that the dentist establishes empathetic and understanding communication with the patient. This involves actively listening to their concerns and fears, as well as providing clear and honest information about the dental procedure. To achieve this goal, it is important to be educated and prepared, use relaxation techniques, effective anesthesia, and have a comfortable environment.

For the Patient

We must generate extensive communication with the patient that specifies the importance of having open communication, carrying out self-control practices, having social support, distractions and having a regular appointment schedule that can help reduce the anxiety associated with the dental visits.

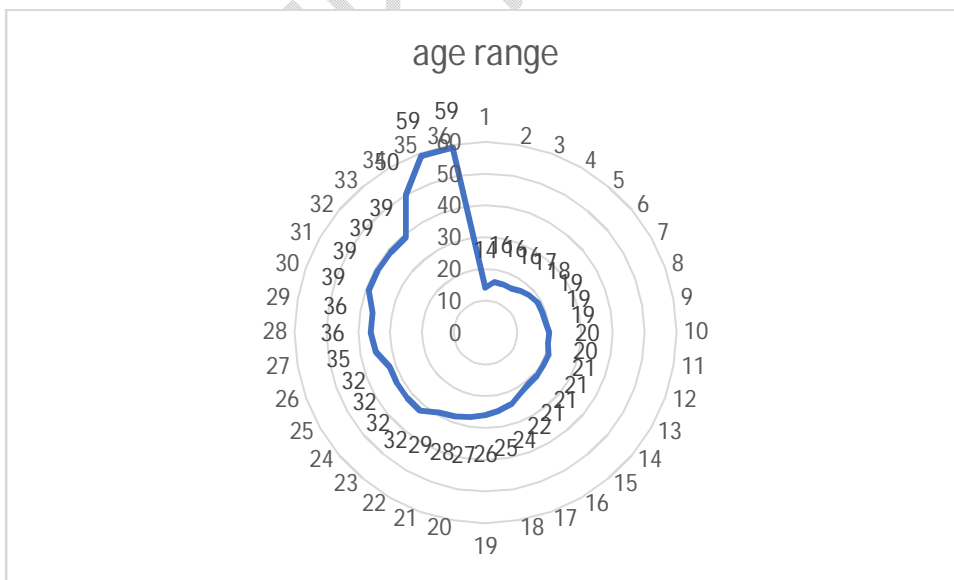
Materials and methods

A prospective, cross-sectional, quasi-experimental, mixed, descriptive, observational, risk-free study was carried out. In which patients who attend surgical consultation at the Mexican Center for Stomatology, Morelia campus, from 2023 to 2024 who undergo a dental surgical procedure were included. **after informing you of the ethical considerations and signing the informed consent.** To evaluate the stress

and anxiety response to visual and auditory stimuli during the surgical procedure. The inclusion criteria were considered: patients who attend surgical consultation, have an age group of 14 to 59 years of age, present clinical characteristics of stress and anxiety or be diagnosed with it. Exclusion criteria: patients who come to the Mexican stomatology center for endodontic, orthodontic and pediatric dentistry consultation, patients under 14 years of age and over 59 years of age, emotionally stable patients and elimination criteria: patients who abandon the research, patients who do not completely answer the survey.

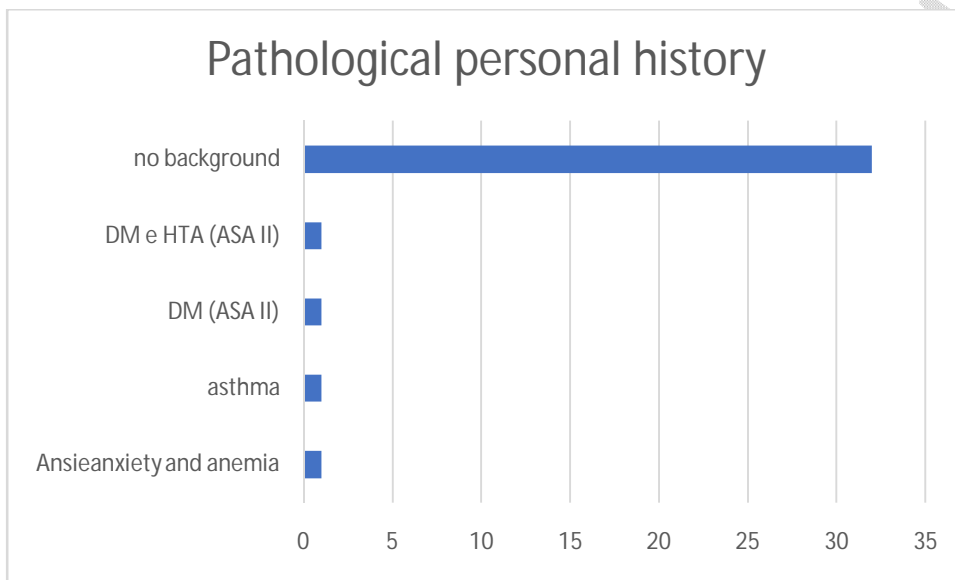
Results

A total of 36 patients were counted who attended surgical consultation at the clinics of the Mexican Center of Stomatology, Morelia headquarters, where 22 (64.7%) female patients and 14 (35.3%) male patients were treated. The age range that was attended was distributed between 14 and 59 years of age, being included in the following age groups: (1) 14 years; (3) 16 years old; (1) 17 years old; (1) 18 years old; (3) 19 years old; (2) 20 years; (4) 21 years old; (1) 22 years old; (1) 24 years old; (1) 25 years; (1) 26 years old; (1) 27 years old; (1) 28 years old; (1) 29 years old; (4) 32 years old; (1) 35 years old; (2) 36 years old; (4) 39 years old; (1) 50 years; (2) 59 years old. The fashion being 21, 32 and 39 years old. Graph 1.



Graph 1: Distribution by age range of patients who agreed to be part of the research in the surgical clinics of the Mexican Center for Stomatology.

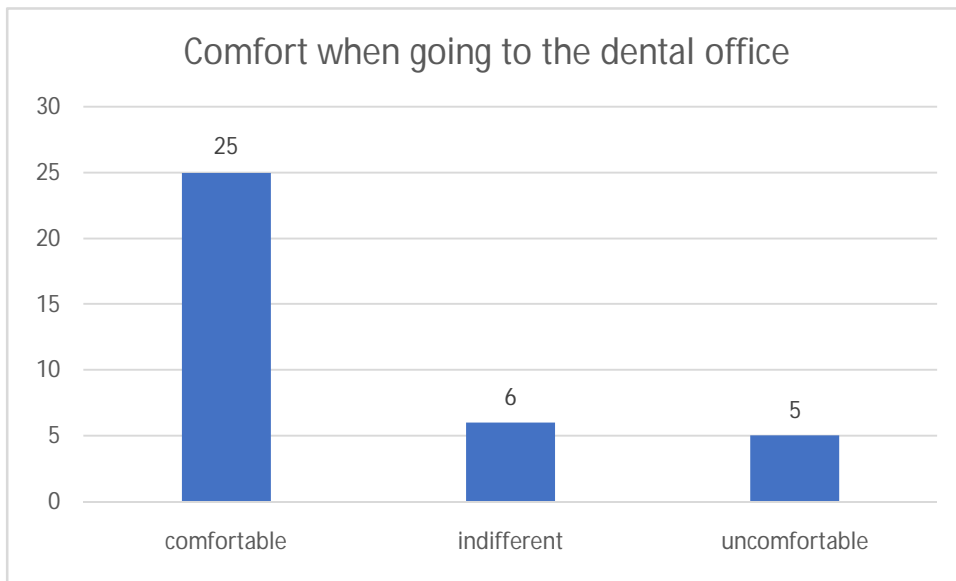
In order to establish the clinical situation of the patients who were subjected to the experiment, we asked about their personal pathological history in order to know if they had a previous diagnosis of anxiety or depression. This being confirmed 1 (2.7%), with Asthma 1 (2.7%), DM (ASA III) 1 (2.7%) and without history 32 (88.8%). Graph 2.



Graph 2: review of personal pathological history where 32 patients without confirmed history are presented.

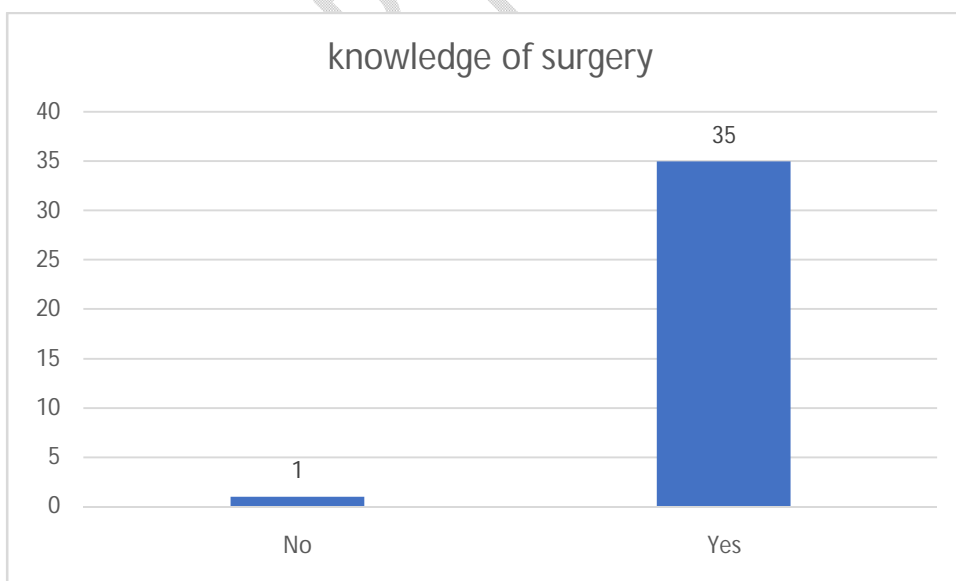
Prior to dental care, the patients were questioned about how they felt about coming to the consultation, with the result that 25 (69.4%) felt comfortable, 6 (16.6%) had

discomfort and 5 (13.8%) They expressed indifference towards dentistry. Graph 3.



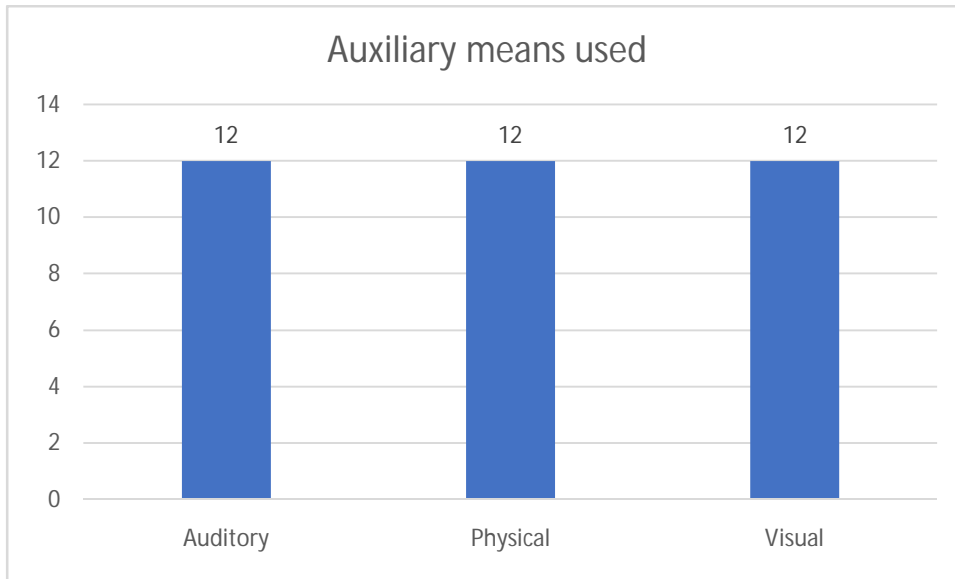
Graph 3: The comfort of patients prior to dental care was evaluated.

An important factor in measuring patients is knowing if they have prior knowledge of surgery, knowing what an incision, osteotomy, odontosection and suturing consists of, in order to know the relationship that arises from prior knowledge. with discomfort to treatment. Demonstrating that 35 (97.2%) knew the procedure and 69.4% felt comfortable. Graph 4.



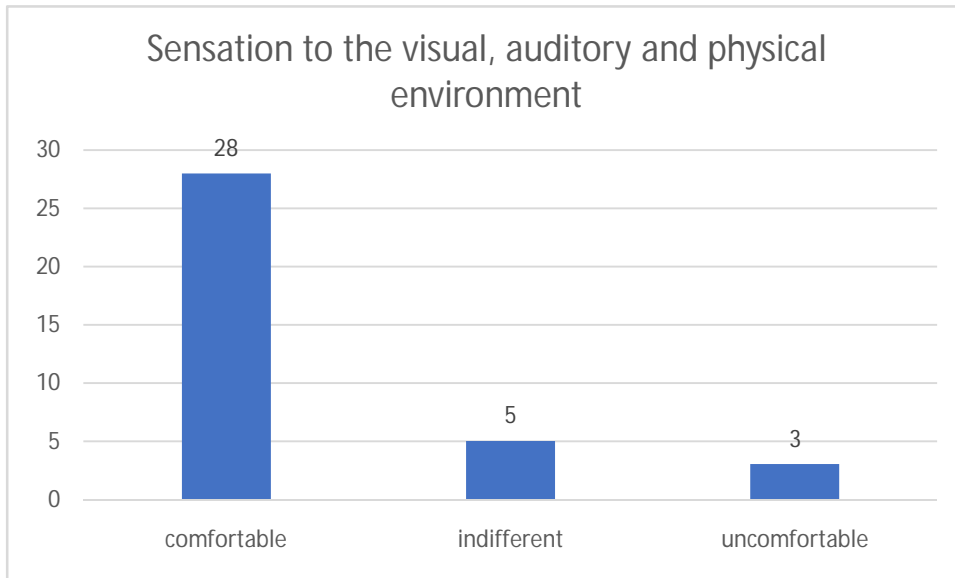
Graph 4: knowledge prior to the surgical procedure does not represent a factor that can be associated with the discomfort of the surgical act.

Auditory, physical and visual means were applied in order to decipher which is the method that allows reducing the patient's state of anxiety at the time of the surgical procedure, being that it was applied in the same distribution of 12 (33.3%). Graph 5.



Graph 5: visual, physical and auditory means used to manage the patient's emotional state at the time of surgery.

The use of auditory, visual and physical means showed that patients showed 77% comfort, 13% were indifferent to the assistant and 8.3% were uncomfortable. Graph 6.



Graph 6: patient acceptance of the visual, physical and auditory environment.

Discussion

Stefano V and Bedoya LM in 1998 sought to reduce anxiety in patients undergoing dental surgery, the duration of the surgery and the amount of anesthesia used. This study was applied in the clinic of the University of Antioquia in Medellín, where 5 study subjects were reviewed and a control group was confirmed with four people who also required the extraction of third molars. The duration of the surgery, the amount of anesthesia used and the healing time, measured through graphic records. The results were analyzed individually and as a group, comparing the experimental and control groups. For this, the Student's T test for parametric samples was used with a significance of 0.05, finding significance only in three comparisons in relation to the anxiety variable¹³.

Lozada-López, FD and Romero-Fernández AJ, in their article, refer to the fact that dental consultations can cause changes in behavior in patients, making this a traumatic experience. For this reason, the authors propose conditioning the dental office with audiovisual tools, reading material and flavorings to reduce the level of stress and anxiety in the waiting room¹⁴.

Llamola C, Pintó MS propose in their work that a compilation of oral corpora be generated that constitute a linguistic basis for the VarGEmpatLing project (Generic variation of linguistic empathy) and thus promote empathy in a very specific context of interaction with the patient and minimize the distrust, stress and anxiety that could be generated by the waiting time in the office, during the consultation and dental procedures¹⁵.

Lima ÁM, Casanova RY are aware of the fear and anxiety that treatment and the dental chair can generate, which is why, in their article, they carry out a literary review to establish the prevalence of sex and age, relating its etiology and the treatments that could cause it. as well as its prevention. Also describing the difference between fear, anxiety and dental phobia. They propose as a treatment, the control of anxiety with behavioral and medication therapy, to the treating dentist, preventing these behaviors with good communication with the patient and the office adapted as a relaxed and calm environment¹⁶.

Cázares LF, Lozano-Laín AJ, Gutiérrez LP. Salinas N. describes in her article that dental anxiety is common in dental procedures and particularly in oral surgery, with differences between genders, observing that the female gender is the one that presents extreme degrees of anxiety, although it should be noted that They must consider the sociocultural factors which can determine the behavior of each individual. Finally, it is very important that the dentist makes use of all the techniques and skills to avoid levels of anxiety that can lead to critical states during dental treatment¹⁷.

conclusion

The use of physical, visual and auditory aids; for the management and reduction of stress, anxiety and uncertainty that the patient experiences, from the time they are in the waiting room, during oral surgical care and after treatment, they allow generating a comfortable and calm environment, in addition to carrying out control. of anxiety in the majority of patients. This is in order not to generate negative feelings in the patient during the consultation and oral surgical treatment. With this,

avoid causing post-traumatic stress, rejection of treatment, abandonment of treatment and odontophobia.

Constant communication between the treating dentist and the patient is of great importance to generate a more comfortable environment that allows the patient to reduce the stress caused by a visit to the dentist.

Ethical Approval:

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

Consent

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

Disclaimer (Artificial intelligence)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

References

1. Hernández-Vargas CI, Dickinson-Bannack ME. Importance of emotional intelligence in Medicine. Medical educ research [Internet]. 2014 [cited 2024 May 11];3(11):155–60. Available at: https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-50572014000300006
2. Ríos EM, Herrera Ronda A, Rojas Alcayaga G. Dental anxiety: evaluation and treatment. Av Odontostomatol [Internet]. 2014 [cited 2024 May

- 11];30(1):39–46. Available at:
https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0213-12852014000100005
3. Capdevila N, Segundo MJ. Stress. Offarm [Internet]. 2005 [cited 2024 May 11];24(8):96–104. Available at: <https://www.elsevier.es/es-revista-offarm-4-articulo-estres-13078580>
 4. Orlandini A. Stress: What it is and how to avoid it. Fund of Economic Culture; 2012.
 5. Holmes E. Teacher well-being: Guide to managing stress and feeling well personally and professionally. Narcea Editions; 2014.
 6. Manual for the theoretical-practical workshop on stress management. Plaza Y Valdes; 2002.
 7. Trejo BD, Iturbe PV, López YO, Ruvalcaba SLP, Martínez AC, Salazar LMG. MANUAL FOR THE THEORETICAL-PRACTICAL STRESS MANAGEMENT WORKSHOP [Internet]. Plazayvaldes.es. [cited May 11, 2024]. Available at: <https://www.plazayvaldes.es/libro/manual-para-el-taller-teorico-practico-de-manejo-del-estres>
 8. Díaz Martín Y. Academic stress and coping in medical students. Humanid medical [Internet]. 2010 [cited 2024 May 17];10(1):0–0. Available at: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-81202010000100007
 9. Complete V. Clinical Practice Guide for the Management of Patients with Anxiety Disorders in Primary Care [Internet]. Guiasalud.es. [cited May 17, 2024]. Available at: https://portal.guiasalud.es/wp-content/uploads/2018/12/GPC_430_Ansiedad_Lain_Entr_compl.pdf
 10. Nursing Narrative Review TF by G. Music therapy in palliative care [Internet]. Uam.es. [cited May 17, 2024]. Available at: https://repositorio.uam.es/bitstream/handle/10486/685158/romero_de%20mi_guel_lauratfg.pdf?sequence=1&isAllowed=y
 11. JPC Artunduaga. Educational strategy in oral health Smiling chameleon takes care of your teeth for schoolchildren with and without visual disabilities

[Internet]. Educa.co. [cited May 17, 2024]. Available at: <https://repositorio.uan.edu.co/server/api/core/bitstreams/920d9386-f48c-4420-8a61-4d9eb978c026/content>

12. Albanesi de Nasetta S, Tifner S, Nasetta J. Stress in dentistry. *Acta Odontol Venez* [Internet]. 2006 [cited 2024 May 17];44(3):310–5. Available at: https://ve.scielo.org/scielo.php?script=sci_arttext&pid=S0001-63652006000300003
13. Amaíz AJ, Flores MA. Addressing the anxiety of the adult patient in the dental consultation: an interdisciplinary proposal. *Vital Dentistry*. 2016;24(1):21-28.
14. López-Abril JD, Lozada-López FDR, Romero-Fernández AJ. Creation of a pleasant-educational environment in the waiting room, which positively influences the behavior of patients, in the Uniandes dental care unit. (Thesis to obtain a dental degree). Regional Autonomous University of the Andes “UNIADES”. 2020.
15. Lllamola C, Pintó MS. Field work and design of a linguistic corpus to analyze empathy in doctor-patient interactions in oral surgery consultations. *Circle of linguistics applied to communication*. 2022;91(1):143-156.
16. Lima ÁM, Casanova RY. Fear, anxiety and phobia of dental treatment. *Rev. Hum Med*. 2006;6(1):1-21.
17. Cázares DF, Lozano-Laín AJ, Gutiérrez LP, Salinas NA. Degrees of anxiety in the extraction of an impacted third molar. Gender differences. *Univ Odontol*. 2016;35(75):1-18.