Evaluation of Anxiety and Vital Signs in Adults Undergoing Different Dental Procedures: A Prospective Study

Evaluación de Ansiedad y Signos Vitales en Adultos Sometidos a Diferentes Procedimientos Odontológicos: Un Estudio Prospectivo

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ABSTRACT: The aim of this study was to evaluate the vital signs related with different dental treatments, and correlate with demographic data and participants' anxiety level. This is a prospective clinical study with 60 participants, divided into 3 groups of dental procedures: (1) restorative treatment, (2) extractions and biopsies, and (3) gingival treatment. A level of anxiety questionnaire before dental procedure proposed by Corah's Dental Anxiety Scale was collected. Respiratory rate, systolic and diastolic pressure, temperature and oxygenation were measured before, during and after the procedures. 31 (51.7 %) women and 29 (48.3 %) men were included, with mean age of 41.75 years old. Most participants (50 %) were classified as very little anxious. Diastolic pressure before the procedure was higher for slightly anxious patients when compared with very little anxious patients (p=0.028). Systolic pressure before, during and after the procedure was higher for participants above 40 years old (p=0,001). Heart rate (p=0,050) and temperature (p=0,041) was higher before the restorative treatment. Anxiety can promote changes in vital signs in the dental environment. Vital signs, sex, age and level of anxiety do influence the blood pressure at different clinical moments. Dental procedures have association with variations in temperature, heart and respiratory rate.

KEY WORDS: anxiety. health assistance. vital signs.

INTRODUCTION

The vital signs measure bodily functions that indicate the general physical state of a person, possible disease and progress of recovery. They are obtained through heart rate, blood pressure, respiratory rate and bodily temperature, plus pulse oximetry and evaluation of pain (Salma *et al*., 2019). Monitoring these vital signs during the appointment can provide great benefits to the dentist, aiming to detect acute medical emergencies that require immediate response, in addition to revealing gradual deleterious tendencies that can be reversed (Fukayama & Yagiela, 2006).

The vital signs can be influenced by anxiety, resulting in immediate effects in cardiovascular,

respiratory, skeletal muscle and nervous systems, besides comportamental alterations (Salma *et al*., 2019). Anxiety can be defined as an emotion that precedes an encounter with a feared situation (Armfield & Heaton, 2013). Dental treatment can usually be stressful and can induce anxiety even before initiating it (Salma *et al*., 2019). The verbal contact between professional and patient before and after an appointment is fundamental to monitoring it, and to promote comfort to the patient (Fukayama & Yagiela, 2006).

The alterations induced by the dental experience can vary according to fear, anticipation, pain, local anesthesia, the kind of procedure, age, sex, previous dental experience and health state (Salma *et*

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al., 2019). It may involve physiological, cognitive, emotional, and behavioral components. Patients can have anticipation anxiety, being able to report difficulty in sleeping previously to the day of appointment, and feeling emotionally tired after concluding treatment (Armfield & Heaton, 2013). The heart rate and blood pressure alterations can be induced in the appointment scheduling (Brand & Abraham-Inpijn, 1996).

Thus, analyzing the vital signs and identifying the anxiety generated by the dental environment promotes safety to the dentists, aiming at a more adequate and more humanized dental management. The present study aims to evaluate the possible vital signs alterations associated with different dental treatments, and yet to correlate with demographic data and anxiety levels previously reported by the participants.

MATERIAL AND METHOD

This study was approved by the Research Ethics Committee of the Federal University of Juiz de Fora under protocol number 4,942,769, and was performed in compliance with the Declaration of Helsinki of the World Medical Association. The consent form was obtained from the individual participants before applying the questionnaire and before performing the vital signs evaluation.

This is a prospective clinical Brazilian study with 60 participants divided equally into 3 groups: (1) Restorative dentistry clinical treatment group (restorative treatment); (2) Oral surgery clinical treatment group (extractions and biopsies); (3) Periodontology clinical treatment group (gingival treatment).

To participate in this study, all randomly chosen participants were 18 years old or older, with the need of dental treatment through spontaneous demand for procedures of restorative dentistry, oral surgery or periodontics. Participants were excluded from this study if (1) undergoing oncological treatment, (2) undergoing treatment with immunosuppressants, (3) participants with autoimmune diseases, chronic kidney disease, hypertension, diabetes and self-related psychiatric diseases.

Participation in this study was voluntary, in which participants could withdraw at any moment. All data collected were stored by the researcher, in a way to guarantee secrecy of the information. The questionnaire was applied only once with each participant, in order to avoid duplication of information. To maintain the veracity of the informations, no previous training was performed with the participants, The data were collected during november 2021 to march 2022 and stored in Excel sheets (Mountain View, CA, USA).

Data collection was made during a face-to-face questionnaire before dental procedure containing 4 objective questions proposed by Corah's Dental Anxiety Scale table (Corah, 1969) to evaluate the level of anxiety (Supplementary File 1 and 2). The table would be scored as follows: up to 5 points - very little anxious; from 6 to 10 points - slightly anxious; from 11 to 1 points - moderately anxious; from 16 to 20 points - extremely anxious. At the end, for statistical analysis, 2 groups were formed: the slightly anxious group, formed by the score of very little anxious and slightly anxious; and the group of moderate to extremely anxious, formed by moderate and extremely anxious. Furthermore, each participant was asked about the use or not of medication for anxiety.

For the collection of vital signs, it was used: (I) pressure device to measure blood pressure composed of the sphygmomanometer (Durashock DS44, Tycos Welch Allyn, New York, USA) and the stethoscope (stethoscope Pró-Lite Spirit royal blue, SO13485, China); (II) digital laser thermometer to measure temperature (Digital Clinical Thermometer Without Contact G-Tech model FR1DZ1, G-Tech, China); (III) pulse oximetry (Finger Monitor Portable Pulse Oximeter YK-80A, BIC, Duesseldorf Germany) for heart rate; (IV) number of breaths per minute for respiratory rate; and (V) evaluation of oxygen saturation through pulse oximetry (Finger Monitor Portable Pulse Oximeter YK-80A, BIC, Duesseldorf Germany).The evaluations were performed in 3 steps: (1) immediately before the procedure; (2) after the most critical time of the procedure, such asanesthesia, procedures in oral surgery, use of high-speed handpiece in restorative dentistry and breaks between periodontal scaling; and (3) after the procedure was over.

All the quantitative variables referring to vital signs were submitted to the Kolmogorov-Smirnov normality test. The parameters with normal distribution (heart rate) were compared by paired t-test or ANOVA for repeated measures. For the parameters with non-parametric distribution

Supplementary File 1. Questionnaire containing 4 objective questions proposed by Corah's Dental Anxiety Scale table.

1. If you had to go to the dentist tomorrow, how would you feel about it?
   a. I would look forward to it as a reasonably enjoyable experience.
   b. I wouldn't care one way or the other.
   c. I would be a little uneasy about it.
   d. I would be afraid that it would be unpleasant and painful.
   e. I would be very frightened of what the dentist might do.

2. When you are waiting in the dentist's office for your turn in the chair, how do you feel?
   a. Relaxed.
   b. A little uneasy.
   c. Tense.
   d. Anxious.
   e. So anxious that I sometimes break out in a sweat or almost feel physically sick.

3. When you are in the dentist's chair waiting while he gets his drill ready to begin working on your teeth, how do you feel?
   a. Relaxed.
   b. A little uneasy.
   c. Tense.
   d. Anxious.
   e. So anxious that I sometimes break out in a sweat or almost feel physically sick.

4. You are in the dentist's chair to have your teeth cleaned. While you are waiting and the dentist is getting out the instruments which he will use to scrape your teeth around the gums, how do you feel?
   a. Relaxed.
   b. A little uneasy.
   c. Tense.
   d. Anxious.
   e. So anxious that I sometimes break out in a sweat or almost feel physically sick.

(respiratory rate, systolic and diastolic pressure, temperature and oxygenation) Wilcoxon and Friedman's test were used. For the statistical analysis the Statistical Package for the Social Sciences software, version 21.0 for Windows was used (Chicago, IL, USA). The level of significance was 5 % (p ≤ 0,05).

RESULTS

This study was composed of 60 participants, 31 (51.7 %) women and 29 (48.3 %) men, average age of 41.75 ± 14.43, minimum of 18 years old and maximum of 68 years old. Among the 60 participants, 48 (80 %) did not use anxiety medication, whereas

Supplementary File 2. Scale for measuring the level of anxiety proposed by Corah's Dental Anxiety Scale table.

Anxiety scale	Score
Very little anxious	up to 5 points
Slightly anxious	from 6 to 10 points
Moderate anxious	from 11 to 15 points
Extremely anxious	from 16 to 20 points

12 (20 %) used serotonin reuptake inhibitor drugs such as Citalopram (n=1), Fluoxetine (n=1), Escitalopram (n=1), Sertraline (n=2), Desvenlafaxine

(n=1), benzodiazepines such as clonazepam (n=3), and natural as Maracugina (Passiflora incarnata) (n=3).

According to anxiety levels, 30 participants (50 %) were classified as very little anxious, 19 (31.7 %) as slightly anxious, 8 (13.3 %) as moderately anxious and 3 (5 %) as extremely anxious. Through the anxiety level results obtained collected by questionnaire, these data were associated with the measured vital signs (Table I). According to the results, diastolic pressure before the procedure was higher for slightly anxious patients when compared with very little anxious patients (p=0.028).

The values obtained through vital signs measurement of the participants with regard to sex are shown below in Table II. It was possible to observe that there was a difference in systolic pressure, as well as diastolic pressure according to sex in almost every moment of the evaluation. Other parameters did not differ according to this variable.

Furthermore, it was possible to observe that systolic pressure before, during and after the procedure was higher for participants above 40 years old (p=0,001). The temperature during the procedure was lower for patients above 40 years old (p=0,004). Moreover, the saturation before (p=0,033) was higher for participants under 40 years old. The values are described in Table III.

The results of the vital signs evaluation according to the use of medication for anxiety did not differ significantly along the record (Table IV).

The results of the vital signs evaluation referring to the clinics of appointment are available in Table V. The temperature before the procedure was higher in the restorative dentistry clinic (p=0,041). Plus, the respiratory rate during and after the procedure was lower in periodontics clinic , but presented the same values for restorative dentistry and oral surgery clinics. The heart rate before the procedure was higher in the restorative dentistry clinic (p=0,050).

Table I. Data measured according to anxiety levels.

	Slightly anxious	Moderate to extremely anxious	p value
Systolic pressure (mmHg)	**Median [IR]**	**Median [IR]**	
Before	120 [20]	110 [30]	0.288
During	120 [20]	110 [20]	0.284
After	120 [20]	110 [20]	0.478
Diastolic pressure (mmHg)			
Before	80 [10]	70 [20]	0.028*
During	80 [10]	70 [20]	0.098
After	80 [10]	70 [20]	0.208
Temperature (°C)			
Before	36.4 [0.6]	36.5 [0.5]	0.341
During	36.5 [0.6]	36.6 [0.3]	0.367
After	36.6 [0.5]	36.6 [0.4]	0.539
Respiratory rate (cycles/minute)			
Before	16 [4]	20 [8]	0.412
During	20 [4]	20 [4]	0.612
After	20 [4]	16 [4]	0.739
Oxygen saturation (%)			
Before	98 [3]	98 [3]	0.812
During	98 [3]	98 [2]	0.960
After	99 [3]	99 [3]	0.853
Heart rate (rpm)	Mean ± SD	Mean ± SD	
Before	73.4 ± 14.3–	73.7 ± 10.9–	0.214
During	70.8 ± 12.7–	69.4 ± 11.1–	0.624
After	71.2 ± 14.1–	69.9 ± 8.4–	0.095

ºC: Celsius degree. mmHg: millimeters of mercury. =: arithmetic mean and standard deviation.

Table II. Data measured according to the sex of the participants.

	Women Median ±[IR]	Men Median ±[IR]	p value
Systolic pressure (mmHg)	Median [IR]	Median [IR]	
Before	120 [20]	120 [10]	0.036*
During	120 [10]	120 [10]	0.029*
After	110 [20]	120 [10]	0.020*
Diastolic pressure (mmHg)			
Before	80 [10]	80 [10]	0.613
During	70 [20]	80 [10]	0.004*
After	70 [20]	80 [5]	0.004*
Temperature (°C)			
Before	36.4 [0.5]	36.3 [0.6]	0.532
During	36.5 [0.5]	36.6 [0.5]	0.634
After	36.6 [0.5]	36.6 [0.5]	0.341
Respiratory rate (cycles/minute)			
Before	16 [4]	20 [4]	0.500
During	20 [4]	20 [4]	0.610
After	16 [4]	20 [4]	0.524
Oxygen saturation (%)			
Before	98 [3]	98 [3]	0.325
During	99 [3]	97 [3]	0.363
After	99 [2]	98 [3]	0.696
Heart rate (rpm)	Mean ± SD	Mean ± SD	
Before	76.1 ± 13.5–	70.7 ± 13.4–	0.827
During	73.9 ± 11.6–	66.9 ± 12.2–	0.674
After	73.8 ± 13.0–	67.9 ± 12.8–	0.764

°C: Celsius degree. mmHg: millimeters of mercury. =: arithmetic mean and standard deviation.

Table III. Data measured according to age (the median of the sample was 40 years old).

	Under 40 years old	Over 40 years old	p value
Systolic pressure (mmHg)	Median [IR]	Median [IR]	
Before	120 [20]	120 [13]	0.001*
During	115 [20]	120 [20]	0.001*
After	115 [20]	125 [10]	0.001*
Diastolic pressure (mmHg)			
Before	80 [20]	80 [10]	0.121
During	70 [13]	80 [10]	0.055
After	80 [10]	80 [10]	0.057
Temperature (°C)			
Before	36.4 [0.5]	36.3 [0.5]	0.149
During	36.7 [0.5]	36.4 [0.4]	0.004*
After	36.7 [0.4]	36.5 [0.5]	0.102
Respiratory rate (cycles/minute)			
Before	20 [5]	16 [4]	0.377
During	20 [4]	18 [4]	0.742
After	18 [4]	20 [4]	0.664
Oxygen saturation (%)			
Before	99 [2]	98 [2]	0.033*
During	99 [2]	97 [3]	0.054
After	98 [2]	99 [3]	0.817
Heart rate (rpm)	Mean ± SD	Mean ± SD	
Before	77.7 ± 14.2–	69.3 ± 11.8–	0.384
During	73.0 ± 13.2–	68.1 ± 11.1–	0.488
After	74.3 ± 14.2–	67.7 ± 11.3–	0.402

°C: Celsius degree. mmHg: millimeters of mercury. =: arithmetic mean and standard deviation.

Table IV. Data measured according to the use or not of medication for anxiety.

	Anxiety without use of medication	Anxiety with use of medication	p value
Systolic pressure (mmHg)	Median [IR]	Median [IR]	
Before	120 [20]	120 [20]	0.870
During	120 [20]	120 [15]	0.834
After	120 [20]	120 [18]	0.789
Diastolic pressure (mmHg)			
Before	80 [10]	80 [18]	0.554
During	80 [10]	75 [18]	0.486
After	80 [10]	80 [18]	0.788
Temperature (°C)			
Before	36.4 [0.5]	36.5 [0.8]	0.919
During	36.6 [0.5]	36.5 [0.7]	0.623
After	36.6 [0.5]	36.6 [0.7]	0.596
Respiratory rate (cycles/minute)			
Before	16 [4]	18 [4]	0.749
During	20 [4]	20 [4]	0.312
After	20 [4]	18 [4]	0.793
Oxygen saturation (%)			
Before	98 [3]	98 [3]	0.840
During	98 [3]	97 [5]	0.196
After	99 [3]	98 [3]	0.857
Heart rate (rpm)	Mean ± SD	Mean ± SD	
Before	74.6 ± 13.8	69.0 ± 12.5	0.561
During	71.5 ± 12.9	66.5 ± 9.1	0.231
After	71.9 ± 13.7	67.1 ± 10.5	0.326

°C: Celsius degree. mmHg: millimeters of mercury. =: arithmetic mean and standard deviation.

Table V. Data measured according to the procedure clinics.

	Restorative dentistry clinic	Oral surgery clinic	Periodontics clinic	p value
Systolic pressure (mmHg)	Median [IR]	Median [IR]	Median [IR]	
Before	120 [10]	120 [10]	120 [20]	0.267
During	120 [10]	120 [20]	120 [28]	0.066
After	120 [18]	120 [10]	115 [28]	0.299
Diastolic pressure (mmHg)				
Before	80 [18]	80 [8]	80 [20]	0.539
During	75 [20]	80 [10]	80 [10]	0.284
After	80 [10]	80 [0]	75 [18]	0.132
Temperature (°C)				
Before	36.5 [0.4]	36.3 [0.5]	36.2 [0.6]	0.041*
During	36.6 [0.4]	36.6 [0.5]	36.3 [0.5]	0.370
After	36.6 [0.4]	36.6 [0.3]	36.4 [0.6]	0.354
Respiratory rate (cycles/minute)				
Before	18 [4]	20 [4]	16 [8]	0.082
During	20 [4]	20 [4]	16 [7]	0.007*
After	20 [4]	20 [4]	16 [7]	0.002*
Oxygen saturation (%)				
Before	98 [3]	98 [4]	98 [2]	0.304
During	99 [3]	97 [3]	97 [2]	0.618
After	99 [2]	97 [5]	98 [2]	0.223
Heart rate (rpm)	Mean ± SD	Mean ± SD	Mean ± SD	
Before	75.7 ± 15.5	73.7 ± 13.7	71.2 ± 11.8	0.050*
During	70.5 ± 12.0	73.0 ± 14.0	68.1 ± 11.0	0.967
After	72.6 ± 15.2	70.5 ± 11.5	69.9 ± 13.0	0.967

°C: Celsius degree. mmHg: millimeters of mercury. =: arithmetic mean and standard deviation.

DISCUSSION

The dental appointment can be an discomfortable emotional experience. Dental teams can help in reducing the factors associated with stress. Therefore, it is important that the professional has empathy, good listening and explanation skills, with an accessible language. It is important to point out that the factual content – rhythm, tone, volume and speed – in which patients speak, demonstrate their information, and thus, it becomes possible to identify their level of anxiety (MacLeavy, 2020; Lopes *et al.*, 2021; Li *et al.*, 2022).

The patients avoid dental treatment due to fear, which results in a vicious circle, causing a higher prevalence and disease severity (Murad *et al.*, 2020). The response to anxiety state, tension, nervousness and worry is monitored by the autonomic nervous system activity, which relates to the innervation of the heart and blood vessels. This system is important to maintain homeostasis. Therefore, when triggered, it can lead to alterations of vital signs (Peniche *et al.*, 1999; Loures *et al.*, 2002; Salma *et al.*, 2019). In this study, it was possible to observe that diastolic pressure before the procedure was higher for slightly anxious patients than to extremely anxious patients. Therefore, the patient management should happen regardless of the patients' previously reported level of anxiety.

Some common methods that originate dental anxiety besides pain can be the lack of trust, fear of the unknown, feeling of powerlessness and lack of control during dental treatment. The interventions to reduce the level of anxiety includes anxiolytic-sedative drugs such as benzodiazepines, serotonin reuptake inhibitors, as well as psychotherapeutic interventions, information and effective communication, cognitive-behavioral therapy, music and massage therapy (Appukuttan, 2016; Madsen *et al.*, 2020). The results of the measurements of vital signs in relation to the use or not of medication for anxiety were not significant, since the study participants were not psychiatric and did not use anxiety medication continuously.

The pain and anxiety plays an important role in individual cardiovascular response during dental treatment. The proper analgesia must be provided for each intended treatment, as pain can lead to release of endogenous catecholamines, which may cause hemodynamic changes. In this case, the physiological response is to experience an increase in heart rate and blood pressure (Brand & Abraham-Inpijn, 1996;

Silvestre *et al.*, 2011; Balasubramaniyan *et al.*, 2016). In this study analysis, the heart rate before the procedure was the highest in the restorative dentistry clinic. This can be due to the pain that the patient presents before the treatment, promoted by very deep caries, very extensive restorations and poorly adapted restorations.

During dental procedures, the fear can promote systemic disturbances. In most treatments, local anesthetics are administered. However, this triggers fear in patients, which is one of the main reasons for anxiety (Fukayama & Yagiela, 2006; Parekh *et al.*, 2014; Lasemi *et al.*, 2015; Marques-Ferreira *et al.*, 2017). Based on the results of the three clinics that regularly use local anesthesia, the periodontics clinic stood out for presenting the lowest respiratory rate during the procedure. This may have been influenced due to the adequate and correct use of analgesia, as well as the correct management of the patient. Therefore, correct anxiety management and good pain control have a positive impact on the patient's periodontal health, as anxiety contributes to the progression of periodontitis (Makkar *et al.*, 2018; Zheng *et al.*, 2021).

The blood pressure readings may be affected by several factors, such as age and gender (Salma *et al.*, 2019). According to the results, it was possible to observe that there was a difference in systolic pressure, as well as diastolic pressure according to sex in almost all evaluation moments. Liau *et al.* (2008), found that men had a higher percentage of anxiety. Men do not try to find out about their health status and, in most cases, have a less healthy lifestyle (Courtenay, 2000). This can be explained, as they do not seek regular medical/dental help, they reach pain more easily and thus become more anxious about the treatment. Unlike this study, Salma *et al.* (2019), and Tulloch & Rubin (2019), showed that women generally present higher anxiety levels before dental procedures. This fact occurs as a result of women having a higher prevalence of mood and anxiety disorders and because they are considered more vulnerable to hormonal issues (Riecher-Rössler, 2017; Ross & Van Bockstaele, 2020).

The pulse oximetry is a non-invasive method that helps to evaluate peripheral vascular health (Bruno *et al.*, 2014). Monitoring the pulse oximetry can prevent hypoxemia before clinical and surgical procedures, makes it possible to detect hypoxemia, allowing preventive care for lipothymia and syncope to the patient (Pedersen *et al.*, 2014). In this study,

the oxygen saturation before the procedure was the lowest to the participants above 40 years of age, which was already expected, since circulatory and psychosomatic problems are acquired with advancing age.

The body temperature is regulated through autonomous and behavioral means. However, it is considered asymmetrical due to its position: there are a few degrees from the upper limit of survival, but relatively far from the lower limit (Romanovksy, 2007). Analyzing the temperature before the procedure, it was found that it was higher in the restorative dentistry clinic. According to Marazziti *et al*. (1992), emotional stress can cause significant alterations in the body temperature. Thus, the painful state of infection for the removal of deep cavities and very extensive restorations can generate an increase in temperature prior to the treatment of restorations. However, it is interesting to point out that in procedures considered to be of greater stress, such as minor oral surgery, there was no significant change.

Furthermore, it was possible to see that diastolic pressure before, during and after the procedure was higher for participants above 40 years of age. According to Rãducanu *et al*. (2009), the younger patients were more anxious than older ones, as human cognitive ability grows with increasing age, thus resulting in better awareness and understanding. On the other hand, Luo *et al*. (2020) reported that older individuals have an increase in systolic blood pressure and a decrease in diastolic blood pressure during a traumatic event, such as going to the dentist. Therefore, it is important for the professional to check the blood pressure of their patients before each appointment, redoubling their attention to patients at more advanced ages, as even if they understand the situation and the environment in which they are, they still find themselves anxious.

The results of this study should not be used as a basis for treating patients with comorbidities, as it included only healthy adults. Plus, as they were analyzed by non-invasive methods, it may have small inaccuracies. Thus, in the next studies, more groups of participants with diseases can be covered, in addition to quantifying the use or not of the anesthetic, in order to be able to associate it with dental anxiety. It is expected to guide the participants and the dental team about the prevention of anxiety and, if necessary, refer those who present significant alterations for psychological follow-up.

CONCLUSION

It is concluded that the vital signs, sex, age and the level of anxiety influence the analysis of blood pressure in different clinical moments. The nature of the clinic is associated with variations in temperature, heart rate and respiratory rate. Still, anxiety can interfere with vital signs throughout the service and generate stress in the dental environment. Therefore, it is necessary to manage anxiety before consultations, regardless of age or gender, to make the dental experience less traumatic and safer.

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RESUMEN: El objetivo de este estudio fue evaluar los signos vitales relacionados con diferentes tratamientos dentales y correlacionarlos con datos demográficos y el nivel de ansiedad de los participantes. Este es un estudio clínico prospectivo con 60 participantes, divididos en 3 grupos de procedimientos dentales: (1) tratamiento restaurador, (2) extracciones y biopsias, y (3) tratamiento gingival. Se recogió un cuestionario de nivel de ansiedad antes del procedimiento odontológico propuesto por la Escala de Ansiedad Dental de Corah. Se midieron la frecuencia respiratoria, la presión sistólica y diastólica, la temperatura y la oxigenación antes, durante y después de los procedimientos. Se incluyeron 31 (51,7 %) mujeres y 29 (48,3 %) hombres, con edad media de 41,75 años. La mayoría de los participantes (50 %) fueron clasificados como muy poco ansiosos. La presión diastólica antes del procedimiento fue mayor en los pacientes ligeramente ansiosos en comparación con los pacientes muy poco ansiosos(p=0,028). La presión sistólica antes, durante y después del procedimiento fue mayor para los participantes mayores de 40 años (p=0,001). La frecuencia cardíaca (p=0,050) y la temperatura (p=0,041) fueron mayores antes del tratamiento restaurativo. La ansiedad puede promover cambios en los signos vitales en el entorno dental. Los signos vitales, el sexo, la edad y el nivel de ansiedad sí influyen en la presión arterial en los diferentes momentos clínicos. Los procedimientos dentales tienen asociación con variaciones de temperatura, frecuencia cardíaca y respiratoria.

PALABRAS CLAVE: ansiedad. asistencia sanitaria. signos vitales.

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