Oral health status and dental care for hospitalized patients with facial fractures

Condição de saúde bucal e cuidado clínico-odontológico para pacientes hospitalizados com fratura de face

Estado de salud oral y atención clínico-odontológica de los pacientes hospitalizados con fractura facial

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Abstract
Objective: to analyze the oral health profile of inpatients victims of oral and maxillofacial trauma at the Institute Dr. José Frota Hospital, Ceará, Brazil. Methodology: a study carried out in 2020 started with an examination of the oral cavity at the bedside, application of the DMFT and The Bedside Oral Exam indexes, together with the survey of dental needs and application of the Oral Health Impact Profile Scale (OHIP-14), relating the findings, applying average, standard deviation and calculating Cronbach's alpha coefficient and Spearman's correlation for the OHIP-14 finding. Results: We evaluated 78 patients, mostly male (88%), with a mean age of 32.72 ± 11.63 years old, with hypertension being the most prevalent comorbidity. Besides, 60% of the sample had a fracture in the lower third of the face. The average number of decayed teeth per patient was 5.69. About 62.82% had poor oral health, seen from generalized biofilm and swollen gums. Low-Level Laser therapy was indicated for 94.8% of the sample, periodontal treatment in 58.9%, restorative therapy in 69.2%, and surgical in 42.3%. Regarding the OHIP-14 questionnaire, facial trauma negatively impacted the participants' quality of life, especially in dimensions related to pain. Conclusion: there was a significant prevalence of oral diseases, such as gingivitis and dental caries, which justifies the need for dental intervention before the maxillofacial surgical approach.
Keywords: Dental care; Hospital; Facial injuries; Quality of life.

Resumo
Objetivo: analisar o perfil de saúde oral de pacientes internados vítimas de traumas orais e maxilo-faciais no Hospital Instituto Doutor José Frota, Ceará, Brasil. Metodologia: estudo realizado em 2020 iniciou com exame da cavidade oral à beira do leito, aplicação dos índices CPO-D e The Bedside Oral Exam, juntamente com o levantamento das necessidades odontológicas e aplicação do questionário Perfil de Impacto na Saúde Bucal (OHIP-14), relacionando os resultados, aplicando média, desvio padrão e calculando o coeficiente alfa de Cronbach e a correlação de Spearman para o resultado do OHIP-14. Resultados: Avaliados 78 pacientes, a maioria do sexo masculino (88%), com uma idade média de $32,72 \pm$ 11,63 anos, sendo a hipertensão arterial a comorbidade mais prevalente. Além disso, 60% da amostra apresentava fratura

no terço inferior da face. O número médio de dentes cariados por paciente foi de 5,69. Cerca de 62,82% tinham uma saúde oral deficiente, a partir da presença de biofilme generalizado e gengivas inchadas. A laserterapia de baixa potência foi indicada para 94,8% da amostra, tratamento periodontal em 58,9%, terapia restauradora em 69,2%, e cirurgia em 42,3%. Relacionado ao questionário OHIP-14, o traumatismo facial teve um impacto negativo na qualidade de vida dos participantes, especialmente nas dimensões relacionadas a dor. Conclusão: houve uma prevalência significativa de doenças orais, tais como a gengivite e a cárie dentária, o que justifica a necessidade de intervenção odontológica antes da abordagem cirúrgica maxilo-facial definitiva.
Palavras-chave: Cuidados odontológicos; Equipe hospitalar de odontologia; Traumatismos faciais; Qualidade de vida.

Resumen
Objetivo: analizar el perfil de salud oral de los pacientes hospitalizados víctimas de traumatismos orales y maxilofaciales en el Hospital Instituto Dr. José Frota, Ceará, Brasil. Metodología: estudio realizado en el año 2020, iniciado con el examen de la cavidad bucal a la cabecera, aplicación de los índices CPO-D y The Bedside Oral Exam, junto con la encuesta de necesidades odontológicas y aplicación de la Perfil de Impacto en la Salud Bucal (OHIP-14), relacionando los hallazgos, aplicando media, desviación estándar y calculando el coeficiente alfa de Cronbach y la correlación de Spearman para el hallazgo OHIP-14. Resultados: Se evaluaron 78 pacientes, en su mayoría varones (88%), con una edad media de 32,72 ± 11,63, siendo la hipertensión la comorbilidad más prevalente. Además, el 60% de la muestra presentaba fractura en el tercio inferior de la cara. El número medio de dientes cariados por paciente era de 5,69. Alrededor del 62,82% tenía una mala salud bucal, observada a partir de un biofilm generalizado y encías inflamadas. Láser de baja intensidad estaba indicada en el 94,8% de la muestra, el tratamiento periodontal en el 58,9%, la terapia restauradora en el 69,2% y la quirúrgica en el 42,3%. En cuanto al cuestionario OHIP-14, el traumatismo facial impactó negativamente en la calidad de vida de los participantes, especialmente en las dimensiones relacionadas con el dolor. Conclusión: hubo una importante prevalencia de enfermedades orales, como la gingivitis y la caries dental, lo que justifica la necesidad de una intervención dental antes del abordaje quirúrgico maxilofacial.
Palabras clave: Atención odontológica; Personal de odontología en hospital; Traumatismos faciales; Calidad de vida.

1. Introduction

The word trauma comes from the Greek "traûma", which means "wound", characterized by a violent action injury, originating outside the organism, representing a costly injury to the Unified Health System. In the meantime, the World Health Organization (WHO) estimates that the global number of deaths from trauma will reach 2.4 million in 2030 (WHO, 2018).

The oral and maxillofacial traumas are associated with various etiological factors, such as negligence in traffic, drug and alcohol abuse, and interpersonal violence, influenced by the population's lifestyle and psychosocioeconomic status (Abosadegh & Rahman, 2018). An epidemiological study carried out in the United States revealed that most of the admissions to the emergency department were men who were victims of motorcycle accidents, affected by open and closed mandibular fractures (Allareddy et al., 2011).

In a complementary way, in facial traumas, the repercussions and/or sequelae are associated both with the stomatognathic functional condition and with the physical and mental well-being, with repercussions from the hospitalization period until the conditioning after discharge (Conforte et al., 2016; Prashanth et al., 2015; Kaukola et al., 2015).

In the literature, the OHIP-14 questionnaire is used to measure the perception of the influence of oral health on the social sphere and quality of life. In this perspective, Conforte et al. (2016) and Lewandowski et al. (2018) reinforced that the immediate post-traumatic period is associated with the prevalence of pain complaints and difficulty in eating, as well as limitations due to hospitalization. Thus, the hospitalization process may compromise the oral health of patients, as a result of limitations in performing self-care, given the weakness of their condition, impacting well-being and increasing the risk of secondary infections (Fiske et al., 2000; Needleman et al., 2012).

Thus, although oral diseases represent preventable diseases, inequality in access and use of dental services in Brazil contributes to the process of developing caries and periodontal disease in the population, negatively influencing identity and interpersonal relationships. Dental caries represents the most common oral disease among the population, with the most common etiological agents to *S. mutans* and *Lactobacillus*, being associated with oral pain and loss of teeth (Needleman et al., 2012;

BRASIL, 2010; Peres et al., 2019).

In studies carried out in Brazilian public hospitals, we can observe a sample of the population affected by carious lesions and periodontal disease. The panorama is described by Souza et al. (2017), from an integrative review, revealed that most of the hospitalized patients had periodontal problems, reinforcing the need for treatment and implementation of oral hygiene instructions, aiming at the prevention of oral infections that may progress to secondary infections.

Given the high incidence of facial bone trauma, which is dynamic and with a high risk of contamination of the surgical site, the hospital dentist and the maxillofacial surgeon need to know the clinical, dental, and psychological profile of the patient for effective therapy and to avoid secondary infections in the postoperative period for this patient. The literature is scarce when it comes to dental care protocols for hospitalized trauma victims.

We believe that this population has a high rate of caries and gingivitis, causing pain and discomfort, and the need for intervention to adapt the mouth. This study seeks to characterize the incidence of fractures in the face region and the impacts of trauma on the quality of life and oral health conditions of patients admitted to the Hospital Instituto Dr. José Frota.

2. Methodology

Study population

This is a cross-sectional, descriptive, and analytical study, with a quantitative approach. The inclusion criteria were patients older than 18 years old traumatized in the face hospitalized at the Instituto Dr. José Frota Hospital (IJF), Fortaleza, Ceará, Brazil, who had fractures of the bones of the face with surgical indication, with up to 72 hours of hospitalization, from the convenience sampling. We excluded patients with fractures in only the bones of the nose (OPN), due to a hospital stay of up to 48 hours, and patients unable to understand and answer the OHIP-14 questionnaire. Previously, we submitted the research and it was approved by the Research Ethics Committee of the Instituto Dr. José Frota Hospital, under CAAE 25631119.7.0000.5047, under opinion number 3,811,860. The study took place between March and August 2020.

Oral Condition Assessment

We evaluated the patients on the hospitalization bed in the emergency room of the hospital and invited them to participate in the research. When they agreed, they signed the Informed Consent Form (ICF). A single researcher performed the data collection through a clinical-dental examination, carried out at the bedside, with the aid of artificial light (headlamp), wooden spatula, blunt-tip probe, and sterile gauze, to dry surface, respecting biosafety criteria. The Bedside Oral Exam (BOE) index (Prendergast et al., 2012) assessed the mucosal integrity. In its original proposal, it is used as an oral health measure in patients admitted to Intensive Care Units, enabling the evaluation of eight subtitles: swallow, lips, tongue, saliva, mucous membranes, gingiva, teeth or dentures, and odor. A change was made to the "tongue" category, and the presence of a lingual coating was added for this research. Total scores range from 8 (excellent oral health) to 24 (poor oral health). For the caries diagnosis, we used the DMFT index (WHO, 1998) that expresses the sum of decayed, missing, and filled teeth. High values of this index reflect poor oral health conditions. After the oral examination, the dental needs of the participants were raised: restorative, endodontic, surgical, periodontal therapy, semi-rigid containment, and use of low-power laser.

Quality of Life Assessment

To assess the participants' quality of life, we applied the OHIP-14 questionnaire (Conforte et al., 2016), adapting the end of each sentence, replacing the phrase "because of problems with your teeth, mouth or denture" with "after suffering facial trauma". Scores range from 0 to 56 so that high numbers reveal the worsening of oral health and well-being. The instrument addresses seven

domains, described in functional limitation (Q1 and Q2), physical pain (Q3 and Q4), psychological discomfort (Q5 and Q6), physical disability (Q7 and Q8), psychological disability (Q9 and Q10), social disability (Q11 and Q12) and handicap (Q13 and Q14).

Data Analysis and Statistics

We tabulated the data in Microsoft Excel 2010 (MICROSOFT CORPORATION, 2010) and expressed it in the form of absolute frequency, percentage, average, and standard deviation. Data from the OHIP-14 questionnaire were exported to SPSS version 20.0 (Windows), adopting 95% confidence in the analyzes. The averages, standard deviations, and frequencies of each item and each domain were calculated and submitted to internal consistency analysis by calculating the total Cronbach's alpha coefficient and if the item/domain was deleted. Spearman's correlation was performed to correlate each item/domain with the overall OHIP-14 score. The OHIP-14 scores and BOE categories were categorized based on the median (29) at low (<29) and high (30+) dissatisfaction with the quality of life-related to oral health and two categories were created (very satisfactory vs. not very satisfactory) which were associated with other variables using Fisher's exact test or Pearson's chi-square test.

3. Results

As a result of the study, we selected 78 patients, mostly male 69 (88%) and the cases were concentrated in the age group of 21 to 30 years old (33.33%). The motorcycle accident was the most prevalent (61.54%), where the mandible was the most affected site (64.10%) and 51.28% had more than one bone in the fractured face. Of those analyzed, 46 (58.97%) patients did not report habits or addictions, 22 (28.21%) patients had a smoking habit, 09 (11.54%) said they abuse alcohol, and 05 (6.41 %) used illicit drugs. Systemic complications were found in 19 (24.36%) patients among those selected, the most prevalent being systemic arterial hypertension, with 10 (12.82%) cases of the disease. Only one patient had more than one comorbidity (Table 1).

Table 1: Distribuition of frequencies according to variables of hospitalized patients with facial trauma.

Variables	Mean	Standard deviation	Minimum	Maximum
Age	32,71	11,63	18	62

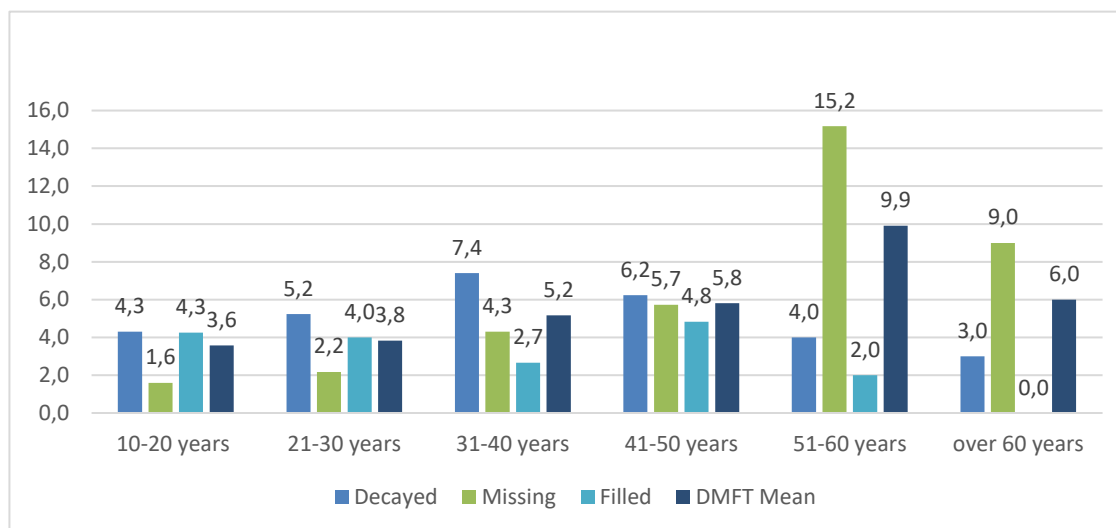|	Frequency	Percentage (%)
Sex		
Females	9	12
Males	69	88
Age group		
18 – 20 years	14	17,95
21 – 30 years	26	33,33
31 – 40 years	17	21,79
41 – 50 years	14	17,95
51 – 60 years	6	7,69
over 60 years	1	1,28
Injury mechanism		
Motorcycle accident	48	61,54
Physical aggression	12	15,38
Gunshot	11	14,1
Bicycle accident	3	3,85
Sport-related accident	2	2,56
Car accident	1	1,28
Accident vehicle-pedrestrian	1	1,28
Facial bone fracture		
Mandíbular	50	64,1
Zygomatic complex	42	53,85
Maxillary	17	21,79
Nasal bonés	11	14,1
Naso-ethmoid orbital	10	12,82
Frontal	6	7,69
Orbital	5	6,41
Fracture in another body bone		
Yes	8	10,26
No	70	89,74
Face fracture sites		
Single boné	38	48,72
Two bones	18	23,08
Three bones	14	17,95
Four bones	6	7,69
Five bones	1	1,28
Panfacial fracture	1	1,28

Source: SPSS v20.0.

Oral Health Condition

When performing the BOE exam most patients had Moderately Impaired Oral Health (Table 2). When we crossed the DMFT data with the age group, the highest average of this index was found in the fifth decade of life, with a value of 9.9 due to the

greater number of missing teeth. The highest average of decayed teeth is found in the third decade and the fourth decade of life, with values of 7.4 and 6.2, respectively (Table 2 and Figure 1).

Figure 1: DMFT average distribution by age group.

Source: Authors.

Table 2: Analysis of Oral Health - DMFT and BOE.

Variables	Mean	Standard deviation
DMFT	9,85	6,03
D	5,69	3,66
M	4,98	5,55
F	3,78	2,12
Oral Health Status (BOE)	**Frequency**	**Percentage (%)**
Good Oral Health	13	16,67
Moderately Impaired Oral Health	49	62,82
Significant Deterioration Oral Health	16	20,51

Source: SPSS v20.0.

Need for dental care

We found that 94.87% of the patients had an indication for laser therapy, 54 (69.23%) for restorative treatment, 46 (58.97%) for periodontal treatment, 33 (42.31%) for surgical treatment, 15 (19.23%) of endodontic treatment and 8 (10.26%) of treatment with semi-rigid restraint, since 16 patients had dental trauma, whether due to avulsion, dental-alveolar or coronal fracture and 2 (2.56 %) of the research patients did not need treatment (Table 3).

Table 3: Distribution of dental procedures required for patients with facial trauma.

Dental Treatment	Only fracture of mandibule and maxile	Percentage (%)	All patients with facial fractures	Percentage (%)
Low-level laser therapy	58	74,36	74	94,87
Restorative	40	51,28	54	69,23
Periodontal	38	48,72	46	58,97
Surgery (exodontia)	29	37,18	33	42,31
Endodontic (pulpectomy)	13	16,67	15	19,23
Dental splints	8	10,26	8	10,26
No need	1	1,28	2	2,56

Source: SPSS v20.0.

Quality of life assessment

Severe pains in the mouth were experienced "frequently" and "always" by a total of 48 people (61.54%), while discomfort during feeding by 46 (58.97%). Speech limitations occurred "always" in 24 (30.77%) of the patients and "never" in 13 (16.67%) of them. Another finding of the study was that patients who presented fractures of the maxilla and/or mandible had a greater negative impact on the dimensions of "social disability", "physical pain" and "physical disability", with percentages of 97.66%, 86.72 %, and 74.22%, respectively, as shown in the table below. There was an impact on the questionnaire, with worsening quality of life, for patients with moderate lip assessment and unpleasant odor (Table 4 and 5).

Table 4. Analyses of OHIP-14 scores and BOE categories were categorized based on median (29) into low (<29) and high (30+).

	Total	<30	30+	p-Valor
Lips				
1	42 (53.8%)	29 (67.4%)*	13 (37.1%)	*0,013*[b]
2	35 (44.9%)	13 (30.2%)	22 (62.9%)*	
3	1 (1.3%)	1 (2.3%)	0 (0.0%)	
Odor				
1	15 (19.2%)	9 (20.9%)*	6 (17.1%)	*0,047*[b]
2	48 (61.5%)	30 (69.8%)*	18 (51.4%)	
3	15 (19.2%)	4 (9.3%)	11 (31.4%)*	
Results BOE				
8-10 Good Oral Health	13 (16.7%)	10 (23.3%)	3 (8.6%)	0,105[a]
11-14 Moderately Impaired Oral Health	49 (62.8%)	27 (62.8%)	22 (62.9%)	
15-24 Significant Deterioration Oral Health	16 (20.5%)	6 (14.0%)	10 (28.6%)	

*p<0,05, Pearson Qui-squared test or the Fisher exact Test (n, %). [a]Fisher's exact test; [b]Chi-square test. Source: SPSS v20.0.

Table 5. Mean, SD and frequencies of each item and each domain of the OHIP-14 questionnaire.

	Mean±SD	Croncahs's alpha	Spearman's[o] Correlation	Scores OHIP-14[d]				
				0 never	**1** rarely	**2** sometimes	**3** repeatedly	**4** always
Questions		**0,676**[a]						
Q1	2.38±1.43	0,674[b]	p<0.001 (r=0.447)*	13 (16.7%)	7 (9.0%)	19 (24.4%)	15 (19.2%)	24 (30.8%)
Q2	1.32±1.42	0,637[b]	p<0.001 (r=0.557)*	36 (46.2%)	8 (10.3%)	13 (16.7%)	15 (19.2%)	6 (7.7%)
Q3	2.68±0.99	0,658[b]	p=0.001 (r=0.373)*	2 (2.6%)	7 (9.0%)	21 (26.9%)	32 (41.0%)	16 (20.5%)
Q4	2.50±1.47	0,633[b]	p<0.001 (r=0.574)*	14 (17.9%)	5 (6.4%)	13 (16.7%)	20 (25.6%)	26 (33.3%)
Q5	2.68±0.95	0,657[b]	p<0.001 (r=0.439)*	2 (2.6%)	5 (6.4%)	24 (30.8%)	32 (41.0%)	15 (19.2%)
Q6	0.87±1.17	0,665[b]	p=0.002 (r=0.348)*	41 (52.6%)	19 (24.4%)	9 (11.5%)	5 (6.4%)	4 (5.1%)
Q7	3.17±1.25	0,660[b]	p=0.001 (r=0.380)*	7 (9.0%)	3 (3.8%)	4 (5.1%)	20 (25.6%)	44 (56.4%)
Q8	1.53±1.10	0,655[b]	p<0.001 (r=0.455)*	18 (23.1%)	18 (23.1%)	27 (34.6%)	13 (16.7%)	2 (2.6%)
Q9	1.87±1.28	0,648[b]	p<0.001 (r=0.533)*	16 (20.5%)	13 (16.7%)	22 (28.2%)	19 (24.4%)	8 (10.3%)
Q10	0.88±1.17	0,680[b]	p=0.034 (r=0.241)*	44 (56.4%)	11 (14.1%)	13 (16.7%)	8 (10.3%)	2 (2.6%)
Q11	0.31±0.73	0,662[b]	p=0.003 (r=0.331)*	63 (80.8%)	9 (11.5%)	3 (3.8%)	3 (3.8%)	0 (0.0%)
Q12	1.47±1.24	0,651[b]	p<0.001 (r=0.529)*	23 (29.5%)	18 (23.1%)	17 (21.8%)	17 (21.8%)	3 (3.8%)
Q13	2.83±0.71	0,663[b]	p=0.001 (r=0.354)*	0 (0.0%%)	3 (3.8%)	18 (23.1%)	46 (59.0%)	11 (14.1%)
Q14	3.45±0.70	0,677[b]	p=0.155 (r=0.162)	0 (0.0%%)	1 (1.3%)	6 (7.7%)	28 (35.9%)	43 (55.1%)
Domain		**0,732**[a]						
Functional limitation	3.71±2.14	0,690[b]	p<0.001 (r=0.665)*					
Physical pain	5.18±1.84	0,686[b]	p<0.001 (r=0.653)*					
Psycological Disconfort	3.55±1.65	0,713[b]	p<0.001 (r=0.508)*					
Physical diability	4.69±1.98	0,710[b]	p<0.001 (r=0.519)*					
Psycological disability	2.76±1.89	0,710[b]	p<0.001 (r=0.505)*					
Social disability	1.78±1.54	0,709[b]	p<0.001 (r=0.591)*					
Handicap	6.28±0.98	0,729[b]	p=0.001 (r=0.370)*					
Ohip-14	**27.95±7.01**							

[a]Cronbach's α; [b]Cronbach's α if the item is removed; [c]Spearman's correlation with OHIP-14 scores (*p<0.05); [d]Absolute and percent frequency of each scale item score. Source: SPSS v20.0.

5. Discussion

According to the survey data, the incidence of maxillofacial trauma was higher among males (88%), with the third decade of life being the age group with the greatest involvement, representing 33.33% of cases. These findings are similar to other studies (Abosadegh & Rahman, 2018; Allareddy et al., 2011; Gupta et al., 2009; Einy et al., 2016) when they highlighted the male gender as the majority and being victims of urban violence and traffic accidents and average young age.

In the research, the main associated etiological factors were motorcycle accidents and accidents related to aggression, associated or not with drug use. The panorama seen can be attributed to the fact that this age group is often involved in the inadequate and careless driving of motorcycles, coupled with the increase in the number of vehicles, non-use of helmets, and the growing urban violence according to literature data (Abosadegh & Rahman, 2018; Einy et al., 2016).

Due to the discomfort from pathological changes after the hospitalization period, and changes in routine and habits (Sousa et al., 2014) many hospitalized patients neglect oral and body hygiene care, reducing the frequency of tooth brushing, which favors the creation of a favorable environment for the development and maturation of dental biofilm (Carrilho et al., 2011; Amaral et al., 2018).

The results obtained, using the BOE index, reinforced the deficiency in the oral health of the sample (62.82%), seen from inflammation and gingival edema (56.41%), combined with the presence of generalized biofilm in teeth. Among the participants with the worst score on the BOE index, there was worse control of dental plaque and the presence of a thick tongue coating. This shows that these patients already arrived at the hospital with an acute oral health condition, with the need to intervene previously to avoid worsening the systemic and local condition.

According to data from the last epidemiological survey on oral health in Brazil, SB Brasil (2010), the average DMFT for the 35-44 age group was 16.75, while the Northeast region had an average of 1.99 decayed teeth and 8.92 missing teeth. However, the survey reflects a lower average value when compared with the last national and regional census average, however alarming, considering that 80% of the patients had dental caries.

Also, the average of 15.2 teeth lost in the age group from 51 to 60 years stands out, revealing that, over the years, the degree of edentulism increases, similar to the one in the literature, which suggests the worsening in oral health with advancing age (Carrilho et al., 2011). Consequently, Amaral et al. (2018) in their clinical study, obtained an average DMFT of 17.9, with 1.95 decayed teeth, while 68.9% needed for restorative treatment, emphasizing the demand for oral health and the presence of the dental surgeon in the multi-professional teams to establish an oral care routine.

The bidirectional relationship of oral and systemic diseases is already well documented in the literature, together with the high risk of worsening (Lewandowski et al., 2018; Peres et al., 2019). Among the study participants, 76 patients (97.44%) needed preoperative clinical and dental follow-up, where 12.82% had a chronic pathology common to the Brazilian population, such as systemic arterial hypertension. Indication of extractions, given the presence of root remains or teeth with extensive coronary destruction, restorative treatment, and periodontal therapy were corresponding to procedures, mostly of moderate complexity, routine to the dentist's clinic. Also, 23 participants (29.49%) reported some major dental complaints related to dental-alveolar trauma or dental pain. Thus, based on studies, there is a significant number of patients who need treatment in the hospital for dental pains (Carrilho et al., 2011; Amaral et al. (2018).

For patients diagnosed with paresthesia and/or facial paralysis, post-trauma, and neural injury, we indicated a low-level laser treatment (94.87%), also titled Laser therapy, and more recently, Photobiomodulation (PBM). Infrared light therapy is non-invasive, effective, which is based on a photochemical effect and has positive effects on axonal growth and regeneration of neural injuries in vivo (Merigo et al., 2019; Qi et al., 2020).

In the OHIP-14 questionnaire, we found that the trauma interfered with the participants' quality of life, especially in the

social, pain, and physical disability dimensions. Since 51% of the patients had more than one bone in the fractured face, increasing the complexity of treatment, the main complaints reported during the clinical and dental examination were: "pain in the teeth when I speak", "bad to brush my teeth", "teeth don't fit, it's bad to eat", "pain in the broken tooth" and "pain in that root tooth". Conforte et al. (2016) talk about a similar pattern of facial fractures and their impact on patients' quality of life, especially in the areas of functional disability and physical pain, immediately after the trauma. Nevertheless, outcomes related to psychological and social disability are seen less frequently. However, despite the lower number of patients reporting impacts related to shame, they reported concern about their physical appearance due to fracture features, bruises on the face, or facial paralysis.

Many patients were hopeful in improving physical comfort after definitive surgical treatment, since oral-maxillofacial trauma affected the physical pain dimension, especially during feeding, similar to the findings of Magalhães et al. (2018) after analyzing events of condyle fracture, suggesting that, for the success of surgical treatment, in addition to the patient's clinical conditions, the psychological sphere should be considered.

The mobility of fractured mandibular stumps causes discomfort due to friction in the periosteum region (Lewandowski et al., 2018). For this reason, patients who had a mandible fracture exhibited greater complaints about the food, even with a mild or liquid diet, and in the pronunciation of words. In this sense, studies (Lewandowski et al., 2018; Omeje et al., 2015) emphasize the need for special management for these patients, due to the presence of multiple fractures and exacerbation of painful symptoms during manipulation. For the treatment of oral adequacy of these patients, the use of a good local anesthetic technique and immobilization of the segments fractured is recommended for greater patient comfort.

The limitations of the research correspond to the limited sample size, a panorama that, in part, is due to the pandemic of COVID-19. We could not assess the effects of dental procedures performed before definitive surgical treatment and their impact on the patient's well-being. Given the results, we need to elaborate an intervention plan for the adequacy of the oral health of these patients before the definitive surgical approach, seeking to reduce the risks of postoperative infections, especially patients with different foci of infection and multiple fractures of the face, given limitation and difficulty of oral hygiene caused by the accident.

6. Conclusion

Most patients needed dental intervention in a hospital environment, evidenced by the presence of periodontal disease and dental caries. Facial trauma inferred repercussions on the quality of life, affecting aspects of speech, food, and general well-being. Also, multiple fractures in the face reflected the participants' neglect of oral care. We conclude that patients indicate oral adequacy before the treatment of definitive fractures.

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