ORIGINAL ARTICLE

Self-perception of periodontal condition in cancer patients: association with stress and anxiety levels

Autopercepção da condição periodontal em pacientes oncológicos: associação com níveis de estresse e ansiedade

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ABSTRACT

Background: This study aimed to evaluate the self-perception of periodontal condition and its association with perceived stress and dental anxiety in patients undergoing cancer treatment. **Methods:** 60 patients undergoing cancer treatment at the University Hospital were interviewed, using questionnaires containing multiple-choice questions. Variables related to medical and sociodemographic data, self-perception of oral health and periodontal condition, levels of perceived stress, and dental anxiety obtained while patients were receiving treatment were collected. Data were tabulated, and adjusted Poisson regression with robust variance was used to assess the prevalence ratio (PR) and its 95% confidence interval. **Results:** Most of the sample showed a positive perception of periodontal condition and satisfaction with oral health. Adjusted analysis showed that males (PR: 1.84; p=0.017) and non-white (PR: 2.24; p=0.001) individuals were significantly associated with higher history of self-reported periodontal disease. Likewise, marital status (PR: 1.27; p=0.044) and perceived stress (PR: 2.07; p=0.010) were significantly associated with the dentist's diagnosis of periodontal disease and history of periodontal disease, respectively. Patients undergoing other antineoplastic therapies had a 2.72-fold higher PR of self-perceived periodontal disease than those who received chemotherapy alone (p=0.025). **Conclusions:** Patients undergoing cancer treatment report positive self-perception of periodontal condition. However, levels of stress were associated with a self-reported history of periodontal disease.

Keywords: Antineoplastic agents, Anxiety, Oral health, Periodontal disease, Radiotherapy.

RESUMO

Introdução: Este estudo teve como objetivo avaliar a autopercepção da condição periodontal e sua associação com estresse percebido e ansiedade odontológica em pacientes em tratamento oncológico. **Métodos:** Foram entrevistados 60 pacientes em tratamento oncológico no Hospital Universitário, por meio de questionários contendo questões de múltipla escolha. As perguntas foram aplicadas a pacientes durante o tratamento oncológico. Os dados foram tabulados e a regressão de Poisson ajustada com variância robusta foi utilizada para avaliar a razão de prevalência (RP) e seu intervalo de confiança de 95% (IC95%). **Resultados:** A maioria da amostra apresentou percepção positiva da condição periodontal e satisfação com a saúde bucal.

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A análise ajustada mostrou que indivíduos do sexo masculino (RP: 1,84; IC 95%: 1,11 – 3,04) e não brancos (RP: 2,24; IC 95%: 1,46 – 3,45) foram significativamente associados a maior história de doença periodontal autopercebida. Da mesma forma, o estado civil (RP: 1,27; IC 95%: 1,01 – 1,61) e o estresse percebido (RP: 2,07; IC 95%: 1,33 – 3,23) foram significativamente associados ao diagnóstico de doença periodontal pelo dentista e ao histórico de doença periodontal, respectivamente. Pacientes submetidos a outras terapias antineoplásicas tiveram RP 2,72 vezes maior (IC 95%: 1,13 – 6,54) de doença periodontal autopercebida do que aqueles que receberam apenas quimioterapia. **Conclusões:** Pacientes em tratamento oncológico relatam autopercepção positiva da condição periodontal. No entanto, os níveis de estresse foram associados com o autorrelato positivo de doença periodontal.

Palavras-chave: Agente antineoplásico, Ansiedade, Saúde oral, Doença periodontal, Radioterapia.

INTRODUCTION

Cancer is a term that defines not just a single disease, but a set of different diseases that share disordered cell growth as a fundamental characteristic. Malignant neoplasms are characterized by abnormal cell growth and uncontrollable multiplication with the ability to infiltrate normal tissues that can spread rapidly locally and/or to distant sites[1–4]. The etiology of cancer is multifactorial and may be related to environmental, sociodemographic, cultural, or lifestyle conditions[5]. Its incidence continues to increase, in developing and developed countries, the literature reports that in 2020, only in Brazil, there was an estimate of 625,000 new cases of cancer[6].

Therefore, in addition to the growing number of cancer patients, many advances in therapeutic strategies have emerged, enabling an improvement in survival and recovery of the individual's general health[7]. Among these, surgical intervention, chemotherapy, and radiotherapy are the most used therapeutic modalities in cancer treatment[8]. Chemotherapy treatment could be presented as curative, adjuvant, palliative, and neoadjuvant with radiotherapy and/or surgery[9]. These treatments, associated or not with targeted therapies and immunotherapy, may bring undesired side effects to the patient's well-being and quality of life[10]. In some cases, due to the complexity and type of tumor, the cancer disease can trigger a threat to life, leading the patient to face pathological ramifications along with his treatment, as well as emotional disorders at different levels of depression, stress, and anxiety[11].

Side effects resulting from cancer treatment are quite common and in the oral cavity, the main manifestations are salivary glands dysfunction (xerostomia, hyposalivation, and change in taste); dysphagia; fungal, bacterial, and viral infections; neutropenic ulcers; mucositis; bleeding; oral health problems; exacerbation and/or worsening of the periodontal condition[1]. These complications also contribute to compromising the well-being and self-esteem of individuals, leading to psychological changes[13,14]"

Regarding periodontal diseases, biofilm-induced gingivitis and periodontitis are the most prevalent conditions, whose progression is dependent on the interaction between the host's immune system and bacterial virulence[15]. It is noteworthy that immunosuppressive conditions may lead to ulceration and thinning of the epithelial layer, causing progression of the inflammatory process with difficulty in repairing hard

tissues, painful symptoms, and development of local and systemic infections [16].

Considering the social and psychological commitment that cancer treatment provides to the individual, it is understandable that oral health receives less attention and care during this period. However, this can facilitate the progression of oral diseases, generating other complications of a general nature[17]. Furthermore, it is important to assess and establish a relationship between the psychological factors associated with cancer treatment in these patients, as well as the association with periodontal health. Therefore, this study aimed to evaluate the self-perception of periodontal conditions in patients undergoing cancer therapy at a university hospital. The association with oral health, perceived stress, and levels of dental anxiety were also investigated.

METHODS

This cross-sectional study was developed with patients undergoing cancer treatment at the Oncology Service from School Hospital at the Federal University of Pelotas (UFPel), in the city of Pelotas, Rio Grande do Sul, Brazil, of the January to March 2020.

The present study is a non-interventionist investigation (without clinical interventions) and without changes/influences in the research participant's routine/treatment, respecting the recommendations of Helsinki's Declaration[18]. A non-probabilistic sample was chosen to provide greater access to this population, which during the treatment period is vulnerable and difficult to access. The inclusion criteria were patients aged 18 years or older, diagnosed with any type of primary malignant neoplasm and who were undergoing cancer treatment. Patients were included regardless of sex, skin color, type of cancer, cancer stage, and the antineoplastic therapy performed. No exclusion criteria were applied. The guidelines proposed in the Strengthening the Reporting of Observational studies in Epidemiology checklist serve as a reference for reporting this study[19].

The original research project was evaluated and approved by the Research Ethics Committee of the School of Dentistry at UFPel (#00890/19). The study included 60 patients who (1) were undergoing integral cancer treatment at the school hospital at the time of the research; and (2) agreed to voluntarily participate in the study by signing the Informed Consent Form.

Data were collected through questionnaires from a face-to-face interview by a single trained examiner. Information included medical and sociodemographic data (age, sex, skin color, marital status, and level of education), self-perceived oral health and periodontal condition, levels of perceived stress, and dental anxiety.

To assess self-perceived oral health, the following questions based on Bidinotto et al., (2017)[20] were applied to the patients: (1) "*In general, how do you rate your oral health (teeth and gums)?*"; (2) "*How happy are you with the appearance of your teeth and/or dentures?*", denoting satisfaction with the esthetics of teeth and/or prostheses; and (3) "*How satisfied are you with chewing?*", denoting the perception of the quality of solid food crushing. The answers were structured using a five-point Likert scale[21].

For the self-perceived periodontal condition evaluation, the questionnaire by

Reiniger et al.[22] was applied, assessing signs and symptoms of periodontal condition perceived by the patients. Aspects related to gingival bleeding perception, tooth mobility, and the individual's previous dental experiences were addressed. The questionnaire is divided into three domains, in which the first domain considers the self-perception of the periodontal disease; the second domain refers to the history of periodontitis, and the third corresponds to the history of a periodontal disease diagnosed by the dentist.

The level of stress was assessed by the Perceived Stress Scale - PSS-14[23], using the version of the questionnaire validated for Portuguese language[24]. This scale consists of 14 questions, seven positive and seven negative, with answers ranging from 0 to 4. Questions with a positive connotation have their score calculated in an inverted way. The scale score is based on the total value that ranges from 0 to 56. As higher the score obtained, as greater the perceived stress. The highest score reached in the evaluated sample was 30 points, from that, the scores were divided into terciles, with the highest tercile (total scores >22.75) being considered with a high level of perceived stress and the others with a low level of perceived stress (total score ≤22.75), as previously reported in the literature[25].

To assess the level of dental anxiety, the Corah Dental Anxiety Scale (DAS) was applied[26] using the version of the questionnaire validated for Portuguese language[27]. This scale has four multiple-choice questions related to different moments in a dental appointment. Answers ranged from 1 to 5, and the final total score can range from 4 to 20. Dental anxiety is interpreted as directly proportional to this value. Scores up to 11 characterize low anxiety, from 12 to 14 moderate anxiety, and equal to or greater than 15 high anxiety[26].

All collected data were entered into Excel spreadsheets, grouped, and subjected to descriptive statistical analysis. This analysis was performed to determine the relative and absolute frequencies of variables related to the sample. Self-perception of periodontal conditions was considered the main outcome of the present study, and the three domains of self-perceived oral health and periodontal condition were analyzed independently. Outcomes and categorical independent variables were compared by the Chi-square or Fisher's exact test. Age presented a symmetric distribution according to the Shapiro-Wilk test. Therefore, a t-test for independent samples was used to compare groups.

In addition, bi- and multivariate models were constructed using Poisson regression with robust variance. For each domain of the questionnaire, independent analyses were performed. The initial multivariate model was composed by the independent variables that presented a p-value <0.20 in the bivariate analyses. The final multivariate models were formed by those independent variables with a p-value <0.05. The Wald test was used to assess statistical significance. Analyses of modification were also performed to determine the final model. Level of stress and dental anxiety were included in the final multivariate model regardless of their p-value. The prevalence ratio (PR) and its 95% confidence interval (95%CI) were determined. All analyses were performed by the SPSS (version 21.0 for Windows, SPSS Inc., Chicago, USA).

RESULTS

The sample consisted of 60 individuals, 30 were male, and 30 were female. The age from 45 to 60 years old had the highest prevalence among those interviewed (50%), and the average age of the sample was 56.13 years old. Most of the included patients considered themselves to be white (85%, n=51) reported a lower level of education level (51.67%, n=31), were married or lived with a partner (60%, n =36), and had more than 12 natural teeth (55%, n=33). Ninety percent (n=54) of the patients had a cancer diagnosis classified as a solid tumor, and chemotherapy combined with surgery showed to be the most used antineoplastic therapy (45%, n=27) (Table 1). Regarding the self-perception of periodontal condition, 53.33% (n=32) of the patients answered positively to the domain of self-perceived history of periodontitis. In addition, 80% (n=48) of patients reported having already been diagnosed with periodontal disease by the dentist. The evaluation of self-perception of periodontal disease was positive for 90% of the sample. Concerning the levels of dental anxiety and perceived stress, most of the patients were considered with having a low level of dental anxiety (83.33%, n=50), and only one patient was considered with extreme anxiety. Table 2 describes the distribution of independent variables classified according to self-perceived periodontal condition domains. The analysis showed significant differences for the variables skin color (p=0.027) and perceived stress (p=0.011) referring to the domain history of periodontal disease.

Table 1. Characterization of the sample (n=60).

Variables	Category	Frequency	%
Sex	Female	30	50
	Male	30	50
Age (range: 20-85 years)	<=39	9	15
	40-65	30	50
	>65	21	35
Skin Color	White	51	85
	Non-white	9	15
Level of education	Low	31	51.67
	Medium/High	29	48.34
Number of teeth (0 – 28 teeth)	Edentulous	12	20
	<=12	15	25
	>12	33	55
Cancer Therapy	Chemotherapy only	24	40
	Chemotherapy + surgery	27	45
	Other therapies	9	15
Cancer Diagnosis	Breast	20	33.33
	Lung	7	11.67
	Intestine	7	11.67
	Others	26	43.33

Marital status	Married	36	60
	Non-married	24	40
Dental Anxiety	Low	50	83.33
	Moderate/Extreme	10	16.67
How do you rate your oral health (teeth and gums)?	Very satisfied	2	3.33
	Satisfied	34	56.67
	Indifferent	4	6.67
	Dissatisfied	17	28.33
	Very unsatisfied	3	5
How happy are you with the appearance of your teeth and/or dentures?	Very satisfied	5	8.33
	Satisfied	26	43.33
	Indifferent	10	16.67
	Dissatisfied	17	28.33
	Very unsatisfied	2	3.33
How satisfied are you with chewing?	Very satisfied	12	20
	Satisfied	34	56.67
	Indifferent	1	1.67
	Dissatisfied	9	15
	Very unsatisfied	4	6.67
Stress	1º quartile	22	36.67
	2º quartile	35	58.33
	3º quartile	3	5
	4º quartile	0	0

Table 2. Distribution of independent variables classified according to self-perceived periodontal condition domains.

	Variables	Self-perception of periodontal disease		History of periodontal disease		Diagnosis of periodontal disease by the dentist	
		Negative (n=36; 60.0%)	**Positive (n=24; 40.0%)**	**Negative (n=29; 48.3%)**	**Positive (n=31; 51.7%)**	**Negative (n=12; 20.0%)**	**Positive (n=48; 80.0%)**
Sex	**Female – n (%)**	20 (55.6)	10 (41.7)	18 (62.1)	12 (38.7)	4 (33.3)	26 (54.2)
	Male – n (%)	16 (44.4)	14 (58.3)	11 (37.9)	19 (61.3)	8 (66.7)	22 (45.8)
	p-value	0.292*		0.071*		0.197*	
Age	**mean±SD**	57.17±15.22	54.58±15.21	52.55±17.59	59.48±11.75	62.17±16.50	54.63±14.58
	p-value	0.522α		0.081α		0.124α	
Skin color	**White – n (%)**	29 (80.6)	22 (91.7)	28 (96.6)	23 (74.2)	10 (83.3)	41 (85.4)
	Non-white – n (%)	7 (19.4)	2 (8.3)	1 (3.4)	8 (25.8)	2 (16.7)	7 (14.6)
	p-value	0.293#		**0.027**#		1.000#	

Level of education	**Low – n (%)**	20 (55.6)	11 (45.8)	13 (44.8)	18 (58.1)	7 (58.3)	24 (50.0)
	Medium/ High - n (%)	16 (44.4)	13 (54.2)	16 (55.2)	13 (41.9)	5 (41.7)	24 (50.0)
	p-value	0.460*		0.305*		0.605*	
Marital status	**Married – n (%)**	14 (38.9)	10 (41.7)	12 (41.4)	12 (38.7)	2 (16.7)	22 (45.8)
	Non-married – n (%)	22 (61.1)	14 (58.3)	17 (58.6)	19 (61.3)	10 (83.3)	26 (54.2)
	p-value	0.830*		0.833*		0.100#	
Cancer therapy	**Chemotherapy only - n (%)**	18 (50.0)	6 (25.0)	14 (48.3)	10 (32.3)	7 (58.3)	17 (35.4)
	Chemotherapy + surgery - n (%)	15 (41.7)	12 (50.0)	11 (37.9)	16 (51.6)	3 (25.0)	24 (50.0)
	Other therapies - n (%)	3 (8.3)	6 (25.0)	4 (13.8)	5 (16.1)	2 (16.7)	7 (14.6)
	p-value	0.077*		0.441*		0.270*	
Cancer Diagnosis	**Oncohematological - n (%)**	4 (11.1)	2 (8.3)	4 (13.8)	2 (6.5)	3 (25.0)	3 (6.3)
	Solid tumors - n (%)	32 (88.9)	22 (91.7)	25 (86.2)	29 (93.5)	9 (75.0)	45 (93.8)
	p-value	1.000#		0.417#		0.088#	
Dental anxiety	**Low - n (%)**	30 (83.3)	20 (83.3)	26 (89.7)	24 (77.4)	11 (91.7)	39 (81.3)
	Moderate/ Extreme - n (%)	6 (16.7)	4 (16.7)	3 (10.3)	7 (22.6)	1 (8.3)	9 (18.8)
	p-value	1.000*		0.302#		0.670#	
Stress (75th percentile)	**No (≤22.75)**	27 (75.0)	18 (75.0)	26 (89.7)	19 (61.3)	9 (75.0)	36 (75.0)
	Yes (>22.75)	9 (25.0)	6 (25.0)	3 (10.3)	12 (38.7)	3 (25.0)	12 (25.0)
	p-value	1.000*		**0.011***		1.000*	

Legend: *Chi-square test; # Fisher's exact test; α t test for independent samples; Ω Mann-Whitney test.

Bivariate analysis for the association between independent variables and different domains of self-perceived periodontal disease showed that other antineoplastic therapies have a 2.67-fold (95%CI: 1.16 – 6.13) higher PR of self-perceived periodontal disease than chemotherapy alone. Self-declared non-white individuals had a 1.97-fold (95%CI: 1.35 – 2.89) higher PR of having a history of periodontitis when compared to white individuals. The dental anxiety was not significantly associated with all three domains in the bivariate analysis (Table 3).

When the final multivariate model was considered, self-reported non-white and male individuals had 2.24 and 1.84 significantly higher PR of having a history of periodontal disease, respectively (95%CI: 1.46 – 3.45; 1.11 – 3.04). Unmarried individuals had a 1.27-fold (95%CI: 1.01 – 1.61) higher PR of having already been diagnosed with periodontal disease by the dentist. Patients who were treated with other therapies also had a PR 2.72 (95%CI: 1.13 – 6.54) higher of having self-perceived periodontal disease. Moreover, those with stress presented 2.07-times higher PR of having a history of periodontitis (95%CI: 1.33 – 3.23) than those without stress. Nonetheless, stress was not significantly associated with the other domains of periodontal conditions self-perception (Table 4).

Table 3. Bivariate analyses for association between independent variables and different domains of self-perceived periodontal condition.

Variables		Self-perception of periodontal disease PR (95%CI)	p-value	History of periodontal disease PR (95%CI)	p-value	Diagnosis of periodontal disease by the dentist PR (95%CI)	p-value
Sex	**Female**	1		1		1	
	Male	1.40 (0.74 – 2.64)	0.299	1.58 (0.95 – 2.65)	0.081	0.85 (0.65 – 1.10)	0.203
Age		0.99 (0.97 – 1.01)	0.499	1.02 (1.00 – 1.03)	**0.05**	0.99 (0.98 – 1.00)	0.161
Skin color	**White**	1		1		1	
	Non-white	0.52 (0.15 – 1.82)	0.303	1.97 (1.35 – 2.89)	**<0.001**	0.97 (0.67 – 1.41)	0.863
Level of education	**Low**	1		1		1	
	Medium/High	1.26 (0.68 – 2.36)	0.462	0.77 (0.47 – 1.28)	0.313	1.07 (0.83 – 1.38)	0.605
Marital status	**Married**	1		1		1	
	Non-married	1.07 (0.57 – 2.00)	0.829	0.95 (0.57 – 1.57)	0.834	1.27 (1.01 – 1.61)	**0.047**

Cancer therapy	**Chemotherapy only**	1		1		1	
	Chemotherapy + surgery	1.78 (0.79 – 4.00)	0.164	1.42 (0.81 – 2.51)	0.224	1.26 (0.94 – 1.68)	0.124
	Other therapies	2.67 (1.16 – 6.13)	**0.021**	1.33 (0.63 – 2.83)	0.453	1.10 (0.71 – 1.69)	0.672
Cancer Diagnosis	**Oncohematological**	1		1		1	
	Solid tumors	1.22 (0.38 – 3.96)	0.738	1.61 (0.51 – 5.13)	0.420	1.67 (0.74 – 3.74)	0.216
Dental anxiety	**Low Moderate/Extreme**	1		1		1	
		1.00 (0.44 – 2.30)	1.00	1.46 (0.89 – 2.40)	0.137	1.15 (0.90 – 1.49)	0.269
Stress (75th percentile)	**No (≤22.75)**	1		1		1	
	Yes (>22.75)	1.00 (0.49 – 2.05)	1.00	1.90 (1.24 – 2.90)	**0.03**	1.00 (0.75 – 1.34)	1.00

Legend: PR: Prevalence ratio; 95%CI: 95% confidence interval.

Table 4. Multivariate analyses for association between independent variables and different domains of self-perceived periodontal condition.

Variables		Self-perception of periodontal disease PR (95%CI)	p-value	History of periodontal disease PR (95%CI)	p-value	Diagnosis of periodontal disease by the dentist PR (95%CI)	p-value
Sex	**Female**	-		1		-	
	Male			**1.84 (1.11 – 3.04)**	**0.017**		
Skin color	**White**	-		1		-	
	Non-white			**2.24 (1.46 – 3.45)**	**0.001**		
Marital status	**Married**	-		-		1	
	Non-married					**1.27 (1.01 – 1.61)**	**0.044**

Cancer Therapy	**Chemotherapy only**	1		-		-	
	Chemotherapy + surgery	1.77 (0.79 – 3.96)	0.163				
	Other therapies	**2.72 (1.13 – 6.54)**	**0.025**				
Dental anxiety	**Low Moderate/Extreme**	1		1		1	
		1.11 (0.50 – 2.44)	0.801	1.66 (0.94 – 2.96)	0.084	1.02 (0.76 – 1.37)	0.883
Stress (75th percentile)	**No (≤22.75)**	1		1		1	
	Yes (>22.75)	1.04 (0.50 – 2.18)	0.916	**2.07 (1.33 – 3.23)**	**0.010**	1.15 (0.88 – 1.49)	0.306

Legend: PR: Prevalence ratio; 95%CI: 95% confidence interval.

DISCUSSION

The present study evaluated the self-perceived periodontal condition and oral health, as well as perceived stress and dental anxiety of patients undergoing cancer treatment. The results demonstrated that most of the patients answered positively to the perception of periodontal condition, had already been diagnosed with periodontal disease by the dentist, manifested to be satisfied with oral health, and had low levels of dental anxiety and stress. This study is a pioneer in evaluating important outcomes related to the oral health of cancer patients, which are relevant for the follow-up and treatment evolution of these patients.

The results also demonstrated a significant association between the history of periodontal disease, male sex and non-white skin color. These findings corroborate evidence that reports the highest risk of developing any type of periodontitis in men belonging to racial/ethnic minorities[28]. Men tend to ignore their oral health, with poorer oral hygiene habits and higher rates of periodontal disease, oral cancer, and even dental trauma[29]. Furthermore, literature reports a substantial influence of education on self-reported oral health[30]. Although this variable was not included in the final adjusted models, it is not possible to rule out the effect of education on the outcomes, as 51.67% of the sampled population reported having a 'lower level of education'.

The association with marital status is also noteworthy, as single individuals had a 1.27-fold (95%CI: 1.01 - 1.61) higher PR of having already been diagnosed with periodontal disease. This result can be associated with previous studies that suggest that living together may be relevant to a low rate of occurrence of periodontitis[31]. In addition, it is also reported that people who live alone may have a higher prevalence of depressive symptoms, which lead to less personal care and, consequently, less oral health care[31].

It is important to emphasize that patients undergoing radiotherapy tend to have more side effects in the oral cavity, such as mucositis, xerostomia, progressive loss of periodontal attachment, soft tissue necrosis, and osteoradionecrosis of the jaw[32].In the present study, patients who received chemotherapy alone or in association with other therapies reported better self-perception of their periodontal condition. Greater attention from professionals to patients undergoing radiotherapy could explain this result since professionals end up dealing more frequently with the serious repercussions that occur in the oral cavity resulting from the treatment.

The low levels of dental anxiety (about 83% of the sample) may be related with the context of the patients, which came from a university hospital with a multidisciplinary care service for cancer patients. This service covers the dental evaluation from the patient's admission to the hospital. For this reason, it is possible that patients have shown greater adaptation or acceptance to the dental appointment received and the procedures performed, reporting low levels of anxiety.

However, when self-perceived stress was assessed, patients demonstrated a higher level of perceived stress, which was significantly associated with a history of periodontal disease. Stress systems reflect the entire human organism and can stimulate inflammatory mechanisms[34]. The presence of a potential modulating pattern of cortisol levels in the clinical parameters of periodontitis is also reported[35]. It is important consider that most of patients undergoing anticancer treatment suffer episodes of uncontrollable pain and it can be comprehensive the high--stress levels in these individuals.

In the period of immunosuppression, the oral cavity can be considered one of the main sources of infection[36]. In this sense, it is important to provide patients and their families with knowledge about the relevant role of the dentist before, during, and after cancer treatment. So, the multidisciplinary is decisive for obtaining satisfactory therapeutic results, aiming to minimize undesirable effects during the treatment period. In the present study, more than half of the sample (53.33%) did not receive dental care before cancer treatment. These data reinforce the important role of dentist inside the hospitals, in which the professional can support the patient to avoid oral and dental complications[37], in addition to other systemic manifestations.

It should be reported that the use of questionnaires as research instruments can be a limitation of the present study. However, this methodology made it possible to collect data with less risk and more safety for professionals and patients considering the development of the study during the COVID-19 pandemic. From the data collected, it was possible to observe relevant results on the topic under discussion, which will provide the basis for future clinical research protocols.

CONCLUSION

Within the limits of this study, it can be concluded that patients undergoing cancer treatment reported positive self-perception of their periodontal condition, stress levels associated with a history of periodontal disease, and low dental anxiety. These results reinforce the importance of the dentist in the multidisciplinary team, and encourage patients to have a prior dental evaluation, monitoring their oral health throughout the oncology treatment period.

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