Original Article

Is there an association between head and neck cancer diagnosis and self-reported dental fear? A dual-center cross-sectional study

ABSTRACT

Introduction: Mental distress is highly reported in cancer patients, resulting in anxiety and depression most of the time. Both conditions, in turn, are recognized to be related to dental fear in adults; however, there are no studies on patients suffering from head and neck cancer. Thus, the present study aimed to investigate whether newly diagnosed patients with head and neck cancer are more prone to self-reported dental fear.

Material and Methods: This dual-center cross-sectional study was conducted with 25 healthy outpatients and 25 patients with a recent diagnosis of head and neck cancer, all requiring dental care. The patients were informed at the first appointment about their dental therapy planning and the Brazilian Portuguese Version of the Dental Fear Survey (DFS) questionnaire was then applied after appropriate instructions.

Results: The DFS total scores did not differ statistically between the groups (Mann–Whitney U test, $P = 0{,}120$) but the Cancer Group presented a slightly higher mean score (32.2 ± 10.0) than the Control Group (30.0 ± 14.2).

Conclusion: Within the limitations of this study, newly diagnosed patients with head and neck cancer and healthy individuals seem to experience similar self-reported dental fear.

Keywords: Dental care, dental fear, head and neck neoplasms, mental disorders

INTRODUCTION

Head and neck cancer, the ninth most common malignant neoplasm, comprises mainly upper aerodigestive tract tumors. Although cancer treatment has made great progress over the last decades and patient survival has increased significantly, the impact of the disease and treatment on the daily routine of the patients remains to be a great concern.[1] Furthermore, even the process of cancer diagnosis (i.e., clinical identification of a lesion, biopsy procedure, laboratory tests, and communication of the final diagnosis to patients and family members) may also affect the individuals' perceptions, expectations, feelings, and emotional state.[2]

Mental distress is highly reported in cancer patients, resulting in anxiety and depression most time. The site of primary cancer, stage of the disease, age, and gender are thought to present an association with these mental disorders, which impacts directly on the quality of life and also have major implications on patient suffering, mortality, and healthcare expenditure.[3] Likewise, depression and anxiety

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are recognized to be related to dental fear in non-cancer adults[4]; however, there is no data on the matter in patients suffering from cancer.

Fear of dental treatment has a multifactorial etiology[5] and is largely documented worldwide. Individuals experiencing it either avoid dental procedures or seek them only for emergency purposes,[6] which delays or prevents access to proper dental care.[7] Fearful patients, therefore, show deteriorated oral health,[8] creating a kind of vicious circle of dental fear.[9]

Since head and neck cancer patients should be carefully evaluated by the dental team before antineoplastic treatment in order to reduce the risk of complications such as osteoradionecrosis and caries lesions,[10] the present study aims to investigate whether newly diagnosed patients with head and neck cancer are more prone to self-reported dental fear.

MATERIAL AND METHODS

Study design, patients, and groups

This cross-sectional study was conducted at the Stomatology and Oral and Maxillofacial Surgery Center of the Hospital with a convenience sample of 50 users of Brazilian public healthcare services.

Patients were grouped according to their medical condition: (1) Control Group - 25 healthy outpatients requiring dental care; (2) Cancer Group - 25 patients with a recent diagnosis of head and neck cancer and requiring dental care previously to the antineoplastic treatment. All patients were aged 18 years or older and were able to read and understand the Brazilian Portuguese language. Exclusion criteria consisted of previous oncologic treatments, psychiatric or psychological disorders, and the use of any psychiatric medication. The patients received information regarding the study before being submitted to any procedure, and those who agreed to participate read and signed the informed consent form.

Procedures

The patients were informed at the first appointment about their dental therapy planning and the Brazilian Portuguese Version of the Dental Fear Survey (DFS) questionnaire was then applied after appropriate instructions. It is a self-administered questionnaire, cross-culturally adapted and validated for Brazilian Portuguese, and composed of 20 items with their respective responses ranging from 1 to 5, i.e., DFS total scores vary from 20 to 100, with higher scores indicating high dental fear.[11]

Clinical and demographic data from the patients (e.g., age, sex, education level, time since last dental appointment) were also gathered.

Statistical analysis and ethical issues

Data were analyzed both descriptively and inferentially in the BioEstat 5.0™ software (Instituto Mamirauá, BRA). Descriptive statistical analysis was used to summarize and present the data. The Chi-square test with continuity correction was applied to check associations between qualitative variables and the Mann–Whitney U test for quantitative variables, considering a $P < 0.05$ as statistically significant.

Ethical Clearance was obtained from the Institutional Ethical Committees with Ref no 79684017.4.0000.5449 (dated 12.01.2018).

RESULTS

Considering the whole sample, 12 patients were women (24%) and 38 men (76%). In the Control Group, 11 patients were women (44%) and 14 men (56%); in contrast, in the Cancer Group, 1 was a woman (4%) and 24 were men (96%). The mean age in the Control Group was 55.7 years (±14.8) and in the Cancer Group was 57.7 years (±11.1), data without a statistical difference (Mann–Whitney U test, $P = 0.76$) [Table 1].

Most patients had secondary education ($n = 10$, 40%) in the Control Group and, in contrast, most had primary education ($n = 12$, 48%) in the Cancer Group, data with a statistical difference between them (Chi-square test, $P = 0.01$) [Table 1]. On the other hand, there was no statistical difference between the groups regarding the average time since the last dental appointment (Control Group: 2.9 ± 3.5 years; Cancer group: 6.2 ± 10 years; Mann–Whitney U test, $P = 0{,}777$) [Table 1].

The DFS total scores did also not differ statistically between the groups (Mann–Whitney U test, $P = 0{,}120$); however, the Cancer Group presented a higher mean score (32.2 ± 10.0) than the Control Group (30.0 ± 14.2) [Table 2 and Figure 1].

DISCUSSION

This cross-sectional study compared self-reported dental fear in healthy individuals and newly diagnosed patients with head and neck cancer, all of them requiring dental care in two public dental centers. To the best of the authors' knowledge, it is the first paper addressing this matter; however, the DFS questionnaire (and its respective translations and

Table 1: Clinical and demographic data from the patients

Variables		Groups		Total	*P*
		Control	Cancer		
Age (years)	Average	55.7	57.7	56.7	0.76
	Median	59.0	54.0	55.0	
	Minimum	23.0	43.0	23.0	
	Maximum	80.0	88.0	88.0	
	Standard-deviation	14.8	11.1	13.0	
Education level (n, %)	Incomplete elementary education	3 (12%)	5 (20%)	8 (16%)	0.01*
	Elementary education	5 (20%)	12 (48%)	17 (34%)	
	Secondary education	10 (40%)	8 (32%)	18 (36%)	
	Higher education	7 (28%)	0 (0%)	7 (14%)	
Time since the last dental appointment (years)	Average	2.9	6.2	4.5	0.777
	Median	2.0	1.0	2.0	
	Minimum	0.5	0.5	0.5	
	Maximum	15.0	37.0	37.0	
	Standard-deviation	3.5	10.0	7.6	

*Statistical Significance ($P<0.05$)

Table 2: Scores from the dental fear survey questionnaire

Dental Fear Survey		Groups		Total	*P*
		Control	Cancer		
Score	Average	30.0	32.2	31.1	0.120
	Median	24.0	30.0	27.5	
	Minimum	20.0	20.0	20.0	
	Maximum	79.0	60.0	79.0	
	Standard-deviation	14.2	10.0	12.2	

adaptations, including the Brazilian Portuguese version) is largely used in the literature as a validated, reliable tool to assess dental fear.[7,11]

Dental fear is thought to be aggravated by general anxiety, multiple phobias, and other emotional/mood disorders; however, it is not clear whether the consequences of dental fear (especially widespread negative social life effects) are indeed results of personality factors, which in turn, cause dental fear.[12] In contrast, others believe that dental fear contains two components: exogenous (acquired by direct or vicarious experiences) and endogenous (as parts of mental disorders from multiple phobias and other psychiatric diagnoses).[4]

The main hypothesis of the present study was that head and neck cancer (a shocking "bad news") would increase dental fear and delay dental care pre-anti-neoplastic treatment, as this diagnosis generates marked psychological repercussions for the patients and their family members[2] and may then lead to emotional distress (e.g., helplessness, anxiety, and depression).[13] There is no doubt that head and neck cancer patients must seek and receive dental care as soon as possible after the diagnosis, avoiding any potential delay in initiating cancer therapy and, then, increasing the survival rates.[14]

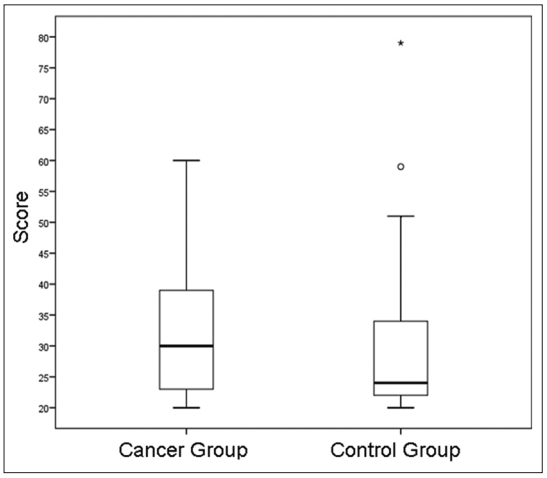

Figure 1: Total scores obtained from the Brazilian Portuguese Version of the Dental Fear Survey (DFS) questionnaire. Mild statistical outliers are marked with a sphere (°) and extreme outliers with an asterisk (*)

Herein, to the authors' surprise, both groups presented similar DFS scores. At least two possible explanations can be raised to explain the observation: (1) the psychological repercussions of oncologic diagnosis for head and neck cancer patients without mental disorders are not related to higher levels of dental fear, or (2) the convenience sample used could not provide sufficient power to detect a significant difference between the groups. The latter explanation, however, does not corroborate a previous study with four hundred users of the Brazilian Healthcare System in which most of them did not present dental anxiety and fear.[15] Anyway, the current results support future studies with a more comprehensive sample to elucidate this question.

CONCLUSION

Within the limitations of this dual-center cross-sectional

study, newly diagnosed patients with head and neck cancer and healthy individuals seem to experience similar self-reported dental fear.

Ethics

This study was previously approved by the local Research Ethics Committees (CAEE #79684017.4.0000.5449).

Authors' contributions

The authors contributed equally to this work.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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