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Research Article

Reliability of Online Information on Self-Examination and Oral Cancer

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ABSTRACT

Introduction: Periodic dental consultations and oral self-examination can increase the chances of an early diagnosis of oral cancer. However, the restricted population access to health services in Brazil added to the greater scope of the internet has increased the use of this resource as a source of information on signs, symptoms and treatments of several diseases, including oral cancer.

Objective: To assess the reliability of the information on self-examination and oral cancer available on the web in Portuguese for Brazilian population.

Methodology: In December 2018, independent searches were performed for the terms "mouth cancer", "oral cancer", "oral self-examination/ self-examination" and "buccal self-examination / self-examination", on Google Search (Portuguese terms). The first fifty pages were selected for each term, and those that included prevention, diagnosis of oral cancer or described verbally and visually the oral self-examination were included in the study. The quality of the information was assessed according to the criteria of the American Medical Association and Health on the Net. Of the 108 sites evaluated, 87% did not inform the author's training, 24.1% did not inform the complementary nature of the information and 64.8% provided guidance consult a doctor or dentist. Scientific references were not present in 39.8% of the sites and the "accurate and complete" content was observed in only 35.2% of the evaluated pages.

Conclusion: The low quality of the information available on the evaluated pages, suggests low reliability of the content about oral cancer and oral self-examination available on the web, indicating that access to this content may bring risk to the health of the Brazilian population.

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Introduction

Oral cancer consists of a malignant neoplasm that can affect several oral areas, such as tongue, lips, oral floor, hard and soft palate, gums, cheek mucosa and oropharyngeal region. According to the estimate made by INCA- National Cancer Institute for the 2020-2022 biennium, this neoplasm will be the fifth most frequent among men and the thirteenth among Brazilian women [1]. Tobacco and alcohol are the main factors

of identifiable risks [2]. Other risk factors may include exposure to Ultraviolet rays, diet, immunosuppression, exposure to oncogenic viruses (human papillomavirus), demographic variables (ethnicity, age and gender), among others are described [3, 4]. This type of tumor has an aggressive behavior, with early cervical metastasis, it is very important the rapid performance of health professionals in the diagnosis, referral and beginning of the intervention [5]. However, due to the diagnosis and the late search for care, the vast majority of cases of oral cancer are treated at more advanced stages, which considerably worsens

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the prognosis and treatment of the disease and increases the rates of mortality and morbidity [3, 6].

Early diagnosis is directly associated with periodic dental consultations, which can be facilitated if there is constant attention from the patient himself to the occurrence of abnormalities in the oral region. Self-examination is a procedure performed by the individuals themselves and consists of a simple technique to check the entire region of the lateral edges of the tongue, the palate and the oro-pharyngeal part, the oral floor, lip, gums and jugal mucosa. In the presence of unusual signs, the individual may monitor the improvement or not of the observed condition, aware that if there is no regression within a period of up to fifteen days, a dentist must be consulted immediately. Lay individuals may have difficulty in differentiating oral lesions and normal anatomical areas, which reinforces the importance of health education programs in promoting health and preventing oral cancer [7, 8]. In this sense, public policies have been implemented in Brazil, through the Unified Health System, with actions based on the prevention of oral cancer, treatment and rehabilitation of the individual diagnosed and present in the three levels of health care [6].

According to the National Health Survey, only 71.2% of Brazilians saw a doctor in the 12 months prior to the survey, and an even smaller number (44.4%) had access to dental consultations in the same period [9]. In view of this difficulty in accessing health services, the use of the Internet by patients as an information source to answer questions about the most varied subjects has been expanded, among which are: the symptoms and treatment of oral cancer, dental pain and caries. In Brazil, it is estimated that more than 10 million users regularly access health websites [10].

Although greater access to health-related information can bring benefits by facilitating the dissemination of knowledge, significant damage is also possible, to the extent that mistaken diagnoses, incorrect treatments or a postponement of the search for a professional evaluation result from the user's interaction with the information made available [11]. Considering the importance of the internet as a means of accessing relevant health information and the need for society to have truthful and reliable information at its disposal for health protection, this study aims to quantitatively and qualitatively evaluate information on oral cancer prevention and on the technique of self-examination of the oral cavity contained in pages open to the general public made available on the internet through the Google Search platform in Portuguese for this population.

Methodology

This is an exploratory, descriptive, cross-sectional research that used secondary data collected on Google Search to investigate information about oral cancer and the technique of self-examination of the oral cavity made available on the internet. In December 2018, independent searches were performed on Google Search using the terms: "mouth cancer" (câncer de boca), "oral cancer" (câncer oral), "oral self-examination/self-examination" (autoexame oral / auto-exame oral) and "buccal self-examination / self-examination" (autoexame bucal / auto-exame bucal). The searches were carried out in the "Advanced search" mode, option "pages in Portuguese" and country "Brazil". The first fifty pages listed in order of relevance (300 sites) were selected and duplicates and / or

triplicates were excluded (17%, n = 97 sites). The data collected from the remaining 203 sites were tabulated in a Microsoft Excel spreadsheet.

The following inclusion criteria were adopted: address information related to the prevention and diagnosis of oral cancer and / or describe graphically and verbally the performance of oral self-examination. When the exclusion criteria were applied, 95 sites (31.7%) were removed, as they are: Scientific text (15.7%, n = 47); another thematic (25.33%, n = 37); booklets from the National Cancer Institute or the Federal Council of Dentistry (2%, n = 6); sites containing only videos and images (1%, n = 3); technical content (0.33%, n = 1) and pages with errors when opening (0.33%, n = 1). Thus, the final sample consisted of 108 pages (36%), of which 19 (6.33%) were obtained from the keyword "Oral self-examination" (autoexame oral); 30 (10%) of the term "Mouth cancer" (câncer de boca); 14 (4.7%) of the term "Oral cancer" (câncer oral); 26 (8.7%) of the term "Buccal self-examination" (autoexame bucal); 11 (3.7%) of the term "Buccal self-examination" (auto-exame bucal); 8 (2.7%) of the term "Oral self-examination" (auto-exame oral).

The selected sites were then evaluated for the quality of the information made available based on the presence or absence of the criteria pointed out by the American Medical Association and Health on the Net: [11]

- i. Authority: presence or absence of the qualification of the author of the information provided;
- ii. Presence / absence or partiality of alert about the complementarity of the information, not substituting medical advice;
- iii. Presence / absence or partiality of scientific evidence of the information;
- iv. Accuracy and completeness of the content;
- v. Presence or absence of authorship of the published content;
- vi. Presence or absence of the initial publication and update dates.

As a gold standard in content analysis, information made available by INCA was used on its official website link and in the booklet "Talking about cancer from the mouth" [12]. The content of the pages was then categorized as: accurate and complete, inaccurate and incomplete, precise and incomplete or inaccurate and complete; The data were included in the spreadsheet and the results described in their absolute and relative frequencies.

Results

The analysis of the 108 mapped electronic sites revealed the absence of information about the authorship of the information published in 64.8% (n = 70) of the evaluated pages, and an even greater number, 87% (n = 94), in which the qualification and / or the author's expertise, that is, his authority to address oral cancer, was not mentioned (Table 1). Associated with this, scientific evidence was also not presented in 39.8% (n = 43) of the sites, in which there were no citations or references from the sources used to write the available content. The material published on the pages was evaluated qualitatively and quantitatively, based on the content criterion, as to its precision and completeness. As a result, only 35.2% (n = 38) of the sites had content said to be "accurate and complete", while "inaccurate and incomplete" information was observed in 10.2% (n = 11) of the sample evaluated. A distribution of the analyzed

electronic pages according to their content classification and other criteria, can be seen in (Table 1).

Table 1: Distribution of the sites analyzed according to descriptors used in the searches and the quality criteria of the American Medical Association and Health on the Internet.

	Oral self-examination (N=19)		Oral self-examination (N=8)		Buccal self-examination (M= 26)		Buccal self-examination (N=11)		Mouth cancer (N=30)		Oral cancer (N=14)	
	n	%	N	%	N	%	n	%	N	%	n	%
AUTHORITY:												
Absent	13	68.4	8	100	24	92.3	10	90.9	26	86.7	13	92.9
Presence	6	31.6	-	-	2	7.7	1	9.10	4	13.3	1	7.1
COMPLEMENTARITY												
Yes	5	26.3	1	12.5	-	-	-	-	4	13.3	2	14.3
No	2	10.5	3	37.5	1	3.8	3	27.3	11	36.7	6	42.9
Partial	12	63.1	4	50.0	25	96.2	8	72.7	15	50.0	6	42.8
SCIENTIFIC EVIDENCE												
Yes	4	21.1	6	75.0	11	42.3	6	54.5	13	43.3	5	35.5
No	9	47.4	2	25.0	12	46.1	4	36.4	-	-	5	35.5
Partial	6	31.6	-	-	3	11.5	1	9.1	6	20.0	4	28.6
CONTENT												
Accurate and complete	8	42.1	3	37.5	8	30.8	5	45.5	13	43.4	1	7.1
PARTIAL: Precise and incomplete	9	47.4	5	62.5	18	69.2	6	54.5	12	40.0	6	42.9
PARTIAL: Inaccurate and complete	1	5.3	-	-	-	-	-	-	1	3.3	1	7.1
Inaccurate and incomplete	1	5.3	-	-	-	-	-	-	4	13.3	6	42.9
AUTHORSHIP:												
Absent	11	57.9	4	50.0	19	73.1	7	63.4	22	73.3	7	50.0
Presence	8	42.1	4	50.0	7	26.9	4	36.4	8	26.7	7	50.0
DATE PUBLISHED / UPDATED												
Absent	6	31.6	1	12.5	10	38.5	6	54.5	11	36.7	1	7.1
Presence	13	68.4	7	87.5	16	61.5	5	45.5	19	63.3	13	92.9

Terms used in Portuguese, respectively:autoexame oral, auto-exame oral, autoexame bucal, auto-exame bucal, câncer de boca, câncer oral.

Although presenting a low percentage of accuracy and completeness, 24.1% (n = 26) of the sites included in the survey, did not alert readers that the information provided is of a complementary nature and does not, therefore, replace medical / dental advice. The complementarity of most of the analyzed sites, 64.8% (n = 70), was considered partial for minimally informing the importance of consulting a professional if there was no remission of injuries or abnormalities perceived in the period of two weeks. The publication and update dates of the pages were also checked. 67.6% (n = 73) of the sites included in the survey contained these explicit dates, among these, less than half dated 2018.

Discussion

The analysis of the sites included in the studies revealed a lack of important information to make the sites more reliable. Since the vast majority of pages presented themselves with insufficient information on

authorship and authority, in addition to the low accuracy and completeness of the published content. With the increase in internet access, patients themselves are looking for health information directly on the web [13]. This behavior can help the individual and shared decision-making model. Meantime, there are concerns regarding the quality of the information provided and how accurate and reliable the information available is.

The presence of scientific evidence is considered a paramount requirement in assessing the quality of content. In the results of the present study, scientific evidence was referenced only in 41.7% of the surveyed sites. Thus, the low percentage shown in a previous study is confirmed, aimed at evaluating the content of allergic rhinitis on Brazilian websites on the world wide web, in which only 15.6% of the evaluated sites presented a scientific basis for the information disclosed [14]. This absence of references makes it even more difficult to ascertain

the published information, as well as deepening the content disclosed. Although, in 18.5% (n = 20) of the sites that presented the sources, they only cited speeches by specialists in the field with no formal source references.

Disclosure of authorship was observed in 35.2% of the evaluated sites, quantitative considered low despite being higher than the 27% identified in a study carried out on the publications on breast self-examination available on the internet [11]. Regarding the author's technical training, whether he was a dentist or not, the present study showed that only 13% of the sites exposed this information. Data and information published on health pages should be based on scientific evidence even if intended for the lay public. For the reader to analyze the veracity of the information, it is of paramount importance. First of all the indication on the websites of the author's name and his / her background, enabling the evaluation, by the user, the capacity and expertise of the person in charge to write about the subject [15].

Despite the increased access to information provided by online surveys, conducting these searches on oral cancer and oral self-examination has the ability to expose individuals to incomplete and incorrect information that can consequently result in damage to health and self-diagnosis. The findings of this study showed that only 35.2% of the sites were considered complete and accurate, referring to the discussion that several pages available on the computer network can be considered inappropriate or minimally suspicious.

In most of the analyzed sites, the date of publication as well as updating the text was explicit (67.6%), opposing the study on the influence of the internet for surgical decision-making in family adenomatous polyposis, in which the content update date was identified in only 40% of the sample [16]. The specific information, as well as its update make the content present on the pages more reliable since this makes it possible for the user to assess the timeliness of the published material [15]. Oral self-examination may indicate the need to seek professional assistance through self-perception. Meantime, it is important to note that self-examination is not recommended for isolated use [17].

In this context, the findings of the present study revealed that most of the pages stated that the information on self-examination is complementary and does not replace medical/ dental advice. Although they did not contain this information in exactly the manner mentioned above, but they emphasized the importance of looking for a professional to find out, thus being in accordance with the analysis made on information aimed at breast self-examination available on the internet [11].

The results of this study cannot be considered representative of all searches performed on the web, considering that only one search platform was used, Google Search. However, the findings can be considered significant because this is the main means of search used worldwide. Besides, that different forms of spelling of the search terms were included, aiming at a broader collection and reduction of coverage bias. Searches for terms on search engines usually list related pages in order of relevance, characteristic that was maintained in this research to select the first fifty results for each term used.

Considering that the same pages are accessed by a lay user in search of information about oral cancer and self-examination, it seems correct to consider that this individual is at great risk of making mistakes in diagnosis and delaying the start of possibly necessary treatment.

Conclusion

The internet has become a rich source of information that it could well-managed case, become an important and comprehensive tool in health education for the population. Yet, the results of the present study showed the low reliability of the information published in Portuguese on the network about oral cancer and self-examination, due to quality criteria considered insufficient and unsatisfactory. We have to consider the lack of inspection and control over the health content available and the future perspective of a greater presence of the internet in the daily lives of individuals. It seems reasonable to state that conducting online searches for information about oral cancer can pose a great risk to the health of the Brazilian population.

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