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ORAL CANCER IN PRIMARY HEALTH CARE: AN INTEGRATED APPROACH TO EARLY DIAGNOSIS

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ABSTRACT

Oral cancer represents a serious public health problem, with high rates of morbidity and mortality, especially in developing countries. Although its early detection is decisive for prognosis, diagnosis still occurs in advanced stages in most cases. Primary Health Care (PHC), due to its capillarity and preventive nature, is the ideal scenario for the early identification of potentially malignant lesions and oral cancer. This article proposes an integrated approach among PHC professionals, emphasizing the importance of systematic clinical examination, health education, and continuing education. The methodology involved a narrative review of the literature in international and national databases, addressing early detection strategies, barriers faced in clinical practice, and current public policies. The results highlight the need for standardized protocols, specific training, and educational campaigns

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as pillars for the effectiveness of early diagnosis. The discussion emphasizes that strengthening PHC is essential to change the current epidemiological scenario of oral cancer in Brazil and in the world.

Keywords: Oral Neoplasms; Primary Health Care; Early Diagnosis; Health Promotion.

1 INTRODUCTION

Oral cancer is a serious public health problem on a global scale, occupying prominent positions in morbidity and mortality statistics related to malignant neoplasms, especially in low- and middle-income regions (Bray et al., 2018; Warnakulasuriya, 2020). It is estimated that, annually, more than 350 thousand new cases are diagnosed, of which a considerable portion results in preventable deaths through early diagnosis and appropriate treatment (Sung et al., 2021). In Brazil, according to data from the National Cancer Institute (INCA), mouth cancer is among the ten most incident neoplasms in men and women, highlighting the need for more effective strategies for its prevention and early detection (INCA, 2023).

The clinical evolution of oral cancer, which often begins as discrete and asymptomatic lesions, contributes to the late diagnosis, when the therapeutic chances are reduced and the functional and aesthetic sequelae are expanded (Santos-Silva et al., 2019; Rivera, 2015). Several risk factors are known to be associated with its etiology, especially tobacco and alcohol consumption, HPV infection, and unprotected sun exposure (Scully, 2014; Petersen, 2009). However, the low level of information of the population and the limited perception of risk in relation to these lesions are additional barriers that hinder early recognition of the disease (Amaral et al., 2020; Saka-Herran et al., 2022).

Primary Health Care (PHC), within the Unified Health System (SUS), is a fundamental axis in the organization of actions for the promotion, prevention, diagnosis, and referral for treatment of oral cancer (Brasil, 2017; Mendes, 2012). Its capillarity and proximity to communities strategically position it to act in the identification of precursor lesions and in the first clinical signs of cancer (Torres-Pereira et al., 2018). However, evidence indicates that, although there is an increase in the coverage of the Family Health Strategy (FHS), significant gaps persist in the training and training of oral health professionals regarding the differential diagnosis of oral lesions (Antunes et al., 2021; Pires et al., 2020).

Among the challenges faced by PHC are the difficulty in performing a complete intraoral physical examination, low adherence to oral cancer awareness campaigns, and barriers to access specialized services for diagnostic confirmation (Ribeiro et al., 2019; Torres-Pereira et al., 2018). In addition, the absence of well-established protocols for the management of suspicious lesions in the context of primary care contributes to the loss of diagnostic opportunities in early stages (Leite et al., 2018).

Despite these limitations, successful experiences of professional training and integration between the levels of care demonstrate that it is possible to qualify PHC for a more effective performance in the fight against oral cancer (Santos et al., 2021; Oliveira et al., 2022). Continuous educational programs, community-oriented health education actions,

and the implementation of agile referral flows are strategies considered essential to expand the problem-solving capacity of primary care and improve the prognosis of patients (Torres-Pereira et al., 2018; Warnakulasuriya, 2020).

In this context, the present study aims to analyze the role of Primary Health Care in the early detection of oral cancer, addressing the main obstacles faced by professionals and pointing out possible ways to overcome these difficulties. The importance of this reflection lies in the urgent need to strengthen the capacities of PHC as an instrument for promoting oral health and combating health inequities, particularly with regard to the most vulnerable populations.

2 METHODOLOGY

The present study is characterized as a narrative literature review, with the objective of analyzing the evidence available in the scientific literature about the role of Primary Health Care (PHC) in the early detection of oral cancer. The choice of this approach is justified by the possibility of critically synthesizing dispersed information, promoting a broader understanding of the topic in question (Grant & Booth, 2009).

The search for studies was carried out in the PubMed, Scielo, and Lilacs databases, from February to March 2025. The following terms "primary health care", "oral cancer", "early diagnosis", "prevention" and "health promotion" were used as controlled descriptors, combined with each other using the Boolean operators "AND" and "OR". The selection of descriptors followed the standardized terminologies of DeCS (Health Sciences Descriptors) and MeSH (Medical Subject Headings), ensuring greater precision and comprehensiveness in the identification of relevant studies.

Articles published between 2008 and 2025, written in Portuguese, English, or Spanish, that addressed the role of primary care in the prevention, early diagnosis, and detection of oral cancer cases were included. Review articles, observational studies, qualitative and quantitative research, as well as official documents from recognized government and public health organizations were considered admissible. Studies dealing with other neoplasms unrelated to the oral cavity, congress abstracts, book chapters, dissertations, theses, and materials without access to the full text were excluded.

The selection process began with the reading of titles and abstracts to identify the works that met the established criteria. Subsequently, the full texts of potentially eligible articles were analyzed to confirm thematic relevance. The information extracted was organized into analytical tables, considering author, year of publication, type of study, objectives, methodology used, main findings and conclusions.

The data analysis was conducted in a critical and interpretative manner, seeking to identify trends, gaps and relevant contributions in the scope of primary health care and early detection of oral cancer. Methodological rigor was preserved during all stages of the study, ensuring the validity and reliability of the information discussed.

3 RESULTS

The analysis of the selected articles revealed the relevance of Primary Health Care (PHC) in the early detection of oral cancer and in the implementation of preventive strategies. While PHC has the potential to play a crucial role in reducing oral cancer-related mortality, the network's performance still faces a number of challenges. The training of PHC professionals was identified as one of the main limiting factors. Many health professionals are still not sufficiently prepared to identify early signs of oral cancer, which results in late diagnoses and, consequently, less effective treatments (SOUZA et al., 2020; PEREIRA et al., 2021). The lack of continuous, specialized training was cited as a significant obstacle. In this context, the need for courses and periodic updates for PHC professionals was widely highlighted, aiming to improve the ability to identify suspicious lesions early (ALMEIDA et al., 2019; LIMA et al., 2022).

In addition, the scarcity of clear protocols and guidelines on how to proceed in cases of suspicious oral lesions contributes to the failure of early detection. In several regions of Brazil, knowledge about oral cancer is still limited, which leads to underreporting of cases and an increase in mortality. Training, although essential, must be accompanied by more comprehensive preventive strategies. In this sense, educational campaigns on risk factors, such as smoking, excessive alcohol consumption, and inadequate exposure to the sun, have been shown to be effective in reducing the incidence of the disease, especially in urban areas (COSTA et al., 2021; SOUZA et al., 2022). However, in rural and peripheral areas, the implementation of these campaigns faces significant challenges, mainly due to the lack of adequate infrastructure and material resources (FERREIRA et al., 2020).

Preventive education has shown positive results, but its effectiveness depends directly on the local context, such as the available health infrastructure and the level of education of the population. The barrier to access to health services was another factor frequently mentioned. The work overload of PHC professionals and the lack of adequate material resources, such as complementary tests for early diagnosis, limit the possibilities of effective care. This scenario is aggravated by the lack of an efficient referral and counter-referral network between primary services and specialized services of greater complexity (PEREIRA et al., 2020; OLIVEIRA et al., 2023). The articulation between different levels of health care

was identified as a need to ensure that suspected cases of oral cancer are referred appropriately, avoiding delays in diagnosis and impairing the prognosis of patients (FERREIRA et al., 2019).

In addition, structural difficulties within PHC contribute to lower coverage and, consequently, to late detection of oral cancer, especially in peripheral and rural regions, where health infrastructure is more precarious (GOMES et al., 2021). The scarcity of adequate equipment for imaging exams and the lack of specialized services make it difficult to make quick and accurate diagnoses. Despite this, early detection has shown a positive impact on patients' clinical outcomes. When oral cancer is identified in its early stages, the chances of cure increase considerably, and treatments can be less invasive, preserving the patient's quality of life (SILVA et al., 2021).

The relationship between early detection and improved prognosis is directly associated with the training of PHC professionals and the implementation of effective screening protocols. The use of advanced diagnostic techniques, such as high-precision biopsies and imaging tests, also contributes to improving detection accuracy, allowing for faster and more effective interventions (SOUZA et al., 2019; LIMA et al., 2021). Although the reality of PHC is still marked by gaps in the training of professionals and the scarcity of resources, the implementation of diagnostic technologies in primary care could reduce these failures and make the detection process more efficient.

Regarding the geographic distribution of services, it was possible to observe significant disparities between the regions of the country. In states in the Southeast and South, where the health infrastructure is more robust, preventive actions and access to complementary tests are more frequent, resulting in better indicators of early detection. However, in the North and Midwest regions, the reality is quite different. In these areas, access to health services is more limited, the training of professionals is deficient and complementary tests are more difficult to access, which contributes to late diagnosis. Table 1 illustrates the variations in PHC performance in the different regions of Brazil, highlighting the need for a more integrated and equitable public policy for the prevention of oral cancer (GOMES et al., 2020).

Despite the difficulties encountered, some strategies have shown positive results in the early detection of oral cancer. The implementation of educational campaigns and the training of PHC professionals have proven to be effective in several regions, but there is still much to be done. The continuous training of professionals, the strengthening of the referral and counter-referral network, and the improvement of the infrastructure of health services are essential for PHC to become an effective screening point and a robust line of defense against oral cancer (COSTA et al., 2020; ALMEIDA et al., 2022).

4 DISCUSSION

Oral cancer continues to be one of the most prevalent neoplasms, with a strong association with tobacco and alcohol use, factors that contribute significantly to the development of the disease. Early detection is one of the key factors to increase patient survival, since diagnosis in the early stages allows for less invasive treatments with better prognosis. However, as evidenced by several studies, the early diagnosis of oral cancer still faces barriers, especially in primary health care settings (Warnakulasuriya, 2009; Gomes et al., 2020).

Regional disparities in Brazil are striking, with large variations in access to care and in the level of preparation of professionals to perform tests and identify early signs of the disease. In regions such as the Southeast and South, early diagnosis is facilitated by robust infrastructure and the presence of specialized centers, where access to tests such as biopsy is faster and more efficient (Almeida et al., 2022). However, even in more developed regions, socioeconomic factors still significantly impact the results. Poverty and lack of health education are issues often associated with delayed diagnosis (Gomes et al., 2020).

On the other hand, in the North and Midwest of Brazil, the scenario is quite different. The scarcity of resources and the lack of trained professionals make the diagnosis and treatment of oral cancer more challenging. In these regions, access to specialized care is limited, which results in later diagnoses, when the disease is already in more advanced stages. These factors directly contribute to a high mortality rate, as demonstrated by Pereira et al. (2021) and Ferreira et al. (2019), who point to the lack of diagnostic equipment as one of the main limitations in Northern Brazil.

In addition, the discrepancy in access to specialized treatments between urban and rural areas is also an important concern, as discussed by Gomes et al. (2021). While in large cities there are referral centers that offer adequate treatment, in rural areas, the absence of professionals specialized in oral cancer and resources for early diagnosis increases the time between the appearance of symptoms and the start of treatment.

Below, we present a table that compares early diagnosis and access to oral cancer treatment in different regions of Brazil, highlighting the disparities observed and the main challenges faced in each of them:

Table 1. Comparison between Regions of Brazil in Terms of Early Diagnosis and Access to Oral Cancer Treatment

Region	Early Diagnosis	Access to Treatments	Challenges Observed	References
Southeast	High	High	Robust infrastructure, presence of centers Specialized	ALMEIDA et al., 2022; GOMES et al., 2020
South	High	High	Efficient access to exams and Specialized treatments	SOUZA et al., 2021; COSTA et al., 2020
North	Low	Low	Scarcity of resources, lack of trained professionals	PEREIRA et al., 2021; FERREIRA et al., 2019
Midwest	Moderate	Moderate	Disparities between areas urban and rural areas, difficulty in accessing exams	GOMES et al., 2021; SILVA et al., 2021
Northeast	Moderate	Moderate	Logistical challenges, high Demand and low resources	ALMEIDA et al., 2019; COSTA et al., 2020

As shown in the table, the regions with better infrastructure, such as the Southeast and South, have greater efficiency in early diagnosis and access to treatment, which contributes to better clinical outcomes. On the other hand, the North and Midwest regions face more significant challenges, mainly due to the lack of trained professionals and the scarcity of resources for diagnosis and treatment.

In addition to regional disparities, another important factor to be considered is the role of public policies in the implementation of prevention and early diagnosis strategies. Studies such as those by Brocklehurst et al. (2010) and Shiboski et al. (2005) point out that, although public health policies are being implemented, there is a lack of coordination between the federal, state and municipal spheres, which ends up hindering the effectiveness of screening and prevention programs. In this context, it is essential to strengthen the integration of public policies with primary health care to ensure universal access to early diagnosis, especially in less favored areas.

5 CONCLUSION

Oral cancer is a disease of great impact on public health, with increasing prevalence, especially among individuals who have risk factors such as smoking and alcohol consumption. Early detection of this pathology is essential for improving the prognosis of patients, since early diagnosis is directly associated with less invasive treatments and better survival rates. However, regional disparities in Brazil, both in access to health care and in the conditions of diagnosis and treatment, represent significant challenges for the effective implementation of prevention strategies.

Evidence reveals that more developed regions, such as the Southeast and South, have more robust infrastructure and greater access to specialized treatments, which allows for earlier detection and more positive clinical results. On the other hand, in regions such as the North and Midwest, the challenges are more evident, due to the scarcity of resources, the lack of qualified professionals, and the difficulty in accessing specialized services. These differences reflect the socioeconomic and geographic inequalities that still prevail in Brazil, directly affecting the oral health of the population.

In addition, the scarcity of integrated and efficient public policies for screening and early diagnosis of oral cancer in peripheral areas aggravates the situation, making it even more difficult to change this scenario. Therefore, it is essential to strengthen public oral health policies, focusing on the training of primary care professionals and the implementation of effective screening programs that ensure the early diagnosis of oral cancer in all regions of Brazil.

Strengthening primary care, continuous training of health professionals, and improving access to specialized services are key steps to reduce disparities in the diagnosis and treatment of oral cancer and, consequently, increase the chances of cure and quality of life for patients. In addition, the implementation of health education strategies, with awareness campaigns about the early signs and symptoms of oral cancer, can contribute significantly to reducing the incidence of the disease in more advanced stages.

In summary, the early diagnosis of oral cancer in Brazil depends on a combination of factors, such as the improvement of health infrastructure, the continuous training of health professionals, and the effective implementation of public policies that ensure equal access to diagnosis and treatment, regardless of the geographic region or socioeconomic condition of the population. Overcoming these challenges can contribute to reducing mortality associated with oral cancer and improving the oral health of the Brazilian population.

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