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RESEARCH ARTICLE

Characterization of Dental Emergency Service CESFAM Dr. Jorge Sabat, Valdivia.

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ABSTRACT

Objective: To describe the emergency ambulatory dental care profile in a Family Health Center (CESFAM) in Valdivia.

Materials and methods: Descriptive study conducted between April and July 2019 in the Emergency Dental Service CESFAM Dr. Jorge Sabat of Valdivia. Consecutive care was recorded for patients over 18 years of age. The following information was obtained from a data collection sheet: area of origin, history of previous emergency extraction, educational level, reason for consultation, and, if applicable, reason for extraction. In addition, through the "Emergency Care Data" form, sex, age, diagnosis, treatment, and, if applicable, extracted tooth were recorded.

Results: 947 visits were recorded without duplication. In distribution by sex, 53.8% corresponded to women. The most frequent age group was adults (56.6%). The urban population corresponded to 90.8%. High school education was the most common with 37.6%. The main reason for consultation was pain (46.6%). GES diagnoses reached 37.7%. The most prevalent pathology was chronic periodontitis (35.9%), and the most performed treatment was exodontia (69.8%). Molars were the most extracted teeth (59.2%), and users with a history of previous emergency extraction corresponded to 62.7%.

Conclusions: The general characteristics of the population revealed a deficit in oral health, where most of the participants consulted for pain in advanced stages of their diseases, undergoing mainly dental extractions as treatment. In general, the results are in line with national health studies and previous scientific literature, where the demand for attention is preferably from adults, primarily women belonging to urban areas, with complete secondary education.

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INTRODUCTION

Oral health is one of the health priorities in Chile due to the growing perception that the population has of oral health and the impact it has on the general health and quality of life of the patients[1,2]. In this context, Ambulatory Dental Emergency is defined as a group of oral and maxillofacial pathologies of sudden onset, of multiple etiology, which are mainly manifested by acute pain and which cause a spontaneous demand for attention[3].

In 2007, these emergencies were included in the Explicit Health Guarantees (GES), in search of a solution to the accumulated damage in the Chilean adult population and the high existing demand[5], becoming the most used GES service at national level[6]. International studies indicate that the most frequent causes of dental emergencies are consecutive to caries, periodontal diseases, and dentoalveolar trauma[2,7,8.]

National studies show a high prevalence of caries and periodontal disease in the general population; however, they do not collect information on emergency department care or the characteristics of patients requiring this type of care[9-11.] One frequently delivered treatment is dental extractions, thus removing a vital part of the stomatognathic system[12].

In Chile, a high prevalence of partial or total edentulism has been reported[12-13], which can have serious consequences regarding social, psychological, and economic impact on individuals, communities, and health services. In addition, this entails high expenses, including the financial cost of treatment, school or work absenteeism, and loss of income, which can lead to impacts on the community in general due to the expenses that health services must assume for the treatment of the condition[9].

In recent years, the dental emergency system in the country has undergone changes[5]. According to the search conducted, few studies at the national level analyze the current situation and those that do exist focus on evaluating user satisfaction or the evolution of this system retrospectively[5,14].
Therefore, this study aims to describe the profile of ambulatory dental emergency care and its users in a Family Health Center (CESFAM) in Valdivia.

MATERIAL AND METHODS

A descriptive observational study was conducted in the Emergency Dental Service of the Dr. Jorge Sabat Gozalo Family Health Center in Valdivia during the first semester of 2019. This study was approved and authorized by the Scientific Ethical Committee of the Valdivia Health Service (Ord. No. 076/2018, approval code 1361470), the Municipal Health Department (DESAM) of the commune of Valdivia, and the CESFAM Management.

A non-probabilistic convenience sample was performed on the users of the Dental Emergency Care Service of CESFAM Jorge Sabat, who attended during the first semester of 2019, where those invited to participate signed an informed consent form. The minimum number of dental care visits to be recorded was calculated based on the annual number of visits in this service in 2018 (6948 visits), a confidence level of 95% was established, with an expected frequency of 50% of patients attending for dental extraction and an acceptable error of 3%, resulting in a minimum of 926 visits.

The study included those patients over 18 years of age, regardless of sex, who signed the informed consent form, fully and correctly answered the survey, and whose Emergency Care Data (UCD) were indexed.
Those patients with mental disorders that prevented them from giving their consent, those who did not understand Spanish, or those who consulted more than once for the same tooth and reason for consultation were excluded.

In the case of illiterate users, both the survey and the informed consent form were read aloud for comprehension and in the presence of a witness.

Data collection was carried out using the DAU form completed digitally by the dental surgeon on duty. In addition, the patient had to answer a survey designed for the study, which two researchers applied.

The following variables were extracted from the DAU form: sex (female/male), age, age range (youth/adult/elderly), diagnosis according to the Dental Emergency Care Guide, and treatment. In addition, in cases where the treatment of choice was tooth extraction, the type of tooth (molar/ premolar/ canine/ incisor) was registered.
The following variables were extracted from the survey: educational level (no basic education, basic education (complete/incomplete), secondary education (complete/incomplete), higher education (complete/incomplete)), area of origin (rural/urban), reason for consultation (pain, inflammation, dentoalveolar trauma, dislodgement, restoration, extraction, mobility) and previous emergency dental extraction (yes/no).

In the cases where the treatment was extraction, the reason for extraction was recorded (pain/ financial reason/ lack of time to carry out restorative treatment/ doubts about the prognosis of the restorative treatment/ tooth with indication for extraction). When the survey was completed, it was explained to the patient that they should indicate the most representative or predominant reason for his/her case.

For the purposes of this study, a tooth with indication for extraction was considered to be a tooth with any of the following conditions: tooth with no rehabilitative prognosis, periodontal disease with severe attachment loss (25), prosthetic or orthodontic indication. In the case of age ranges, the National Statistics Institute (INE) classification was used, which classifies the Chilean population according to age into Children (0 to 14 years), Youth (15 to 29 years), Adults (30 to 59 years) and Seniors (65 years or older) (29).

For the study purposes, patients between 18 and 29 years of age were considered young people to be legally able to sign the informed consent form without the need for a guardian.

All data were tabulated in an electronic Google Forms (Google Inc. Mountain View, CA, USA) for subsequent analysis. The variables were analyzed using descriptive statistics of frequencies, except for age, where descriptive statistics of means and dispersion were used (STATA v.14.0. StataCorp. Texas, USA).

RESULTS

There were 947 attentions in the period from April to July 2019. In the distribution by sex, 53.5% (n=507) corresponded to females. The mean age was 41.91±16.4 years (95% CI: 40.87 - 42.96 years), being for the female sex an average of 41.75 ±16.41 years (95% CI: 40.32 - 43.18 years) and for the male sex 41.1 ±16.41 years (95% CI: 40.56 - 43.64 years). The details of the distribution by age group, origin, and educational level are shown in Table I (Table I).

The percentage distribution of patient visits according to reasons for consultation is shown in Figure 1 (Figure II). Emergency GES diagnoses accounted for 38.2% (n=362) of the total number of visits, and non-GES diagnoses accounted for 61.8% (n=585). The percentage distribution of GES and non-GES diagnoses are shown in Figures 2 and 3, respectively (Figure II, III).

The most frequently provided treatment was dental extraction, with 67.9% (n=643). The percentage distribution of the treatments performed according to sex is shown in Table II (Table II). In 62.3% (n=590) of the cases, the users had already received an emergency extraction.

Table I: Distribution of sociodemographic data according to sex (n=947)

		Female (N=507)		Male (n=440)	
Variable		n	%	n	%
Age group	Young	157	30.97	132	30
	Adult	264	52.07	236	53.64
	Older	86	16.96	72	16.36
Origin	Rural zone	47	9.27	41	9.32
	Urban zone	460	90.73	399	90.68
Educational level	Complete basic education	53	10.45	40	9.09
	Incomplete basic education	37	7.3	48	10.91
	Hight school education complete	196	38.66	163	37.05
	Incomplete secondary education	94	18.54	76	17.27
	Higher education complete	63	12.43	57	12.95
	Incomplete higher education	62	12.23	51	11.59
	Non basic education	2	0.39	5	1.14

Figure 1: Percentage distribution of the population according to the reason for consultation.

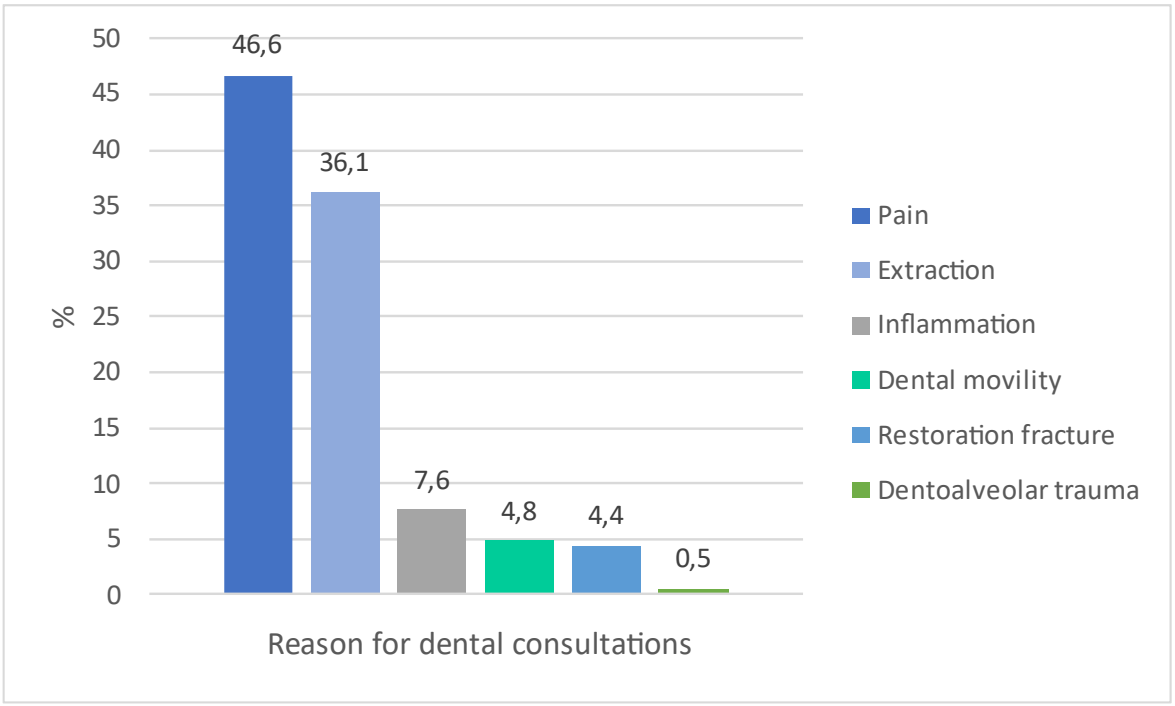

Figure 2: Percentage distribution of the population according to GES diagnoses.

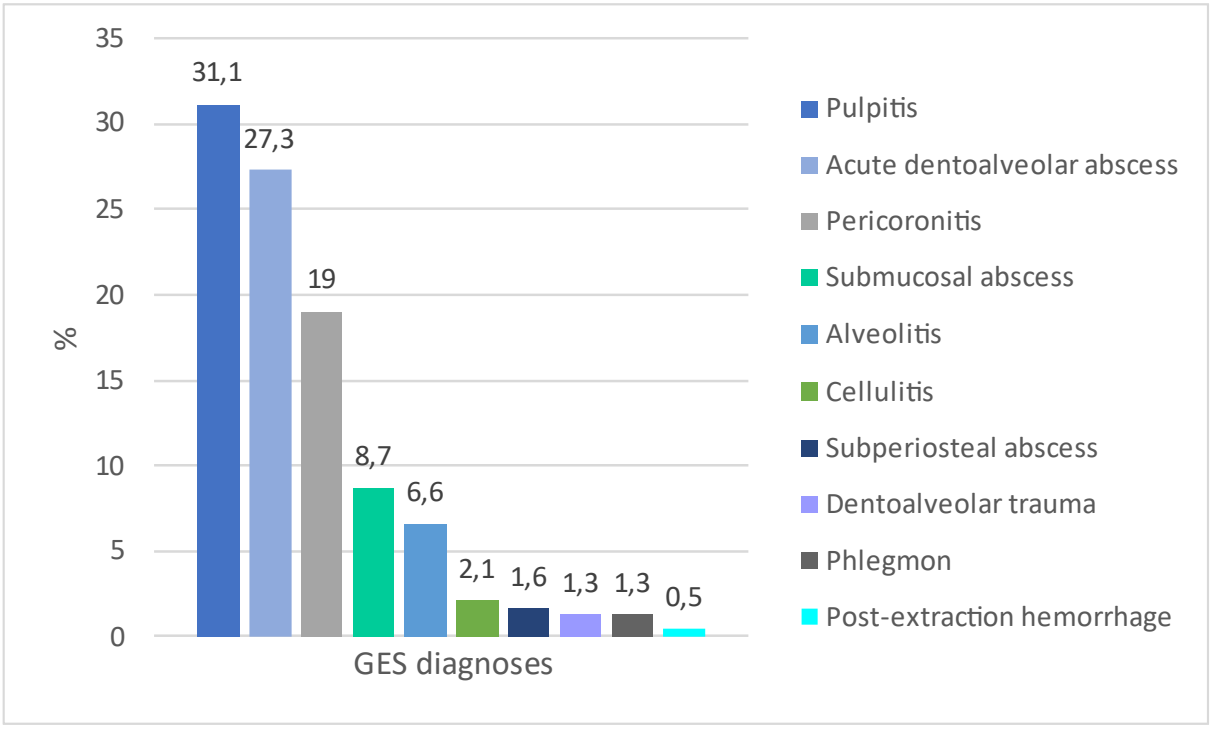

Figure 3: Percentage distribution of the population according to non-GES diagnoses.

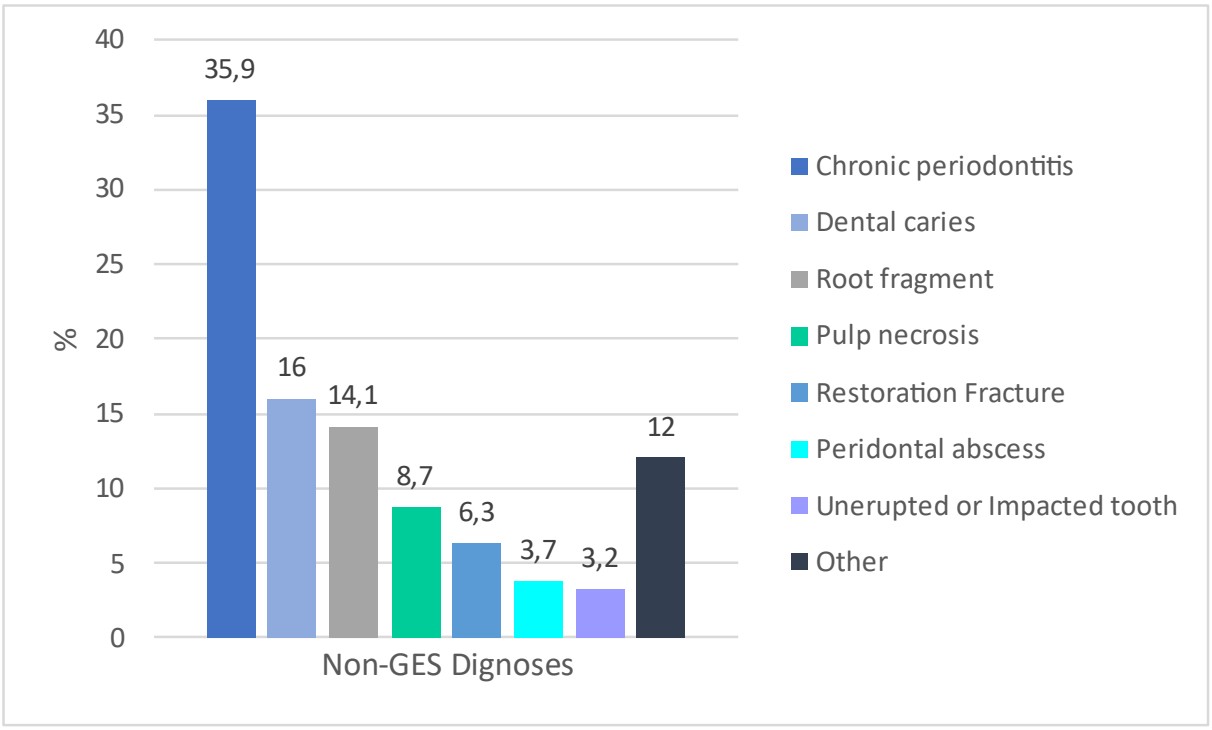

Table II: Distribution of treatments performed according to sex (n = 947)

	Female (N=507)		Male (n=440)		Total (n=947)	
	n	%	n	%	n	%
Exodontia	326	64.3	317	72.05	643	67.9
Referal	57	11.24	37	8.41	94	9.93
Control	34	6.71	34	7.73	68	7.18
Pericoronitis treatment	28	5.52	6	1.36	34	3.59
Restoration	20	3.94	13	2.95	33	3.48
Alveolitis treatment	12	2.37	11	2.5	23	2.43
Other	30	5.91	22	5	42	4.43

In cases in which dental extraction was performed, the indication for extraction was the most prevalent reason with 83.4% (n=536); when extraction was not indicated, the users decided to opt for extraction for economic reasons in 6.8% (n=44) of the cases, for pain in 6.8% (n=44), for lack of time to perform the ideal treatment in 2.2% (n=14) and for doubts about the rehabilitative prognosis of the tooth in 0.7% (n=5).

The most frequently extracted tooth was molars with 59.1% (n=396), followed by premolars with 25.2% (n=169), incisors with 11.1% (n=74) and to a lesser extent canines with 4.6% (n=31).

DISCUSSION

The general characteristics of the population studied reveal a deficit in the oral health situation, where most of the participants consult the dentist for pain, in advanced stages of the diseases, obtaining mainly dental extractions as treatment.

These oral health conditions could result from the sum and subtraction of a true mosaic of situations, such as lack of access to preventive programs at younger ages, cultural beliefs, problems accessing the ideal treatment, family environment, patient education, among others[12].

According to what was observed in the research, the female sex is predominant, agreeing with the percentage ratio according to the sex of the population validated by FONASA for CESFAM Dr. Jorge Sabat, in 2018, 54% of the enrolled users correspond to the female sex. In this regard, it is worth mentioning that gender intersects most of the other health determinants to the extent that

they impact women and men differently. In health, gender determines inequalities expressed in the fact that women get sick more than men throughout the life cycle[28].

Regarding the age range, adults between 30 and 59 years of age are those who consulted most frequently, a result consistent with that found by Bucchi in 2012, in a study carried out in five primary health care facilities in Chile, where 60.9% of the users of the dental emergency care service corresponded to adults between 20 and 60 years of age[14]. These findings could be explained by the lack of access they had at younger ages to preventive programs, self-care measures, and efficient and timely curative treatments[15].

On the other hand, efforts are currently focused on preventing and reducing the most prevalent oral morbidity in children under 20 years of age[1]. In addition, specific programs for older adults have also been targeted[15], seeking to solve the significant damage accumulated in adults-only through the dental morbidity program.

Another result of this study indicates that the urban population consulted to a much greater extent than the rural population. This is in agreement with the National Health Survey 2010 - 2011, where the sample of people whose last visit to the dentist was less than six months ago was significantly higher in urban than in rural areas (24.7% and 16.2%, respectively), while the percentage who visited the dentist more than five years ago was significantly higher in rural areas[23]. This could indicate a barrier to access to care[16], since the rural population is limited by the hours of attention, mostly at night, making it difficult to commute to their residence.

Regarding educational level, most of the population studied had completed high school or higher education. This result is similar to that found by Bucchi, where 50.2% of the population had completed or incomplete secondary education[14]. Similarly, in his study in Venezuela, Soto reported that 30.2 % of the sample had completed pre-university, followed by technical high school (26.2 %) and university level (22.2 %)[17]. In this aspect, the importance of health education is emphasized, which should be aimed at the general population, regardless of their educational and intellectual level[26]. In addition, the importance of other factors that can influence self-care, such as cultural beliefs, family factors, or social status, which can vary throughout life, should also be taken into account[27].

On the other hand, the principal reason for consultation was pain. According to the international literature, this is the most frequent reason for consultation in odontostomatological emergencies, both in outpatient and inpatient emergency departments[7], and in most cases requires immediate professional attention due to the severe disability it causes[18].

The epidemiological data on odontogenic pain vary depending on the population studied, highlighting the high prevalence in the general population, ranging between 19% and 66%[19].

The least prevalent reason for consultation was dentoalveolar trauma (0.5%), which may be explained by the fact that the study did not include the child population. According to Fodor, in children under seven years of age, the most frequent reason for consultation is dentoalveolar trauma, commonly caused by falls and bicycle accidents[20].

Diagnoses classified as GES emergencies were less prevalent than non-GES diagnoses. This could be due to the fact that the pathologies included in the GES for Dental Emergency Care cover a limited number of pathologies, which present more acute and painful symptoms[3].

The most prevalent pathology was chronic periodontitis. This result is in agreement with the findings of the first national study of oral health in Chilean adults, which showed extensive damage to the supporting structures of the teeth, with the presence of loss of clinical attachment ≥ 6 mm in 58.3% of adults and 81.4% of the 65-74 age group[9].

In the case-control study carried out by Quezada, it was concluded that the health reform through the GES Comprehensive Oral Health for 60-year-olds showed changes in the clinical parameters of the beneficiary patients but failed to maintain periodontal health and the management of risk factors[21]. The lack of follow-up and control can explain this to ensure the success of periodontal treatment. In this aspect, this program should deepen in more effective strategies to achieve behavioral changes because what is currently being done is insufficient[10].

Dental extraction was the most frequently performed treatment. In most cases, the users had already received an emergency extraction on a previous occasion; this represents a lower percentage than that found previously in the study by Gamonal in Chile, where 87.3% of the patients had already had at least one extraction due to caries[13]. It is also lower than that found by Carneiro in Brazil, where 87.7% of the sample exhibited previous tooth loss[22].

According to Olate, in selecting this type of treatment, the socio-economic situation of the patient is undoubted of great importance, and special attention should be paid to the low-income and rural population since they have less access to dental care[12].

Tooth extraction due to indication was the most prevalent reason, indicating the ineffectiveness of preventive and restorative programs that do not intervene in a timely manner.

Like Monsalves, the authors consider that one of the most relevant determinants for maintaining oral health in a healthy population, or a treated population, is health control since this allows to detect risk factors and incipient caries lesions in time, being able to intervene prematurely in patients with simpler measures, and a less invasive approach and at a lower cost[24].

According to Carneiro's study, tooth extraction is directly related to caries disease; However, other factors that lead to extraction should also be considered, such as economic and cultural reasons, accessibility to oral health programs, and lack of time for the user to attend dental care.[22] In this regard, when extraction was not indicated in this study, the users decided to opt for extraction mainly for economic reasons or pain.

Carneiro, in 2012 registered the reason for extraction not indicated by the dental surgeon as "self-will", obtaining 17.96% of the cases and concludes that, in general, the patient often opts for extraction, as it is considered the most practical and economical solution. This result could indicate that the professional code of ethics is not adequately complied with since it is up to the dentist to carry out motivation and health education, thus developing his/her role in health promotion[22].

Among the limitations of this study, we can mention those inherent to the data collection form, where the answers can be affected by a memory bias of the user when consulting if he/she had previously undergone an emergency dental extraction, in addition to the fact that the patient can give answers they believe to be socially more accepted. It should also be noted that this collection form has not been validated. On the other hand, it is worth mentioning that this study was carried out during the first half of the year; therefore, by collecting information during an entire year, the results may vary.

Regarding the implications of the results and considering the limitations presented, primary dental care services should consider the sociodemographic characteristics found when preparing educational material and developing intervention strategies that control and reduce the risk factors directly associated with the appearance of stomatological emergencies.

On the other hand, the above can be considered when organizing services, for example, to increase the number of care services available for the periodontics service due to its high prevalence. Furthermore, this study could also be taken as an initial reference for further descriptive studies throughout the country, where it is recommended to include a broader spectrum of patients and time in order to evaluate the need to reorient the services delivered through public

policies aimed at promoting oral health and providing better services for the population.

CONCLUSION

The general characteristics of the population studied revealed a deficit in the oral health situation, where most of the participants consulted the dentist for pain, in advanced stages of the disease, obtaining mainly dental extractions as treatment. In general, the results agree with national health studies and previous scientific literature.

These oral health conditions could result from different variables, such as lack of access to preventive programs at younger ages, cultural beliefs, difficulties in accessing the ideal treatment, among others.

CONFLICT OF INTEREST

The authors have declared no conflict of interest.

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