ORIGINAL ARTICLE

Oral cancer education program for institutionalized geriatric patients

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ABSTRACT

Introduction: dental care in the elderly is of high interest and less time is devoted to it.
Objective: to design an educational program about oral cancer aimed at the institutionalized geriatric population.
Methods: a descriptive, cross-sectional study was carried out in the period from January 2018 to February 2019 in a sample of 76 institutionalized geriatric patients belonging to the "Celia Sánchez Manduley" Stomatological Clinic in the City of Santa Clara. The following variables were studied: risk factors, level of information, level of schooling and evaluation by specialists' criteria; the data were collected in a questionnaire.
Results: deficient oral hygiene and the use and condition of prosthesis were identified as main risk factors, as well as an inadequate knowledge about smoking, the negative effects of alcoholism and oral self-examination with regard to oral cancer.
Conclusions: patients with an inadequate level of information on oral cancer predominated. An educational program considered relevant, feasible and with quality by the Stomatology Specialists was designed. It was considered that these results were possible due to the strength of the content of the topics offered and the use of innovative participatory techniques; human and material resources were taken into account in each activity implemented in which the promotion and prevention of oral cancer aimed at institutionalized geriatric patients were developed.
Key words: mouth neoplasms; education; geriatric patient

RESUMEN

Introducción: el cuidado estomatológico en la tercera edad tiene un alto interés y se le dedica un menor tiempo.
Objetivo: diseñar un programa educativo sobre cáncer bucal dirigido a la población geriátrica institucionalizada.
Métodos: se realizó un estudio descriptivo, transversal en el período comprendido de enero de 2018 a febrero de 2019 en una muestra de 76 pacientes geriátricos institucionalizados pertenecientes a la Clínica Estomatológica "Celia Sánchez Manduley" de la Ciudad de Santa Clara. Se estudiaron las variables: factores de riesgo, nivel de

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información, nivel de escolaridad y valoración por criterio de especialistas; los datos fueron recogidos en un cuestionario.
Resultados: se identificaron como principales factores de riesgo la higiene bucal deficiente y el uso y el estado de la prótesis y un inadecuado conocimiento sobre tabaquismo, sobre los efectos negativos del alcoholismo y sobre el autoexamen bucal con respecto al cáncer bucal.
Conclusiones: predominaron los pacientes con un inadecuado nivel de información sobre cáncer bucal. Se diseñó un programa educativo considerado por los Especialistas en Estomatología pertinente, factible y con calidad. Se consideró que estos resultados fueron posibles por la solidez del contenido en los temas que se ofrecieron y por el empleo de técnicas participativas novedosas; se tuvieron en cuenta los recursos humanos y materiales en cada actividad implementada en la que se desarrollaron la promoción y la prevención del cáncer bucal dirigido a pacientes geriátricos institucionalizados.
Palabras clave: neoplasias de la boca; educación; paciente geriátrico

INTRODUCTION

Population aging is one of the major social problems of the 21st century. The number of people over the age of 60 in the last century increased from 400 million in the 1950s to 700 million in the 1990s, and it is expected that by 2050 there will be more than 2 billion elderly people. In the Americas, the rapid growth of older adults between 60 and 80 years of age is worsening the health situation. In Latin America and the Caribbean, the 60-and-older age group constituted 5.6% of the population in 1950 and increased to 9% in 2005; it is expected to reach 24.3% in 2050.[1,2]
In Cuba, 17.8% of the population is 60 years of age or older; 47.3% is male and the rest is female. Life expectancy at birth is more than 75 years, at age 60 it is more than 20 years and at age 80 it is more than seven years. The province of Villa Clara is the most aged in the country, in the 60 years and older age group.[3]
Stomatological care in the elderly has regained greater interest in recent years. The Stomatology Specialist must have a deep knowledge of the biological aspects due to the sensitive decrease in the mechanisms of adaptation and hystologic regeneration of the oral cavity. Elderly individuals require a different approach, modified treatments and knowledge of the tissue changes of old age that affect oral health services.[1]
Oral lesions have a higher incidence in the older adult population, more than 95% of lesions occur in people over 40 years of age and the average age at diagnosis is 60 years, among whom oral cancer is most frequently diagnosed. [4] Cancer is the silent epidemic of the 21st century and a serious health problem for humanity that varies from country to country; according to health statistics about 40 000 new cases of cancer are diagnosed each year in the country, which places Cuba among the fastest growing incidence rates in the Latin American and Caribbean Region.[2,3]
There are many risk factors and their combination increases the probability of suffering the disease. The adequate level of knowledge of the factors that produce oral cancer contributes to its prevention.[5,6,7]

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Since 1982, the Ministry of Public Health in Cuba implemented an Oral Cancer Detection Program (PDCB, according to its Spanish acronym, Programa de detección del cáncer bucal), which is pioneer in the world and aimed at reducing the morbidity and mortality of oral cancer through prevention and early diagnosis by means of the examination of the oral complex. Despite the implementation of actions aimed at control, neither mortality nor the incidence of invasive cases have been reduced for several decades.[8]

Stomatology specialists should include health education in their daily work to promote self-responsibility and joint collaboration in the reduction of this disease in the population, with emphasis on the elderly. Older adults, for the most part, downplay the importance of oral health and the consequences of systemic diseases and their treatments.[1,4]

Among the prioritized programs of the Cuban National Health System is the Comprehensive Care of the Elderly, a program that emerged in 1974 with the intention of developing the Specialty of Geriatrics. In 1995, the program was restructured into three sub-programs: care in the community, care in institutions and hospital care with the aim of providing comprehensive care to the elderly population and satisfying their growing health needs.[9]

The program for the elderly in Cuba is characterized by community work and because it provides promotion, prevention, care and rehabilitation; however, it is reported in the literature that there is an increase in oral and dental disorders in the geriatric population.[9]

There are numerous institutions in the country created for the care of the elderly (nursing homes and grandparents' homes), which receive care from the Stomatology Specialist in the nearest stomatology clinics. Few health promotion and prevention activities are carried out when working with the elderly by the Stomatology Specialist, who should provide them with the necessary knowledge to induce positive changes in lifestyles, so there is a low level of information for this group. The message to be transmitted needs to be clear, precise and, above all, understandable for this population.

The geriatric population of the "Celia Sánchez Manduley" Stomatology Clinic is not exempt from these limitations. This research is carried out with the aim of designing an educational program on oral cancer in order to raise the level of information and prevent the occurrence of these conditions.

METHODS

A descriptive, cross-sectional study was carried out in the period from January 2018 to February 2019 with the 95 patients of 60 years and older who attended this Service in the "Celia Sánchez Manduley" Stomatological Clinic in the City of Santa Clara, Villa Clara Province, in the study period. Seventy-six patients who consented to participate in the research were selected.

Techniques and procedures

The research was carried out in three stages:

- First stage: a questionnaire was applied for the identification of learning

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needs consisting of 14 closed questions understandable to this age group and the level of information was evaluated.

- Second stage: based on the initial results of the questionnaire, an educational program on oral cancer was designed for geriatric patients to increase their level of information.
  The educational program consisted of six meetings in which elements associated with oral cancer were addressed using participatory techniques (Table 1).

Table 1. Oral cancer education program

Meetings	Topics	Participative techniques used
1	I. Presentation and introduction to the educational program	- The spider's web - The PNI
2	II. Oral cancer. General information	- Brainstorming cards - Sentence completion
3	III. Approach to risk factors for oral cancer	- The grid - The PNI
4	IV. Smoking and alcoholism: high-risk behaviors for oral cancer	- Key words. - Let's look beyond
5	V. Oral self-examination	- Poster - The league of knowledge
6	VI. Quality of Life and Health Promotion in the Elderly	- Pure story - Retrospective look - The cathartic space

PNI: positive, negative, interesting

- Third stage: the relevance, feasibility and quality of the educational program designed were determined by means of the Specialists' criteria that evidenced the level of information obtained (Annex 1).
  For the selection of the Specialists, a non-probabilistic intentional sampling was carried out on a group of 10 health professionals who met the requirements:
  - Possessing the title of II Degree Specialist in General Comprehensive Stomatology and more than 10 years of experience as a professor with main teaching category.
  - Hold a Master's Degree in Community Oral Health and continue working in activities related to the academic degree.
  - Holding a degree of Specialist in Geriatrics, with five or more years of experience in practice and with main teaching category.

The following were considered as evaluative indicators:

- Relevance: the program offers a response to the difficulties identified in the diagnosis according to the way it is conceived.
- Feasibility: real possibility of availability of human and material resources to actually carry out the educational program.
- Quality: value of use of its results in correspondence with the good harmony between organization, methodology and language used and

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adequacy and comprehensibility once the pertinence and feasibility studies have been carried out.

Effectiveness evaluation:

- Efficient: when evaluated by seven or more Specialists in each aspect.
- Deficient: when evaluated by less than seven specialists in each aspect.

Finally, the criteria, suggestions and opinions of the Specialists were taken into account to enrich the educational program.

The data collected were recorded in a database with Microsoft Excel 2010 and worked with R software version 3.4.3 for statistical processing. The results were presented in graphs and frequency distribution tables.

During the development of this research, the ethical and bioethical principles for the study in humans were respected.

RESULTS

The distribution of the patients according to risk factors for oral cancer showed that the use of the prosthesis, the condition of the prosthesis and oral hygiene were the risk factors that had the greatest impact on the study sample. Alcoholism was the risk factor with the lowest incidence of the disease (Table 2).

Table 2. Distribution of patients by oral cancer risk factors

Risk factors	Yes		No		Total	
	No.	%	No.	%	No.	%
Oral hygiene	47	61.84	29	38.12	76	100
Use of dentures	64	84.21	12	15.79	76	100
Denture cleaning	22	34.38	42	65.62	64	84.21
Condition of dentures	52	81.25	12	18.75	64	84.21
Sleeping with dentures	19	29.69	45	70.31	64	84.21
Ingestion of hot food	12	15.79	64	84.21	76	100
Smoking	18	23.68	58	76.32	76	100
Alcoholism	3	3.95	73	96.05	76	100

Source: individual medical records

The distribution of patients in terms of information about oral cancer reported that 84.21% have knowledge about smoking and use of prostheses with respect to oral cancer. 82.89% have no knowledge about the negative effects of alcoholism on oral cancer, 71.05% regarding prosthesis cleaning and 68.42% regarding oral self-examination (Figure 1).

The highest percentage was in patients with a primary school level of education (38.16%), who were characterized by an inadequate level of information. Those with a university level were defined by an adequate level of information (21.05%). Patients with a moderately adequate level of information were more likely to be at the high school level of schooling (13.16%) -Table 3.

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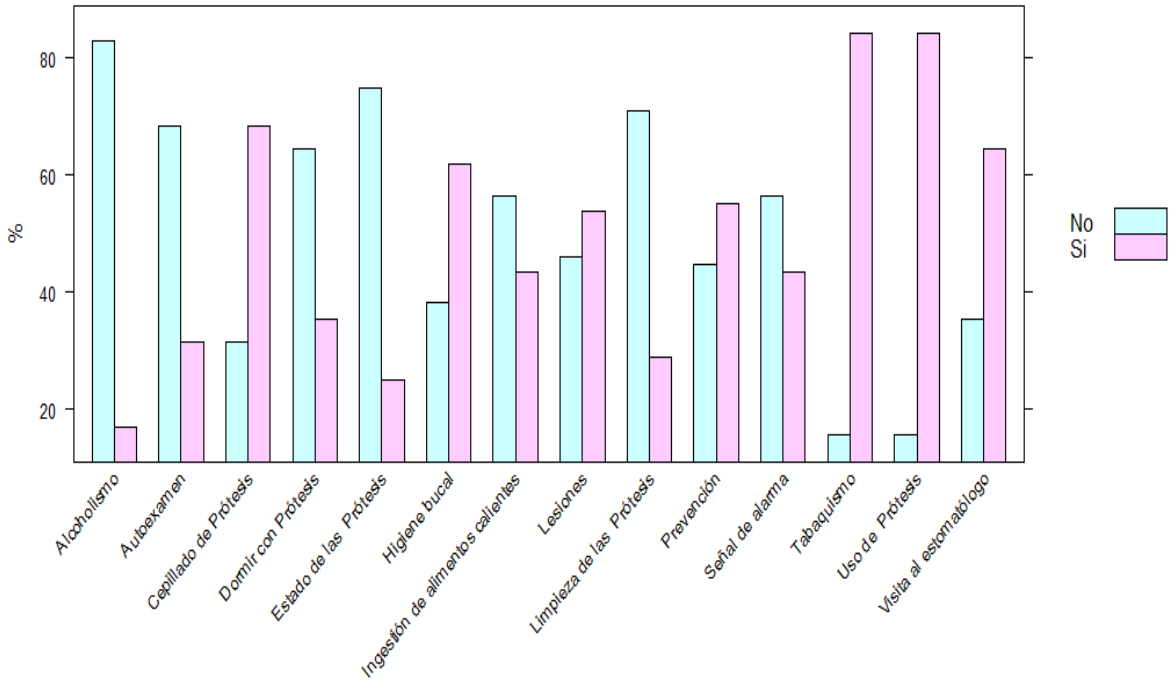

Figure 1. Distribution of patients for oral cancer information
Source: questionnaire to geriatric patients

Table 3. Distribution of patients for level of information according to level of education

Level of information	Level of education								Total	
	Elementary		High School		Technical		University			
	No.	%	No.	%	No.	%	No.	%	No.	%
Adequate	1	1.32	3	3.95	4	5.26	16	21.05	24	31.58
Moderately adequate	4	5.26	10	13.16	1	1.32	1	1.32	16	21.05
Inadequate	29	38.16	7	9.21	0	0.00	0	0.00	36	47.37
Total	**34**	**44.74**	**20**	**26.32**	**5**	**6.58**	**17**	**22.37**	**76**	**100**

χ^2=73.036; p=9.7367; V Cramer=0.6932

The group of specialists who evaluated the program was made up of ten professionals: two Masters in Community Oral Health, two assistant professors, four assistant professors and two instructors, most of them with more than 10 years of teaching experience; 100% gave an efficient evaluation in the aspect of quality, 90% in feasibility and 80% in relevance.
These results were possible due to the solid content of the topics offered in the educational program and the use of innovative participatory techniques. The design took into account human and material resources and through each activity implemented, the development of oral cancer promotion and prevention aimed at institutionalized geriatric patients is declared.

DISCUSSION

Aging is a dynamic, progressive and irreversible process in which there are morphological, functional and biochemical alterations that progressively alter the

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state of the organism; but even so, old age should be considered as a special stage in people's lives. More and more people surpass the chronological barriers and population aging becomes one of the most important challenges for modern societies, which extends to medical specialties, including Stomatology.[10,11,12,13]

Stomatological prostheses constitute an important risk factor for the development of premalignant and malignant lesions in the oral cavity, especially when associated with continuous use by the wearer and poor hygiene.[11] Lesions in the oral mucosa are more frequent in the elderly with old or defective dental prostheses and within these, chronic alterations of the mucosa provide an exceptional entry point for the action of known carcinogens. In addition, the sustained traumatic effect of prostheses is something that can be detected and is therefore a risk that can be controlled, which the author of the present research considers has important implications for the stomatological profession.

A study[10] reflects the main knowledge about risk factors and states that a high percentage of patients do not know that ill-fitting prosthesis is an important risk factor for developing oral cancer, data that coincide with the present research, so the author considers pertinent to show clearly that there is more than enough cause to work on education and health promotion.

A study carried out in Ecuador refers that it is very common to find patients with poor oral hygiene at this age, which may be due to the fact that they do not recognize it as a method to achieve general health, and others, in spite of having such knowledge, do not practice adequate oral hygiene habits.[11] In the research "Main oral lesions and risk factors present in population over 60 years old" the authors refer that oral hygiene is a risk factor that is determined at this stage of the patient's life, taking into account whether or not he/she uses dental prosthesis.[10]

Other authors consider that insufficient oral hygiene is a typical factor in the appearance of lesions in the oral mucosa[12] and that in order to eliminate oral cancer it is necessary to carry out educational actions with patients, in which the importance of quality and oral hygiene play a role;[13,14] issues that coincide with this research.

The author considers that oral hygiene is the key to therapeutic success in geriatric patients to prevent oral cancer because many failures in the control of the disease can be attributed to insufficient cleanliness of the oral cavity.

Regarding food consumption a study[15] documents that 33.3% of the older adults studied ingested hot and spicy foods, which corresponded with the appearance of premalignant lesions in the oral cavity.

The author considers that the ingestion of hot food is a risk factor for oral cancer in geriatric patients, which is affected by low levels of information on the subject; therefore, it is important to carry out actions aimed at raising the level of information in patients in this regard.

Another factor that affects the oral health of the elderly is smoking. In a review on the subject, it was suggested that tobacco consumption causes serious problems in the oral cavity and leads to cancer in that area.[16]

An investigation showed that 98.5% of regular smokers who use prostheses presented lesions in the oral cavity and considered this habit to be deeply rooted

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in the Cuban population; the longer the time that smoking is practiced, the greater the chances of suffering oral lesions, obtaining as a result that 80.9% of smokers with more than 10 years of practice were the most affected.[17]

Tobacco consumption is harmful to the population in general and causes oral cancer:[18] when tobacco consumption is combined with alcohol consumption, complications are greater.[16]

When smoking and alcohol consumption coincide, 10.5% of the patients have both, some reported that they smoke when they drink alcohol and the vast majority smoke more than a pack of cigarettes a day,[19] a fact that worries the author of this study because the level of knowledge regarding the relationship between alcohol consumption and oral cancer is very low.

The author considers that in spite of the efforts made by the Cuban state in stomatology, oral diseases, and in particular oral cancer, are a health problem because the population, specifically the geriatric population, has not been made aware of prevention due to the lack of knowledge of the causal factors.

The researcher considers that comprehensive stomatological care needs to be seen from a multidisciplinary and multiprofessional perspective and not see the mouth as an independent area of the organism because oral diseases are not limited exclusively to it.

The habits present in the population, which constitute risk factors for different diseases and which have been identified in this study, make it essential to carry out an intense preventive and health promotion work that includes all the social actors involved in the health-disease process in order to alert patients about the elimination of these unhealthy behaviors or habits and to make them responsible for their own health.

Due to the results obtained, it is considered that the application of this educational program becomes one more tool to consolidate the Oral Cancer Early Detection Program that contributes to educate this vulnerable and high-risk population, as well as to optimize their general health, as a complement to the aspirations of the Cuban state to achieve human survival up to 120 years of age.

CONCLUSIONS

The study showed that the risk factors identified in the sample were poor oral hygiene and the use and condition of the attached prosthesis. Patients with an inadequate level of information on oral cancer predominated. Based on the cognitive deficiencies, the educational program "Oral health for a happy old age" was designed; the specialists considered it pertinent, feasible and with quality. These results were possible due to the soundness of the content of the topics offered and the use of novel participatory techniques and because they took into account the human and material resources in each activity implemented in which they developed the promotion and prevention of oral cancer aimed at institutionalized geriatric patients.

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ANNEXES

Annex 1. Questionnaire to specialists

Objective: To verify the quality, relevance and applicability of the educational program "Oral health for a happy old age" on oral cancer for institutionalized geriatric patients belonging to the "Celia Sánchez Manduley" Stomatology Clinic in Santa Clara.

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First and Last Name: _____
Work center: _____
Position held: _____
Years of experience: _____

Dear comrade:
You have been selected as external evaluator because of your degree of competence in the subject matter to assess the proposal, so we ask for your considerations in this regard. We express our gratitude in advance for your invaluable cooperation. Please use the following scale (efficient or deficient) to evaluate the degree of approval that you have on the elements that make up the manual.

Affirmations	Efficient	Deficient
The fundamentals and topics that make up the educational program are relevant		
The educational program is feasible in terms of human and material resources		
The educational program has quality, so it can be applied		

In the event that you have marked deficient in any of the categories, it would be appreciated if you could give us your reasons. We are open to all your suggestions, so that we can use them to improve the proposal.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

CONTRIBUTION OF THE AUTHORS

DRF, SAVS: conceptualization, data curation, formal analysis, research, methodology, validation, visualization, writing the original draft, writing (reviewing and editing).
ABR, DHG, XSM, NPP: data curation, research, writing (review and editing).

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