South American Publishing

SAP Community and Interculturality in Dialogue. 2024; 4:127
doi: 10.56294/cid2024127

ORIGINAL

Educational intervention on oral cancer in high-risk patients over 35 years of age

Intervención educativa sobre cáncer bucal en pacientes de alto riesgo mayores de 35 años

Iraida Céspedes-Proenza[1], Yarilín La-O-Rojas[2], Yusdelkys García-Bacallao[3], Ladisleny Leyva-Samuel[1], Yanelilian Padín-Gámez[2], Douglas Crispin-Rodríguez[4]

[1]Facultad de Ciencias Médicas Isla de la Juventud. Isla de la Juventud, Cuba.
[2]Facultad de Ciencias Médicas Isla de la Juventud. Clínica Estomatológica Docente "José Lázaro Fonseca López del Castillo". Isla de la Juventud, Cuba.
[3]Facultad de Ciencias Médicas Isla de la Juventud. Policlínico Docente Universitario "Leonilda Tamayo Matos". Isla de la Juventud, Cuba.
[4]Facultad de Ciencias Médicas Isla de la Juventud. Policlínico Docente Universitario "Orestes Falls Oñate". Isla de la Juventud, Cuba.

Cite as
Céspedes-Proenza I, La-O-Rojas Y, García-Bacallao Y, Leyva-Samuel L, Padín-Gámez Y, Crispin-Rodríguez D. Educational intervention on oral cancer in high-risk patients over 35 years of age. SAP Community and Interculturality in Dialogue. 2024; 4:127. https://doi.org/10.56294/cid2024127

Publication History
Submitted: 11-10-2023
Revised: 26-12-2023
Accepted: 16-02-2024
Published: 17-02-2024

Corresponding Author
Iraida Céspedes-Proenza

ABSTRACT

Introduction: oral cancer is one of the top ten locations of cancer incidence in the world, it is more common in men after 40 years of age.
Objective: to develop an educational intervention in patients over 35 years of age with a high risk of oral cancer.
Method: a quasi-experimental educational intervention study was carried out in office 28 belonging to the "José Lázaro Fonseca López del Castillo" Teaching Stomatology Clinic, of the Isla de la Juventud Special Municipality, in the period 2020-2022. The study universe consisted of 1010 patients from the office, the population of 598 patients over 35 years of age and the sample of 156 patients at high risk of suffering from oral cancer.
Results: in the sample, the age group of 45 to 55 years predominated for 35,9 % and light skin color for 67,9 %, with equality regarding sex. The main risk factors found were poor oral hygiene, smoking and traumatic irritants, achieving a decrease in their prevalence after the intervention.
Conclusions: it was possible to considerably modify the risk factors, the protective factors and the high risk of suffering from oral cancer, so the educational intervention applied had a positive impact.

Keywords: Educational Intervention; Oral Cancer; High Risk.

RESUMEN

Introducción: el cáncer bucal constituye una de las diez primeras localizaciones de incidencia de cáncer en el mundo, es más frecuente en hombres después de los 40 años.
Objetivo: desarrollar una intervención educativa en pacientes mayores de 35 años con alto riesgo de padecer cáncer bucal.
Método: se realizó un estudio cuasi-experimental de intervención educativa en el consultorio 28 perteneciente a la Clínica Estomatológica Docente "José Lázaro Fonseca López del Castillo", del Municipio Especial Isla de la Juventud, en el período 2020-2022. El universo de estudio estuvo constituido por 1010 pacientes del consultorio, la población por 598 pacientes mayores de 35 años y la muestra por 156 pacientes con alto riesgo a padecer cáncer bucal.
Resultados: en la muestra predominó el grupo etario de 45 a 55 años para un 35,9 % y el color de piel clara para un 67,9 %, existiendo una igualdad con respecto al sexo. Los principales factores de riesgo encontrados fueron la deficiente higiene bucal, el tabaquismo y los irritantes traumáticos, logrando una disminución de su prevalencia después de la intervención.
Conclusiones: se logró modificar considerablemente los factores de riesgo, los factores protectores y el alto riesgo a padecer cáncer bucal, por lo que la intervención educativa aplicada tuvo un impacto positivo.

Palabras clave: Intervención Educativa; Cáncer Bucal; Alto riesgo.

© 2024; The Authors. This Open access article is distributed under the Creative Commons Attribution 4.0 license (https://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Cancer is the uncontrolled growth of abnormal cells that can invade and destroy healthy tissues. In the oral cavity, there are a series of lesions and conditions that, due to their characteristics, favor the appearance of oral cancer. Knowledge of these pathologies and the systematic mouth examination will facilitate early diagnosis and appropriate treatment to prevent cancerous lesions.[1]

A risk factor is any circumstance or situation that increases a person's chances of contracting a disease or other health problem. Combining two or more factors increases the probability of developing the disease. An adequate level of knowledge about the factors that cause oral cancer contributes to its prevention.[2]

Every year, 9 000 000 people worldwide fall ill with cancer, and about 5 000 000 die from it. It is currently estimated that there are about 14 000 000 cancer patients; being the second leading cause of death worldwide and the second leading cause of death in our country, only surpassed by heart disease.[1]

Oral cancer is one of the top ten cancer incidence sites in the world and includes malignant lesions of the lip, oral cavity, and oropharynx; it is more frequent in men, with a higher incidence after the age of 40, regardless of geographical area.[3]

Oral cancer is detected in 30,000 Americans each year, and within five years, only 50 % of these people will be alive. About 13,000 people in the United States die of head and neck cancer, and about 55,000 develop the disease each year, according to the American Academy of Otolaryngology-Head and Neck Surgery. In Colombia, it represents 3 %, while in Brazil, it occupies the third place in frequency.[4]

In Cuba, oral cancer ranks sixth among all locations of neoplasms. [5] In 2017, the crude rate of lip, oral cavity, and pharynx cancer in both sexes was 7,4 per 100,000 inhabitants, where it ranked fifth among the top ten locations.

Taking into account the statistics presented in the Statistical Yearbook of Cuba, in 2019, there were 828 deaths from oral cancer in the country. [6] In the Special Municipality Isla de la Juventud, in a study conducted on the characterization of oral cancer in the period from 2007 to 2018 by Diéguez Pérez and collaborators, the most affected age group was 60 years and older with 38 patients for 55,9 %, with the male sex being predominant with 46 patients for 67,6 %. The highest incidence was in 2013, with 11 cases for 16,1 %, followed by 2016 with 10 cases representing 14,7 %.[7]

The above reveals the existence of a contradiction because, despite the existence of a Program for Early Detection of Oral Cancer (PDCB) in Cuba, there is still a high prevalence of the disease; therefore, the following scientific problem was posed: how to prevent the occurrence of oral cancer in patients over 35 years of age with high risk belonging to office 28 of the "José Lázaro Fonseca López del Castillo" Teaching Stomatology Clinic?

The objective of the research was to develop an educational intervention in patients over 35 years of age with a high risk of suffering from oral cancer in Office 28.

METHOD

A quasi-experimental study of educational intervention was carried out in office 28 belonging to the "José Lázaro Fonseca López del Castillo" Teaching Stomatology Clinic in the Special Municipality of Isla de la Juventud, in the period 2020-2022. The study universe was comprised of 1010 patients of clinic 28; the population consisted of 598 patients older than 35 years old, and the sample was 156 patients with a high risk of suffering oral cancer, being the same intentionally.

The research was divided into three stages: diagnosis, execution, and evaluation.

Diagnostic stage: With prior informed consent, a face-to-face interview was conducted individually with the sample under study to identify risk factors. After obtaining the above information on risk factors and protective factors, the Risk Scale and a knowledge survey on oral cancer were applied before and after the intervention.

Execution stage: Once the initial information was obtained, the multimedia on oral cancer was applied to provide information pleasantly and simply, allowing for a spoken presentation of various topics.

Evaluation stage: The same procedure and techniques of the diagnostic stage were repeated once the multimedia was finished, and the results of the behavior in this stage allowed a qualitative and quantitative evaluation concerning the initial stage, the risk of suffering oral cancer, and the level of knowledge before and after the intervention were evaluated based on this period.

Variables: level of risk for oral cancer, age groups, sex, skin color, risk factors, protective factors of the oral cavity, level of knowledge about oral cancer, probability of risk for oral cancer.

RESULTS

In the population studied, there was a predominance of low risk for oral cancer represented by 442 patients for 73,9 % but with a significant representation of 156 patients with high risk for oral cancer that made up the study sample (table 1).

Table 1. Distribution of the population according to the risk of oral cancer in those older than 35 years belonging to clinic 28

Risk level for oral cancer	Patients over 35 years old	
	No	%
High	156	26,1
Low	442	73,9
Total	598	100

https://doi.org/10.56294/cid2024127

The age group of 46 to 55 years predominated with 56 patients (35,9 %), with equal sex ratios (table 2).

Table 2. Distribution of the sample according to sex and age

Age groups	Masculine		Feminine		Total	
	No	%	No	%	No	%
35-45	17	10,9	17	10,9	34	21,8
46-55	28	17,9	28	17,9	56	35,9
56-65	13	8,3	18	11,5	31	19,9
66-75	15	9,6	10	6,4	25	16
76+	5	3,2	5	3,2	10	6,4
Total	78	50	78	50	156	100

Light skin color prevailed with 106 patients for 67,9 % (table 3).

Table 3. Distribution of the sample according to skin color

Skin color	No	%
Light	106	67,9
Dark	50	32,1

El riesgo al que más estuvo expuesta la muestra antes de la intervención fue la higiene bucal deficiente con un 71,2 %, predominando en el sexo masculino con 56 pacientes para un 35,9 %. En segundo lugar, prevaleció el tabaquismo afectando al 59 % de la muestra. Luego de la intervención se disminuyeron todos los factores de riesgo detectados inicialmente (tabla 4).

Table 4. Distribution of the sample according to risk factors and sex

Risk Factors	Before the intervention						After the intervention					
	Feminine		Masculine		Total		Femenine		Masculine		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Smoking	51	32,7	41	26,3	92	59	48	30,8	40	25,6	88	56,4
Alcoholism	7	4,5	15	9,6	22	14,1	4	2,6	10	6,4	14	9
Poor oral hygiene	45	28,8	56	35,9	**111**	71,2	12	7,7	18	11,5	30	19,2
Thermal irritants	35	22,4	48	30,8	83	53,2	11	7,1	26	16,7	37	23,7
Traumatic irritants	41	26,3	44	28,2	85	54,5	22	14,1	27	17,3	49	31,4

According to the protective factors of the oral cavity, the most practiced before the intervention was oral self-care (41,7 %) for both sexes, followed by an antioxidant diet (32,7 %). After the intervention, oral self-care (87,2 %) and frequent visits to the stomatologist (66 %) predominated (table 5).

Table 5. Distribution of the sample according to oral cavity protective factors.

Protective factors of the oral cavity	Before the intervention						After the intervention					
	Femenine		Masculine		Total		Femenine		Masculine		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Frequent visits to the Stomatologist	34	21,8	11	7,1	45	28,8	57	36,5	46	29,5	103	66
Oral self-care	37	23,7	28	17,9	65	41,7	71	45,5	65	41,7	136	87,2
Antioxidant diet	29	18.6	22	14,1	51	32,7	45	28,8	38	24,4	83	53,2

A high level of knowledge prevailed in 45,5 % of the sample before the educational intervention, rising to 91 % after the intervention was implemented (table 6).

Antes de la intervención predominó el alto riesgo de cáncer de cavidad bucal con un 58,3 %, el sexo masculino fue el más propenso a padecer la enfermedad con un 32,1 %. Después de la intervención educativa prevaleció el bajo riesgo de cáncer bucal con un 70,5 % (tabla 7).

Table 6. Distribution of the sample according to level of knowledge

Level of knowledge about oral cancer	Before the intervention						After the intervention					
	Femenine		Masculine		Total		Femenine		Masculine		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
High	39	25	32	20,5	71	45,5	70	44,9	60	38,5	142	91
Medium	22	14,1	27	17,3	49	31,4	6	3,8	11	7	9	5,8
Low	17	10,9	19	10,9	36	23,1	2	1,3	7	4,5	5	3,2
Total	78	50	78	50	156	100	78	50	78	50	156	100

Table 7. Distribution of patients according to individual risk probability

Probability of risk for oral cancer	Before the intervention						After the intervention					
	Femenine		Masculine		Total		Femenine		Masculine		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
High Risk oral cavity	41	26,3	50	32,1	91	58,3	17	10,9	23	14,7	40	25,6
High Risk lip	27	17,3	38	24,4	65	41,7	0	0	6	3,8	6	3,8
Low Risk	0	0	0	0	0	0	61	39,1	49	31,4	110	70,5
Total	68	43,6	88	56,5	156	100	78	50	78	50	156	100

DISCUSSION

The sample of high-risk patients was sufficiently high to develop this research, considering that 40 % of them may develop oral cancer at some point in their lives.

These results are related to the high presence of risk factors, which, together with the non-compliance of the protective factors of the oral cavity, leave patients with a high risk of developing oral cancer. Generally speaking, applying the scale should be a routine procedure, together with questioning and physical examination.

Advanced age is an essential marker in the origin of all tumors affecting men. A study conducted by Dr. Perez-Reyes [8] shows similar results where the largest age group was 35 to 59 years, represented by 55 %, constituting the standard group for monitoring the health status of adults. However, this did not coincide with the study by Gonzalez et al. [9], where the age group of 60 to 70 years predominated.

According to sex, the same percentage was observed in both results regarding the generic distribution that does not coincide with those of Dr. Navarro-Rodríguez[10], where females predominated with 73,5 %. The research developed by García et al. [11] does not coincide with the results either, as the female sex was predominant.

In the case of white skin, it is known to have a greater vulnerability to dermatological cancer and, therefore, lip cancer since fair skin does not contain sufficient protective melanin for solar radiation. In the study sample, there was a higher prevalence of fair skin, which coincides with the work done by Gonzalez-Federico[12], where white skin color predominated in 94 % of the population.

Deficient oral hygiene is a significant risk factor; a study by Durades-Ruíz[13] obtained similar results, showing that 56 % of the patients had deficient oral hygiene before the intervention, which was reduced to 5 % after the intervention. In another study, the modification of oral hygiene was evaluated after an intervention of this type, as is the case of Rodriguez-Calzadilla [14], where 14,0 % had an adequate hygiene index at the beginning; at the end, this rose to 72,0 %.

Duharte-Lisimón [15], when assessing this modification after having applied his techniques, found that 60 % initially had an inadequate hygiene condition and that after the educational work, 77,5 % showed adequate oral hygiene. Similar results were obtained by Ayala-Perez [16], who found that deficient oral hygiene prevailed before the intervention, and after the intervention, adequate hygiene prevailed in 68,8 %. In Isla de la Juventud, in the study conducted by Dr. Raquel Cuba Peña [17], it was observed that before the intervention, there was an index of deficient oral hygiene of 61,2 %, then the effectiveness of the program was demonstrated, raising the efficient oral hygiene to 81,3 % of the population studied.

In the present study, smoking was the second risk factor that predominated before the educational intervention, coinciding with the study conducted by Dr. Juan Carlos Quintana Díaz. [18]

Self-care is a protective factor manifested through daily and frequent brushing, mastery of oral self-examination, and regular visits to the stomatologist. At the same time, the repeated consumption of fruits and vegetables contributes to providing antioxidant elements that prevent malignant neoplasms of the mouth; these are aspects that should be emphasized to reduce the occurrence of oral and lip cancer.

This result coincides with that obtained by Maturell-Varona [19], where the knowledge about oral self-examination was positively modified. It also coincides with the results obtained in the study of Rodriguez-Gonzalez[14], where the level of knowledge about protective factors, the mastery of oral self-examination, and periodic oral check-ups to prevent oral cancer were very low before the intervention and increased considerably afterward.

In the sample under study, the high level of knowledge prevailed with 45,5 %, which shows that, although many of the patients

knew, they did not apply it in daily practice. The authors consider that this is because the cognitive component only represents a link in the process of behavioral change; the individual must develop an adequate perception of risk, which was achieved with the educational intervention applied. After the intervention, 91 % ended up with a high level of knowledge and a considerable decrease in the risk of suffering from oral cancer when the lifestyle, risk factors, and protective factors were modified.

In the study carried out by Pérez-Reyes[8], there is a favorable increase in the level of knowledge of Health Education of the population in general, where an increase in the number of people with an adequate level of knowledge is observed concerning the initial study, rising from 58,7 % to 70 %. It also coincides with Ramos-Francisco[20], where the educational intervention improved tobacco workers' knowledge about oral cancer. It differs with Gonzalez-Federico[21], where 62,6 % of the patients presented an inadequate level, and only 6 % could be increased to an adequate level; with Dr. Mendoza-Fernandez and Dr. Ordaz-Gonzalez [22] and Dr. Garcia-Heredia, [23] reporting that more than 70 % of the patients surveyed were rated poorly, which shows the low knowledge about oral cancer prevention, signs, and symptoms and self-examination. It also agrees with other studies where the level of knowledge initially found was positively raised.[24-27]

Oral cancer is the only known oral disease that has an impact on mortality in the population. According to Duharte-Lisimón [15], 16,5 % of older adults were at high risk of developing oral cancer, while 12,6 % were at high risk of developing lip cancer, with the male sex being the most prone to the disease. After the intervention, the risk of developing oral cancer changed significantly as only 5,6 % were at high risk for the oral cavity and 3,8 % for the lip; the majority of the sample ended up with a low risk of 70,5 %.

Oral health promotion strategies and research on oral health knowledge, beliefs, and attitudes are the way to produce favorable changes in oral health, which improves the quality of life of patients, their families, and the community.

CONCLUSIONS

The sample was dominated by the 46-55 years age group, with light skin color, and there was equality concerning sex. The main risk factors were poor oral hygiene, smoking, and traumatic irritants, which were modified after the intervention. Protective factors were not met, which was favorably modified after the intervention. A high level of knowledge predominated before and after the intervention. Before the intervention, the high risk of oral cavity cancer prevailed, and after the intervention, the low risk prevailed, so the applied educational intervention had a positive impact.

FINANCING

No external financing.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHORSHIP CONTRIBUTION

Conceptualization: Iraida Céspedes-Proenza, Yarilín La-O-Rojas, Yanelilian Padín-Gámez.

Research: Iraida Céspedes-Proenza, Yarilín La-O-Rojas, Yusdelkys García-Bacallao, Ladisleny Leyva-Samuel, Yanelilian Padín-Gámez, Douglas Crispín-Rodríguez.

Data curation: Yarilín La-O-Rojas, Yanelilian Padín-Gámez, Douglas Crispín-Rodríguez.

Formal analysis: Iraida Céspedes-Proenza, Yusdelkys García-Bacallao, Ladisleny Leyva-Samuel.

Methodology: Iraida Céspedes-Proenza, Ladisleny Leyva-Samuel.

Writing - original draft: Yarilín La-O-Rojas.

Writing - revision and editing: Iraida Céspedes-Proenza.

BIBLIOGRAPHIC REFERENCES

1. Instituto Nacional del Cáncer. Cáncer bucal. Estados Unidos; 2017. https://www.cancer.gov/espanol

2. Leal-Rodríguez M, Serrano-García L, Vinardell-Almira L, Perez-García L. Consideraciones actuales sobre los factores de riesgo de cáncer bucal. Archivos del Hospital Universitario "General Calixto García". 2020; 8(2). http://www.revcalixto.sld.cu/index.php/ahcg/article/view/501

3. Tamayo-Cabeza G, Madera-Anaya M, González-Martinez F. El cáncer bucal y su relación con la proteína translocadora mitocondrial de 18kda. CES odontol 2017; 30(1): 17-29. http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-971X2017000100003&lng=en.

4. García-San-Juan CM, Salas-Rodríguez M, Gil-Milá J. Algunas consideraciones sobre etiología y fisiopatogenia del carcinoma epidermoide bucal. Medisur 2018; 16(1). http://www.medisur.sld.cu/index.php/medisur/article/view/3804/2495

5. Hermida-Rojas M. Escala de riesgo para predecir el cáncer bucal. La Habana: Instituto Superior de Ciencias Médicas de La Habana, Facultad de Estomatología "Raúl González Sánchez"; 2007. http://tesis.repo.sld.cu/202/1/Hermida_Rojas.pdf

6. Saldívar-Abreu RE. Intervención educativa sobre factores de riesgo del cáncer bucal. [Tesis]. Universidad de

Ciencias Médicas Holguín, Facultad de Ciencias Médicas "Mariana Grajales Coello"; 2020. https://tesis.hlg.sld.cu/index.php?P=FullRecord&ResourceId=1574

7. Diéguez-Pérez A, Correa-Rodríguez R, Fonseca-del-Rey S, Diéguez-Pérez L, Sardiña-Hernández Y, Cedeño-Gómez Y. Caracterización del cáncer bucal en la Isla de Juventud. 2007–2018. Rev Méd Isla de la Juventud 2019; 20(1). http://www.remij.sld.cu/index.php/remij/article/view/216

8. Pérez-Reyes YO, Ramírez-Abreu Y. Intervención educativa sobre factores de riesgos del cáncer bucal en el consultorio médico de familia pueblo IV. Revista Atlante: Cuadernos de Educación y Desarrollo 2019. https://www.eumed.net/rev/atlante/2019/11/intervencion-educativa-cancer.html

9. González-Crespo E, Martínez-Alonso L, Labrador-Falero DM. Intervención educativa sobre cáncer bucal en pacientes adultos mayores en Santa Inés, Venezuela. Rev Cienc Méd Pinar del Río 2021; 25(3). http://www.revcmpinar.sld.cu/index.php/publicaciones/article/view/4836

10. Navarro-Rodríguez T. Afecciones de la mucosa bucal. Comportamiento clínico en la sala de geriatría del Hospital General Docente Dr. Agostinho Neto 2001-2002. [Tesis]. Santiago de Cuba: Instituto Superior de Ciencias Médicas; 2003.

11. García-García AJ, González-Rodríguez CR, Carballido-Perdomo DR, Díaz-Águila HR. Plan de acciones para la prevención de las lesiones premalignas en la mucosa bucal de los adultos mayores. 2017. https://www.researchgate.net/publication/318381229_plan_de_acciones_para_la_prevencion_de_las_lesiones_premalignas_en_la_mucosa_bucal_de_los_adultos_mayores

12. Valentín-González F, Rodríguez-González GM, Conde-Suárez HF, Vila-Morales D. Caracterización del Cáncer Bucal. Estudio de 15 años. Rev Med Electrón 2017; 39(2): 245-258. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1684-18242017000200010&lng=es.

13. Durades-Ruiz Y. Programa de capacitación sobre la prevención del cáncer bucal, en el hogar de ancianos "Santa Catalina" del municipio Guantánamo. [Tesis]. Guantánamo: Universidad de Ciencias Médicas; 2009.

14. Rodríguez GM, Valentín GF, Conde HF. Nivel de conocimiento sobre cáncer bucal en un sector de la población. Rev Méd Electrón 2017; 39(2): 233-244.

15. Duharte-Lisimón J. Influencia de dos técnicas educativas en el conocimiento sobre salud bucal [Trabajo para optar por el título de especialista de I Grado en Periodontología]. Santiago de Cuba: Clínica Estomatológica Provincial; 1997.

16. Ayala-Pérez Y, Reyes-González I. Programa Educacional de Salud Bucodental aplicado a adolescentes del área de salud Alcides Pino. Correo científico médico de Holguín 2008; 12(2).

17. Cuba-Peña R. Intervención Educativa sobre salud bucodental en adolescentes. Filial de Ciencias Médicas, Isla de la Juventud. 2016–2017.

18. Quintana-Díaz JC, Fernández-Fregio MJ, Laborde-Ramos R. Factores de riesgo de lesiones premalignas y malignas bucales. Rev Cubana Estomatol 2004; 41(3). http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0034-75072004000300007&lng=es.

19. Maturell-Varona L, Cruz-Pérez J, Moya-Martínez J. Intervención educativa para elevar el nivel de información sobre cáncer bucal en adultos mayores. Progaleno 2022; 5(1). http://www.revprogaleno.sld.cu/index.php/progaleno/article/view/335

20. Ramos-Francisco YM, Calero-Barreto PA. Intervención educativa para modificar conocimientos sobre cáncer bucal en trabajadores de fábrica tabaco. Revista Caribeña de Ciencias Sociales 2019. https://www.eumed.net/rev/caribe/2019/01/cancer-bucal-trabajadores.html//hdl.handle.net/20.500.11763/caribe1901cancer-bucal-trabajadores

21. Valentín-González Federico. Estrategia de intervención educativa para aumentar la percepción del riesgo ante el cáncer bucal. [Tesis Doctoral]. Universidad de Ciencias Médicas de La Habana. 2015. http://repositorioslatinoamericanos.uchile.cl/handle/2250/140617

22. González-Ramos RM. Principales lesiones bucales y factores de riesgo presentes en la población mayor de 60 años. Rev. Cubana Estomatol 2010. http://scielo.sld.cu/scielo.php?pid=S0034-75072010000100009&script=sci_arttext&tlng=en.

23. García-Heredia GL, Miranda-Tarragó JD. Necesidades de aprendizaje relacionados con el cáncer bucal en un círculo de abuelos de Ciudad de La Habana. Rev Cubana Estomatol 2009; 46(4): 90-101. http://scielo.sld.cu/scielo.php?script=sci_

arttext&pid=S0034750720090004000009&lng=es

24. Montano-Silva RM, Matos-Arias S, Hernández-Álvarez D, Abraham-Millán Y, Ruiz-Salazar R. Community Oral Health Promotion: Evaluation of an Educational Intervention for the Prevention of Oral Cancer and Premalignant Lesions. Community and Interculturality in Dialogue. 2021; 1:19. https://doi.org/10.56294/cid202119

25. Montano-Silva RM, Padín-Gámez Y, Abraham-Millán Y, Ruiz-Salazar R, Leyva-Samuel L, Crispín-Rodríguez D. Community intervention on oral cancer in high risk patients. Community and Interculturality in Dialogue 2022; 2:37. https://doi.org/10.56294/cid202237

26. Montano-Silva RM, Fernández-Breffe T, Abraham-Millán Y, Céspedes-Proenza I, Pantoja-García E. «Tooth fairy» educational strategy for infants in the fifth year of life. Community and Interculturality in Dialogue 2023; 3:77. https://doi.org/10.56294/cid202377.

27. Mora-Pérez E, Robaina-Rivero ER, Blanco-Mederos FM, Fleitas-Echeverría D. intervención educativa sobre salud bucal en adulto mayor institucionalizado portador de prótesis. Anatomía Digital 2021; 4(1), 65-76. https://doi.org/10.33262/anatomiadigital.v4i1.1482