ORAL CANCER: VOICE AND QUALITY OF LIFE AFTER MUTILATION

Câncer bucal: voz e qualidade de vida pós mutilação

Cáncer oral: voz y calidad de vida después de la mutilación

Marta Regina Chaves Camilo Fernandes[1], Givaneide Oliveira de Andrade Luz[2], Cacilda Chaves Morais de Lima[3], Larissa Chaves Morais de Lima[4], Sérgio Ribeiro dos Santos[5], Inácia Sátiro Xavier de França[6]

ABSTRACT

Objective: to investigate the impact of oral cancer deformity on oral communication and the quality of life of adults and the elderly. **Methods**: descriptive, cross-sectional observational study with a mixed approach. Sample of 41 patients undergoing surgery to remove oral cancer, resulting in mutilation and verbal intelligibility. Instruments: Sociodemographic questionnaire; Voice Handicap Index; University of Washington Quality of Life Questionnaire; Semi-structured script for analysis in the Iramuteq® software. **Result:** mutilation predominated in the palate region. Vocal assessment showed the male sex with worse quality of life, significantly on the Social scale, while the female, Physical scale. Lexical analysis showed needs, frustrations and expectations. **Conclusion:** the study revealed shame, fear, social isolation and, at the same time, the hope of returning to at least being able to speak and be understood by other people through the use of the prosthesis.
DESCRIPTORS: Oral neoplasms; Mouth cancer; Oral rehabilitation; Speech intelligibility; Nursing.

RESUMO

Objetivo: investigar o impacto da deformidade bucal oncológica na comunicação oral e na qualidade de vida de adultos e idosos. **Métodos:** estudo observacional descritivo, transversal, com abordagem mista. Amostra de 41 pacientes submetidos à cirurgia para

1 Nursing Graduate. PhD student in Nursing at the Associate Graduate Nursing Program - PAPGENF of the University of Pernambuco / State University of Paraíba - UPE / UEPB. Recife (PE). Brazil.

2 Nursing Graduate. PhD student in Nursing at the Associate Graduate Program in Nursing - PAPGENF of the University of Pernambuco / State University of Paraíba - UPE / UEPB. Recife (PE). Brazil.

3 Odontology Graduate. Doctor in Gerontology. Responsible for the Oral and Maxillofacial Rehabilitation Service at Lauro Wanderley University Hospital - HULW/UFPB. Professor of Oral and Maxillofacial Prosthesis of the Technical School of Health of the Federal University of Paraíba - ETS/UFPB. João Pessoa (PB). Brazil.

4 Odontology Graduate. PhD student in Dentistry at the Graduate Program in Dentistry - PPGO of the State University of Paraíba - UEPB. Campina Grande (PB). Brazil.

5 Nursing Graduate. PhD in Health Sciences from Universidade Federal da Paraíba - UFPB. Full Professor of the Clinical Nursing Department of the Universidade Federal da Paraíba - PPGENF - UFPB. João Pessoa (PB). Brazil.

6 Nursing Graduate. PhD in Nursing from Universidade Federal do Ceará - UFC. Professor of the Associate Graduate Program in Nursing - PAPGENF of the University of Pernambuco / State University of Paraíba - UPE / UEPB. Campina Grande (PB). Brazil.

DOI: 10.9789/2175-5361.rpcfo.v13.9978 | Fernandes MRCC, Luz GOA, Lima CCM, et al. | Oral cancer: voice and quality of life after mutilation

R. pesq.: cuid. fundam. online 2021 jan/dez 13: 1082-1088

UNIRIO
Universidade Federal do
Estado do Rio de Janeiro

Doutorado
PPgEnfBio

MESTRADO EM ENFERMAGEM
PPGENF
UNIVERSIDADE FEDERAL DO ESTADO DO RIO DE JANEIRO

1082

retirada do câncer bucal, resultando em mutilação e inteligibilidade verbal. Instrumentos: Questionário sociodemográfico; Índice de Desvantagem Vocal; Questionário Qualidade de Vida da Universidade de Washington; Roteiro Semiestruturado para análise no software Iramuteq®. **Resultado:** a mutilação predominou em região de palato. Avaliação vocal mostrou o sexo masculino com pior qualidade de vida, expressivamente escala Social, enquanto, o feminino, escala Física. A análise lexical mostrou necessidades, frustrações e expectativas. **Conclusão:** o estudo revelou a vergonha, o medo, o isolamento social e, ao mesmo tempo, a esperança de voltar a, pelo menos, poder falar e ser compreendido pelas outras pessoas através do uso da prótese.

DESCRITORES: Neoplasias bucais; Câncer de boca; Reabilitação bucal; Inteligibilidade da fala; Enfermagem.

RESUMEN

Objetivo: investigar el impacto de la deformidad del cáncer oral en la comunicación oral y la calidad de vida de adultos y ancianos. **Métodos:** estudio observacional descriptivo, transversal con enfoque mixto. Muestra de 41 pacientes sometidos a cirugía para extirpar el cáncer oral, lo que resulta en mutilación e inteligibilidad verbal. Instrumentos: cuestionario sociodemográfico; Índice de discapacidad de voz; Cuestionario de calidad de vida de la Universidad de Washington; Guión semiestructurado para análisis en el software Iramuteq®. **Resultado:** la mutilación predominó en la región del paladar. La evaluación vocal mostró el sexo masculino con peor calidad de vida, significativamente en la escala social, mientras que la hembra, la escala física. El análisis léxico mostró necesidades, frustraciones y expectativas. **Conclusión:** el estudio reveló vergüenza, miedo, aislamiento social y, al mismo tiempo, la esperanza de volver al menos a poder hablar y ser entendido por otras personas mediante el uso de la prótesis.

DESCRIPTORES: Neoplasias orales; Cáncer de boca; Rehabilitación oral; Inteligibilidad del habla; Enfermería

INTRODUCTION

In Brazil, cancer with primary location in the oral cavity ranks 5th in the incidence list among men and 12th in women, and is undoubtedly a public health problem.[1-2]

Most patients have a diagnosis established in the advanced or metastatic phase of the disease, which, added to the aggressiveness of the tumor itself, makes treatment difficult and significantly worsens the prognosis.[2] In recent years, a concern with the quality of life and well-being during and after the treatment of these individuals has been established, factors that will depend on efficient multidisciplinary monitoring throughout the rehabilitation process.

The treatment, for these patients, usually involves surgery to remove an oral malignant tumor, which can lead to the deformity with serious damage in functions: chewing, swallowing and phonetics, as well as in interpersonal relationships, both social and family.[3-4]

Corroborating this context, some authors point out oral communication between human beings as being necessary to establish contact with the other and with the world through the exteriorization of feelings and thoughts.[5] Thus, when the oral communication process is compromised and speech intelligibility is reduced, people with oral and maxillofacial deformities suffer psychological changes that can contribute to social isolation.

Therefore, rehabilitation through intra- and extraoral prostheses in these patients can provide an improvement in quality of life, from the reversal of the isolation condition and the difficulty of oral communication. However, the symbiotic relationship[6] between man and machine (the prostheses) will depend on the success in the rehabilitation process

The physical and psychological rehabilitation of these patients, their family, social and occupational adjustment depend on the work of a multiprofessional team. The nurse, together with the other members of this team, develops activities that allow the exchange of knowledge, systematizing information and actions that complement each other, aiming at the reintegration of these patients into society, thus enabling a better quality of life.

In this sense, the study aimed to investigate the impact of oral cancer deformity on oral communication and quality of life of adults and the elderly.

METHOD

This is a cross-sectional observational study of the descriptive type, with a mixed approach, developed in reference hospitals in a Oral and Maxillofacial Rehabilitation service, in two capitals in the Northeast of Brazil.

The study population was individuals diagnosed with oral cavity cancer who underwent a surgical procedure to remove the tumor and, as a result, the oral deformity and difficulty in speech intelligibility. Period for data collection - 06/01/2017 to 11/30/2017 - the sample consisted of 41 patients, aged 18 years or older, in conditions to answer the data collection instruments.

Four patients who were unable to respond to the data collection instruments were excluded from the study, and two because they were laryngectomized.

The research data were collected 30 days after the surgery to remove the tumor, from the application of the instruments: Sociodemographic questionnaire; Vocal Disadvantage Index (VDI) protocol which meets the precepts of vocal quality, in terms of monitoring the impact that dysphonia causes in the emotional and physical spheres, as well as in the daily activities of the individual. The greater a result in this protocol, the greater the vocal disadvantage.

For quality of life assessment, the instrument developed for head and neck cancer patients University of Washington Quality of Life Questionnaire (UW-QOL v4) was applied.

These instruments have been validated for use in research in the Brazilian context.

The Semi-structured Screenplay with open questions was also applied - it speaks in text format for lexical analysis through the software Iramuteq® that uses the applicability of Zipf's Law.[7] This Law works with the frequency of appearance of a word in a text, regardless of what this symbology represents alone or together.[8]

The research project was submitted to and approved by the Research Ethics Committee of the Proposing Institution, under Certificate of Presentation for Ethical Appreciation (CAAE) number 53990416.8.0000.5183 and by the Coparticipating Institution, under CAAE number 53990416.8.3001.5205.

RESULTS AND DISCUSSION

The sociodemographic aspect presented a sample (n=41) consisting, in its majority, of male gender, 23 (56%) people, 15 people (36.6%) with age range between 51 and 60 years, and 26 (63.4%) who declared themselves brown.

The predominant level of schooling, primary schooling, signalled a low level of education, with 19 people (46.3%). It was also observed that the majority 29 (70.8%) reported family income between one and two minimum wages.

The deleterious habits characterized 34 people (82.9%) who claimed to be smokers or had smoked, and 27 people (65.9%) had been alcoholics.

The histopathological diagnosis found a greater predominance of Squamous Cell Carcinoma in 38 participants (92.7%). The palate was the most affected location, with 30 participants (73.1%). It was also found that more than eighty percent of the sample received treatment that included surgery, radiotherapy and/or chemotherapy.

The VDI Protocol, presented in Table 1, does not register significant differences (p > 0.05) between the sexes, measured in the domains: emotional, functional and organic.

Table 1 - Distribution of means and standard deviation of the IDV Protocol responses, in the emotional, functional and organic domains, by gender of participants. Recife, PE, Brazil, 2017

VDI	Male Average ± SD Median (P25; P75)	Female Average ± SD Median (P25; P75)	p* value
Emotional	17,89 ± 9,92	17,52 ± 9,83	p = 0,906
	20,00 (12,75; 25,25)	18,00 (8,00; 25,00)	
Functional	20,83 ± 10,07	24,35 ± 9,24	p = 0,252
	22,00 (14,00; 27,00)	24,00 (17,00; 32,00)	
Organic	12,61 ± 7,95	13,22 ± 8,99	p = 0,823
	15,00 (6,00; 17,00)	15,00 (4,00; 19,00)	
Total	51,33 ± 25,02	55,09 ± 24,21	p = 0,630
	56,50 (35,50; 71,25)	54,00 (30,00; 75,00)	

Source: Survey data (2017)
*Through the t-Student test with equal variances.

Table 2 presents a sample in the simple frequency and percentage related to quality of life using the UW-QOL v4 instrument. The responses, compared to the month prior to the diagnosis of Cancer, 14 (34%) stated to be much worse, while four (10%) believed to be much better. In the health variable, in the last seven days, 25 (61%) believed to be bad or average. When considering general health, including physical and mental health, family, friends, and spirituality, 27 (66%) rated it average or bad.

Table 2 - Distribution of the sample in simple frequency and percentage related to quality of life, through the instrument UW-QOL v4 (Washington). Recife, PE, Brazil, 2017.

Variable	N	%
TOTAL	**41**	**100,0**
How do you rate your quality of life compared to the month before you develop cancer		
Much better	4	10
A little better	5	12
More or less	9	22
A little worse	9	22
Much worse	14	34

Variable	N	%
How do you rate your health-related quality of life in the past 7 days		
Excellent	3	7,3
Very good	4	9,8
Good	7	17,1
Average	13	31,7
Bad	12	29,3
Very bad	2	4,9
How do you rate your quality of life in general		
Excellent	1	2,4
Very good	3	7,3
Good	8	19,5
Average	18	43,9
Bad	9	22,0
Very bad	2	4,9

Source: Survey data (2017)

The answers to the questions in the Semi-structured Script were put in text set format (corpus) and represented in tag cloud (word cloud) in Figures 1 and 2.

Text 1 - How do you perceive your mouth deformity? Represented in Figure 1, a total of 1,132 words was obtained and, from these, 225 (20%) were extracted, as they are considered of representative value for research.

Figure 1 - Word cloud from Text 1 - How do you perceive your mouth deformity? Recife, PE, Brazil, 2017

Source: prepared by the author (2017)

In the first sphere, the words 'Hole' and 'Mouth' stand out, which have a frequency of 11 and 10 times, respectively, followed by the words 'Illness', 'Voice' and 'Ugly', which appear eight, seven and seven times, respectively. It is noticeable the importance that these terms have within their scope, since they are correlated to the title of the research.

Other words that appear expressively are the verbs 'To speak' and 'To die', both with six repetitions, followed by the word 'Sad', often five times. Linked to these terms, the word 'Fear' is raised as an emotional state resulting from the awareness of danger or threat, real, hypothetical or imaginary, or even present feeling that has meaning of concern about a certain fact or a certain possibility, according to the Dicionário Priberam de Língua Portuguesa.

Text 2 - What do you expect from treatment to solve your problem? A total of 869 words were obtained, with 195 (22.5%) terms being extracted. In the first sphere, the terms 'Eat' and 'Speak' both with 11 repetitions. However, if you consider the terms 'Voice', 'Speak' and 'Conversation', often three, two and one respectively, you would add 17 occurrences for the verb 'Speak', leaving it in a position of evidence.

In the second sphere, the term 'Prosthesis' is raised, with eight repetitions. However, if one considers the terms 'plate' and 'piece', because it refers to the same object, with a frequency of three and two, respectively, it would reach a total of 13 occurrences, which would promote it to the first sphere.

Other terms that emerge less expressively are 'God' and 'Jesus', with seven and two repetitions respectively. If we consider both terms as a single word, totaling nine occurrences, it becomes expressive and is promoted to the second sphere.
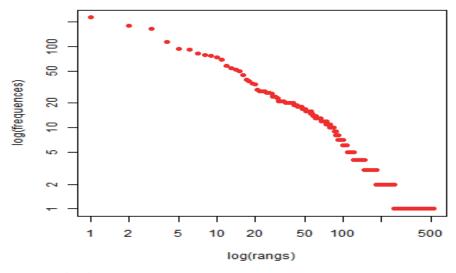
Text 3 - What are your perspectives regarding the rehabilitation of oral communication? It obtained a total of 888 words, being extracted 179 (20%) terms with meaning value to the research. It is notorious, in the first sphere, the term 'To speak' with 13 repetitions, followed by the word 'To eat', with seven occurrences. In an analysis of words that establish even semantic power to the term 'Speaking', located in the second and third spheres, the connection between 'talking', 'speaking' and 'communicating' is noticeable, with three, two, one and one repetitions, respectively. Such a fact would raise this term to 20 occurrences, thus making its importance in the speech of individuals even more evident.

Text 4 - How can Nursing contribute to your rehabilitation of oral communication? - showed lower quantitative value of terms. The written production presented a total of 686 words, from which 144 (21%) terms were extracted. The words 'Good' and 'No' had a higher occurrence, both often seven and therefore positioned in the first sphere.

The terms 'Nurses' and 'Nurse', located in the first sphere, in the order of three and four, respectively, deserve highlighting in this text. These words had different repetitions, however, if considered as a single word, excluding the plural, it would add seven repetitions, which would raise it to the first order.

In the Textual Statistical analysis, 743 words were presented after the lexical refinement with the removal of the words with less semantic meaning for the study. Figure 2 presented by the software is based on Zipf's Law which measures the frequencies of a given word in the text. Zipf's diagram illustrates the distribution of this frequency of words in the corpus versus rang, where it shows that many words repeat little while few words repeat much.

Figure 2 - Zipf diagram. Recife, PE, Brazil, 2017

Source: Prepared by the author (2017)

The Descending Hierarchical Classification (DHC), presented by the software, classifies the text segments (corpus) according to their respective vocabularies, and all of them have been broken down based on the frequency of the reduced forms (words already lematized). From this analysis, the Elementary Context Units (ECU) classes were obtained, which, at the same time, presented similar vocabulary among themselves and different vocabulary from the ECUs of the other classes.
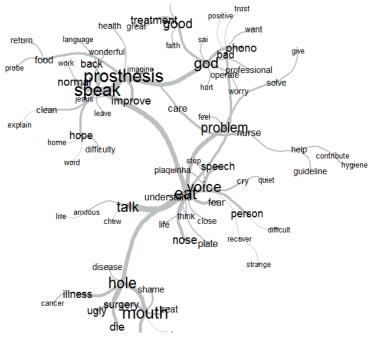
At first, the corpus was divided into two subcorpus through the DHC, establishing eight classes of distinct text segments. At the second moment, a subcorpus was divided into two, originating classes six and one. At the third moment, there are more participations, originating classes eight, seven, three and two. The DHC did not present more word classes, because the eight classes were stable, that is, composed of units of text segments with similar words.

The result of factor analysis of correspondence made from the DHC (Post-Factorial Analysis) showed the different words and variables associated to each of the classes of DHC. The interface made it possible to recover, in the original corpus, the text segments associated to each class, when the context of statistically significant words was obtained.

According to the cooccurrence tree of the similarity analysis presented in Figure 3, the results indicated that the problems faced by the participants of the study, to which they are exposed, are: 1 - not being able to speak; 2 - not being able to eat. However, there is hope of getting well, or rather, when they start using oral prosthesis.

Figure 3 - Result of the similarity analysis. Recife, PE, Brazil, 2017

Source: Prepared by the author (2017)

In Brazil, there is a cultural mark, which leads to the absence, in a general way, of the male population in the health service for the prevention of diseases, as shown by the predominance of the male sex in this research corroborating estimates presented by other studies.[1-2]

The significant presence of brown color in research subjects disagrees with other studies, in which the predominance of white color is highlighted.[9] Perhaps because it is a research developed in a region of the country, where, according to the National Household Sample Survey[10], it reveals that, on the criterion of color or race, most of the population living in northeastern Brazil is made up of black and brown individuals, substantiating the findings in this study

It is noted that most of the sample appears between 51 and 70 years, according to previous surveys[11-12,2], which highlight an increase in the number of cases diagnosed with oral cancer in this age group, especially in the male population.

The association between the diagnosis of oral cancer and the low level of education found in this study, mostly between primary school and illiterate, can be justified by other authors[11] in which they point out that the low level of education can hinder the awareness of health care needs throughout life. The predominance of low family income is also associated, in which the disease appears in clinical and epidemiological studies, with more prevalence in a population with low economic resources. Therefore, it is essential to emphasize that the low level of schooling and the scarce family income can be considered factors that negatively propitiate the increased risk of oral cancer.

It is also important to point out that most of them have been abusing alcohol and cigarettes for several years, which reiterates the proven association of these habits with oral cancer.[13-15] These drugs, associated or not, interfere negatively in the quality of life of these individuals.

The study identified Squamous Cell Carcinoma (SCC) (92.7% of the sample) present in the histopathological diagnosis. The location of the tumor, on the palate, is in 73% of the cases, which corroborates studies by Vergo and Andrews, cited by Goiato[16], when they state that this region is quite affected, being responsible for the fourth placement in all types of head and neck cancer.

Surgery associated with radiotherapy (RT) was the therapeutic modality indicated in 49% of the individuals, and the association with chemotherapy (QT) was found in 37% of the sample. These data are in agreement with research by Dedivitis et al., quoted by Goiato[16], when they found that patients diagnosed with oral OHC, 47% had undergone surgery and RT.

After surgery to remove the tumor, these individuals found that they had permanent sequelae (oral and nasal communication), resulting in poorly understandable speech.

In the evaluation of the IDV instrument, for the Organic scale, the questions that presented the highest score were: "People ask: 'What do you have in your voice? '" and "I make a lot of effort to speak. In the Functional domain, the highest score was for the questions "People have difficulty hearing me because of my voice" and "People have difficulty understanding me in noisy places". On the Emotional scale, the highest score

was for the issues "My voice problem pisses me off", "I became less expansive because of my voice problem" and "My voice makes me feel disadvantaged". This result was similar for both genders, corroborating other studies[17] , which used the same protocol to evaluate dysphonic patients.

The analysis of the UW-QOL v4 instrument identified similarities and differences between the sexes, making it possible to observe that males had worse Global Quality of Life (GQL). However, for both sexes, QLQ was more expressive in 'much worse' at the time of the interview, compared to the month before the diagnosis of cancer. However, when asked how they rated the quality of life in general, during the last seven days, 63% considered between 'good' and 'average', a fact explained when they reported the suffering present from the discovery of the diagnosis, also going through the phases of different treatment modalities that included surgery, RT, QT and/or association of these.

For the male gender, the expressive difference occurred in the Social scale, while for the female, the Physical scale became more evident. This finding corroborates the theory of emotions[18] that identified the social body of men and women.

In this theory[18], the woman defines herself by the quality of her appearance. A woman will always be defined as good or not through her physical presentation. Even if she has a good social position, career success, among other qualities, if her body is very out of the standards or presents mutilation, she will not be a woman to get involved sexually. There is an important inequality between men and women from this point of view. While, for men, for example, it is not their beauty that matters most, but their social position, their profession.

The lexical analysis, belonging to the discourse manifested by the individuals, highlighted needs, frustrations and expectations when analyzed by Iramuteq® software. Tag clouds, word classes and similarity analysis made it possible to clearly identify the similarity with the responses to the instruments used for quantitative analysis, when it revealed shame, fear, social isolation and, at the same time, the hope of being able to eat, to speak and be understood by other people again. These functions are at the base of Maslow's pyramid[19] concerning the chain of human needs, whose base is the lowest needs (physiological or basic needs) and, at the top, the highest needs (the needs of self-realisation).

The process of caring, which concerns the scope of oral and maxillofacial rehabilitation, involves attitudinal, psychosocial, economic and political components, in which the nurse needs to recognize that this magnitude is essentially dynamic, multi and interdisciplinary. Therefore, a diverse repertoire of knowledge and capacity is relevant, making him/her capable of making, executing and evaluating the best decisions, even in unpredictable circumstances.

CONCLUSION

The study pointed out that oral deformity of oncologic origin impacts directly on oral communication. It revealed shame, fear, social isolation and, at the same time, the hope of at least being able to talk and be understood by other people through the use of the prosthesis. It also showed that

Zipf's theory, through the software Iramuteq®, enabled a more modern lexical analysis for nursing.

The nurse has a structuring and fundamental role in the whole process involving oral and maxillofacial rehabilitation, since the patient relies on him in search of emotional support and guidance to satisfy his basic needs. By understanding the magnitude of this rehabilitation process, the nurse positions himself as an awakened agent, to implement properly planned actions that not only aim at the prevention of other sequelae, physical recovery and improvement of quality of life, but also aim at the autonomy and reintegration of these patients into society.

It is pertinent to reflect on the need for more studies on the subject, in the area of nursing, which carries, in its essence, the science and art of caring, in order to offer efficient, integral and optimized assistance.

REFERENCES

1. Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C et al. Cancer incidence and mortality worldwide: Sources, methods and major patterns in GLOBOCAN 2012. Intenational Journal of Cancer.[Internet]. 2014; 136(5) [acesso em 21 fev 2019]. Available from: https://onlinelibrary.wiley.com/doi/full/10.1002/ijc.29210 DOI: 10.1002/ijc.29210.

2. Ministério da Saúde (BR). Instituto Nacional de Câncer José Alencar Gomes da Silva. Coordenação de Prevenção e Vigilância. Estimativa 2018: Incidência de Câncer no Brasil. [Internet]. Rio de Janeiro (RJ): INCA; 2017. [acesso em 2019 fev 21]. 128p. Available from: https://www.inca.gov.br/publicacoes/livros/estimativa-2018-incidencia-de-cancer-no-brasil.pdf

3. Dey JK, Ishii M, Boahene KDO, Byrne P, Ishii LE. Impact of Facial Defect Reconstruction on Attractiveness and Negative Facial Perception. Laryngoscope. [Internet]. 2015; 125(6) [acesso em 2018 nov 16]. Available from: https://onlinelibrary.wiley.com/doi/epdf/10.1002/lary.25130

4. Zandonai AP, Cardoso FMC, Nieto ING, Sawada NO. Qualidade de vida nos pacientes oncológicos: revisão integrativa da literatura latino-americana. Rev Eletr Enf. [Internet] 2010;12(3) [acesso 01 jul 2015]. Available from: https://www.fen.ufg.br/revista/v12/n3/pdf/v12n3a20.pdf

5. Kasama ST, Brasolotto AG. Percepção vocal e qualidade de vida. Pró-Fono [Internet] 2007;19(1) [acesso 2018 nov 16]. Available from: http://www.scielo.br/scielo.php?pid=S0104-56872007000100003&script=sci_arttext

6. Rosnay J. O homem simbiótico: perspectivas para o terceiro milênio. Petrópolis: Vozes; 1997.

7. Günther R, Levitin L, Schapiro B, Wagner P. Zipf law and the effort of ranking on probability distributions. International Journal of Theorical Phisics, 1996; 35(2). Available from: https://link.springer.com/content/pdf/10.1007/BF02083823.pdf

8. Cassettari RRB. Lei de Zipf em discursos orais: uma comparação entre trabalhos acadêmicos escritos e suas apresentações Monografia [Graduação em Biblioteconomia] Universidade Federal de Santa Catarina; 2014. [Internet]. [acesso em 6 nov 2018]. Available from: https://repositorio.ufsc.br/xmlui/bitstream/handle/123456789/122226/tcc_rafael_cassettari_20141.pdf?sequence=1&isAllowed=y

9. Brener S, Jeunon FA, Barbosa AA, Grandinetti HAM. Carcinoma de células escamosas bucal: uma revisão de literatura entre o perfil do paciente, estadiamento clínico e tratamento proposto. Rev Bras Cancerol [Internet] 2007; 53(1) [acesso 26 nov 2018]. Available from: http://www1.inca.gov.br/rbc/n_53/v01/pdf/revisao4.pdf

10. Instituto Brasileiro de Geografia e Estatística (IBGE) [homepage na Internet]. Pesquisa Nacional por Amostra de Domicílio 2014. Rio de Janeiro; 2014 [acesso em 2016 mar 15]. Available from: https://biblioteca.ibge.gov.br/visualizacao/livros/liv98887.pdf

11. Aquino RCA, Lima MLLT, Menezes CRCX, Rodrigues M. Aspectos epidemiológicos da mortalidade por câncer de boca: conhecendo os riscos para possibilitar a detecção precoce das alterações na comunicação. Rev CEFAC. [Internet] 2015; 17(4) [acesso em 26 Jun 2019]. Available from: http://www.scielo.br/scielo.php?pid=S1516-18462015000401254&script=sci_arttext

12. Marques S, Rodrigues R, Kusumota L. O idoso após acidente vascular cerebral: alterações no relacionamento familiar. Rev Latino - Am Enferm [Internet] 2006; 14(3) [acesso em 26 nov 2018]. Available from: http://www.scielo.br/pdf/rlae/v14n3/pt_v14n3a09.pdf

13. Hashibe M, Hunt J, Wei M, Buys S, Gren L, Lee YC. Tobacco, alcohol, body mass index, physical activity, and the risk of head and neck cancer in the prostate, lung, colorectal, and ovarian (PLCO) cohort. Head Neck [Internet] 2013; 35(7) [acesso em 26 nov 2018]. Available from: https://doi.org/10.1002/hed.23052

14. Moura MA, Bergmann A, Aguiar SS, Thuler LC. The magnitude of the association between smoking and the risk of developing cancer in Brazil: a multicenter study. BMJ Open [periódicos na Internet] Feb 2014;4(2) [acesso em 26 nov 2018]. Available from: https://bmjopen.bmj.com/content/bmjopen/4/2/e003736.full.pdf

15. Bhat SP, Bhat V, Permi H, Jayaprakash SK, Aroor R, Satheesh KBB. Oral and oropharyngeal malignancy: a clinicopathological study. Internet J Pathol Lab Med 2016; 1(1). [Internet]; 2(1) [acesso em 26 nov 2018]. Available from: https://chanrejournals.com/index.php/pathology/article/view/129/pdf

16. Goiato MC, Piovezan AP, Santos DM, Filho Gennari H, Assunção WG. Fatores que levam à utilização de uma prótese obturadora. Rev Odontol Araçatuba [Internet] 2006; 27(2) [acesso em 26 nov 2018]. Available from: https://www.apcdaracatuba.com.br/revista/volume_27_02_2006/PDFs/fatores.pdf

17. Lemos IO, Marchand DLP, Cassol M. Índice de Desvantagem Vocal pré e pós-intervenção vocal em pacientes disfônicos. Audiol Commun Res. [Internet] 2015;20(4) [acesso em 20 jun 2016]. Available from: http://www.scielo.br/pdf/acr/v20n4/2317-6431-acr-20-4-0355.pdf

18. Le-Breton, D. Entretiens avec David Le Breton. Montréal Paris: Téraèdre, (Collection [Ré] Édition). RBSE - Rev Bra Sociologia da Emoção 2011;10(28):187.

19. Maslow AHA. Theory of human motivation. Psycological Rev 1943; 50:390-396.

Corresponding author
Marta Regina Chaves Camilo Fernandes
Address: Rua Dr. Otávio Coutinho -
Santo Amaro. Recife - PE. Brazil
Zip code: 52.171-011
Email address: martfernands@gmail.com
Telephone number: +55 (82) 98897-9745

Disclaimer: The authors claim to have no conflict of interest.