

Original

Laryngeal cancer: family caregivers' knowledge and practices regarding tracheostomy care

Câncer de laringe: Saberes e práticas do familiar cuidador sobre cuidados com a traqueostomia Cáncer de laringe: conocimientos y prácticas de los cuidadores familiares sobre el cuidado de la traqueostomía

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Abstract

Objective: To analyze family caregivers' knowledge and practices regarding tracheostomy care. **Methods:** This is a qualitative descriptive study carried out in a referral hospital for oncology. Seven family caregivers of patients with tracheostomy participated in the study. Data collection was carried out through a semi-structured interview. Bardin's content analysis was adopted in association with the IRAMUTEQ program. **Results:** Three categories were formed: Family caregivers' knowledge about tracheostomy care; Use of materials for tracheostomy care; Family caregivers' knowledge about laryngeal cancer. Furthermore, from the interviews, gaps in knowledge regarding the diversion were identified. A lack of training of family members was also observed, with insecurity and fear of handling the respiratory diversion being portrayed in all statements. Conclusion: The study made it possible to understand the perception of family caregivers regarding tracheostomy care, identifying their difficulties and experiences during the process. With the data obtained, it was noted that knowledge gaps are caused by the lack of training and preparation of skills during the hospitalization of a sick family member.

Descriptors: Nursing; Laryngeal Neoplasms; Caregivers; Health Education; Tracheostomy.

Whats is already known on this?

There is a low level of knowledge among family caregivers about tracheostomy care, requiring educational interventions in the perioperative period.

What this study adds?

Understands the doubts and difficulties related to the process of adapting to tracheostomy from family caregivers' perspective and the importance of nursing guidelines in the education and health process for perioperative care.



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Resumo

Objetivo: Analisar os saberes e práticas do familiar cuidador sobre os cuidados com a traqueostomia. Métodos: Trata-se de estudo descritivo qualitativo, realizado em hospital de referência em oncologia. Participaram da pesquisa sete familiares cuidadores de pacientes com traqueostomia. A coleta de dados ocorreu a partir de uma entrevista semiestruturada. Adotou-se a análise de conteúdo de Bardin associado ao programa IRAMUTEQ. Resultados: Obtevese a formação de três categorias, sendo elas: Conhecimento do familiar cuidador sobre os cuidados com a traqueostomia; Uso dos materiais para o cuidado da traqueostomia; Saberes do familiar cuidador acerca do câncer de laringe. Ademais, a partir das entrevistas, foram identificadas lacunas nos conhecimentos a respeito da derivação. Observou-se também a falta de capacitação dos familiares, sendo retrato em todas as falas a insegurança e medo de manusear a derivação respiratória. Conclusão: O estudo possibilitou a compreensão da percepção do familiar cuidador diante dos cuidados com a traqueostomia, identificando as suas dificuldades e experiência durante o processo. Com os dados obtidos, notou-se que as lacunas de conhecimentos são provocadas pela ausência de capacitação e preparo de habilidades durante o tempo de internação do familiar adoecido.

Descritores: Enfermagem; Neoplasias Laríngeas; Cuidadores; Educação em Saúde; Traqueostomia.

Resumén

Objetivo: Analizar los conocimientos y prácticas de los cuidadores familiares sobre el cuidado de la traqueotomía. Métodos: Se trata de un estudio descriptivo cualitativo, realizado en un hospital de referencia en oncología. Participaron de la investigación siete cuidadores familiares de pacientes con traqueotomía. La recolección de datos se realizó a través de una entrevista semiestructurada. Se adoptó el análisis de contenido de Bardin asociado al programa IRAMUTEQ. Resultados: Se formaron tres categorías, a saber: Conocimiento del cuidador familiar sobre el cuidado de la traqueotomía; Uso de materiales para el cuidado de traqueotomía; Conocimiento de los cuidadores familiares sobre el cáncer de laringe. Además, a partir de las entrevistas se identificaron lagunas de conocimiento respecto a la derivación. También se observó la falta de capacitación de los familiares, retratándose en todas las declaraciones inseguridad y miedo al manejo de la derivación respiratoria. Conclusión: El estudio permitió comprender la percepción de los cuidadores familiares sobre el cuidado de la traqueotomía, identificando sus dificultades y experiencia durante el proceso. Con los datos obtenidos, se constató que los vacíos de conocimiento son causados por la falta de capacitación y preparación de habilidades durante la hospitalización del familiar enfermo.

Descriptores: Enfermería; Neoplasias Laríngeas; Cuidadores; Educación en Salud; Traqueostomía.

INTRODUCTION

Head and neck tumors develop in the following regions: larynx, pharynx, thyroid gland, oral cavity and nasal cavity. Malignant neoplasm develops rapidly and can compromise the functioning of the organ's cells; therefore, its function will also be affected.⁽¹⁾

Laryngeal carcinoma involves the formation of a tumor mass in the structures that make up this organ, thus affecting the supraglottis, glottis and subglottis. This neoplasm primarily affects males. The larynx has the function of directing air to the lower airways, in addition to presenting in its histological structure cells and specializations responsible for protecting and preventing the passage of microorganisms to the lungs. Moreover, the larynx has the vocal folds, which are an essential element for the phonation process.⁽²⁻³⁾

Predisposing factors are usually related to patients' lifestyle, and the main factors include smoking and alcohol consumption. Furthermore, some studies indicate that exposure to certain substances can favor the process of carcinogenesis and human papillomavirus (HPV) infections. Laryngeal cancer is usually identified based on clinical repercussions, i.e., the diagnosis of this pathology occurs late. The most common symptoms of the tumor are dyspnea, dysphagia, dysphonia, bleeding in saliva, nodule in the cervical region and progressive weight loss. Laryngeal neoplasm is considered a complex and limiting pathology, since organ involvement generates impacts on patients' biopsychosocial aspect. (4-6)

Neoplasm treatment will be adapted to the injury stage and patient clinical condition. In short, the process is summarized by the chemotherapy, radiotherapy and surgery triad. Regarding the last procedure, it is essential to confirm that laryngectomy consists of tumor excision, which is divided into two modalities: total and partial. The first option is performed when a tumor completely compromises the larynx, and the partial option would be the removal of an extension affected by the neoplasm. In both situations, depending on the stage of the disease, the implantation of a tracheostomy is indicated. In total removal, patients undergo a definitive tracheostomy, since all organ segments have been removed. (7)

In this context, it is important to emphasize that this entire procedure has an impact on patient health, and the complexity of surgery requires attention to post-surgical care and tracheostomy maintenance. Thus, the main support outside hospital settings is the family caregiver; therefore, there is an urgent need to train and inform this caregiver about the care in managing tracheostomy. In view of this, studies have affirmed the need to train family caregivers. This evidence indicates that the lack of preparation generates negative consequences in the dehospitalization process, highlighting that gaps in

health education and lack of training are problems that intensify the readmission of these patients to the hospital level.⁽⁸⁾

Some studies portray the need for health education in the pre- and post-operative phases of tracheostomy, stating that the systematization of guidelines and care provides emotional preparation and ensures greater integration and participation of family caregivers and patients in treatment.⁽⁹⁾

Caring is not limited to procedures; it is inherent that health education is present in nursing practices' routine, also considering its relevance in oncology. Research highlights the importance of understanding the most common types of health education provided by nurses and their impacts, as they have found that dialogue is the most common modality in this environment. Furthermore, these authors characterize that health education can be carried out with the support of teaching materials.⁽¹⁰⁾

Given the context presented, the study sought to analyze family caregivers' knowledge and practices regarding tracheostomy care.

METHODS

This is a descriptive study with a qualitative approach, in which the COnsolidated criteria for REporting Qualitative research (COREQ) tool was used to guide the research development process, thus making it possible to recognize subjective aspects related to family care for patients with tracheostomy. (11-12)

The study was developed in a public hospital that is a reference in oncology in the state of Pará, more specifically in the 1st Cancer Department, with capacity for 22 beds. (13)

Participants were seven family members and caregivers in the perioperative period of their relatives undergoing laryngectomy surgery.

In relation to the inclusion criteria, a family caregiver who had accompanied a laryngectomized patient since confirmed medical diagnosis was admitted to the study. As an exclusion criterion, a family caregiver who presented any psychological or verbal communication alteration was removed from the study.

Data collection began with a semi-structured interview. The first part included questions related to family caregiver characteristics (age group, gender, ethnicity, education, marital status), and the second part included questions related to tracheostomy care. The semi-structured interview was recorded using an IC chip ICD-PX240 digital recorder. Semi-structured interviews can be defined as a list of information that is desired from each interviewee, but the way of asking (question structure) and the order in which the questions were asked depend on the characteristics of each interviewee. (14)

The study was submitted for assessment by the *Universidade do Estado do Pará* Research Ethics Committee (REC), approved under Opinion 5,214,271. Subsequently, institutional authorization was requested from the oncology referral hospital and submitted to the institution's REC, approved under Opinion 5,393,025.

For data analysis, the content analysis technique was adopted following Bardin's proposal. The stages of content analysis are pre-analysis, material exploration, and treatment of results, inference and interpretation. Thus, we used the *Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* (IRAMUTEQ). Pre-analysis consists of organizing the material collected in the interviews. Material exploration occurs based on the analytical description of materials that were part of the research *corpus*. The last stage is treatment of results, inference and interpretation, in which thematic categories emerged from the data collected according to the classes generated by IRAMUTEQ.⁽¹⁵⁾

RESULTS

Categorization of family caregivers of patients with tracheostomy admitted to the 1st Cancer Department (1st CD).

Table 1. Categorization of family members cared for by patients with tracheostomy admitted to the 1st Cancer Department at *Hospital Ophir Loyola*. Belém, PA, Brazil, 2023

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Source: prepared by the authors, 2023.

In Table 1, we present family caregiver characterization in relation to sex, with 71.4% being female, which reinforces that women and daughters (5) play an important role in the act of caring for a family member. The predominant age group was 31 to 40 (57.1%); 42.8% stated that they were married; and 42.8% declared that they were mixed race. Another relevant characteristic is that 42.8% had incomplete elementary school.

Other studies characterized family caregivers of patients with tracheostomy, highlighting the need to consider aspects in research, such as sex, marital status, age group and level of education, as factors that influence the care provided to these patients. $^{(16-17)}$

Regarding content analysis using IRAMUTEQ, seven texts and a set of 118 text segments emerged, presenting a utilization percentage of 55.93%. From this, a dendrogram with three categories was created, according to the Descending Hierarchical Classification (DHC) (Figure 1).

DHC consists of an analysis method that establishes the formation of categories, which are formed by elements (words) that are repeated throughout the text segments.⁽¹⁸⁾

The three categories identified were given the following: 1st category: "Use of materials for tracheostomy care"; 2nd category: "Family caregivers' knowledge about tracheostomy care"; and 3rd

cannula

Move

category: "Family caregivers' knowledge about the disease". The three categories can be seen in the image below (Figure 1).

Corpus (07 texts) Text (108 text segments) *Text segments* (102 TS - 86.44% utilization) Class 1 Class 3 Class 2 Use of materials for Family caregivers' knowledge Family caregivers' knowledge tracheostomy care about laryngeal cancer about tracheostomy care 39 TS/102 (38.24%) 32 TS/102 (31.37%) 31 TS/102 (30.39%) X^2 X^2 X^2 Word f Word f Word Clean 23 29.85 Tumor 12 29.75 Understand 8 13.38 Total Gauze 11 19.92 5 11.5 Father 21 12.41 laryngectomy Saline 15 17.47 15 11.5 Health 4 9.54 Larynx solution 7 Replacement 9 15.95 **Breathing** 10.31 Know 14 8.81 Family 9 9.87 Nurse 16 14.87 Material 6 8.45 caregiver Secretion 11 14.49 Commitment 9.11 Nervous 3 7.08 Intermediate 7.99 10 12.58 3 7.08

Figure 1. Dendrogram of Descending Hierarchical Classification. Belém, PA, Brazil, 2023

Caption: TS: text segment; *f* : absolute frequency; X²: chi-square.

Exam

Source: survey data, 2024.

Furthermore, a similarity analysis of the corpus was performed (Figure 2). It can be seen that the generated tree has several branches, and each of these is composed of words that have a semantic connection. It can be seen that the word tangles are interconnected to other branches, expressing the affinity and relationship with other sets. Thus, through this analysis, it is possible to see that the term "tracheostomy", being the epicenter of the tree, is punctuated in other words, such as care, cleaning, nurse, situation, surgery.

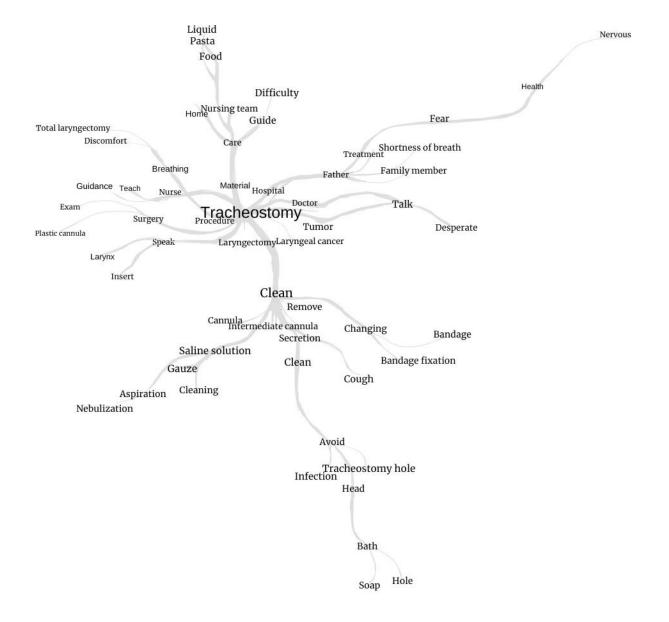
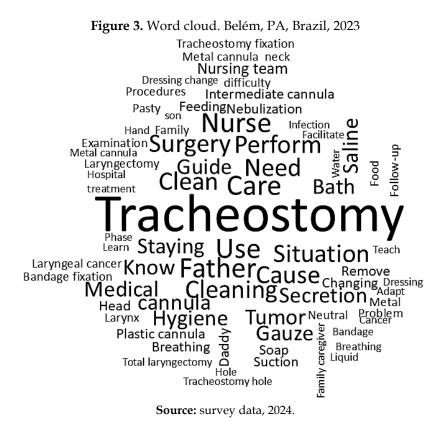


Figure 2. Analysis of similarity between words. Belém, PA, Brazil, 2023

Source: survey data, 2024.

Furthermore, with the transcribed data, a word cloud was developed (Figure 3). This type of analysis shows the most frequently appearing words in the *corpus* based on their frequency. From this perspective, the method in question assessed the relative frequency of words. Thus, the words that stood out the most were tracheostomy, care, bath, nurse, surgery, cannula, secretion, guide, clean, gauze, tumor, hygiene.



The analyses developed made it possible to confirm that the formulated categories are in line with the data obtained. It is worth noting that the implementation of the three analysis models enabled a more rigorous assessment of the collected material, ensuring an exploration of the product and obtaining complex results.

1st category: Use of materials for tracheostomy care

It was identified throughout statements that family caregivers were aware of the materials most commonly used in tracheostomy care, and they pointed out how they cleaned the tracheostomy and the products that were most suitable for managing the diversion. Other points presented were related to changing tracheostomy dressings, cleaning the cannula, fixing it, removing secretions, nebulizing it, and correctly fitting the tracheostomy. The following statements portray this category:

Regarding cleaning, I used saline solution to remove secretions. I removed the contaminated gauze and placed two clean, dry gauze pads around the tracheostomy. I also changed the tracheostomy fixation bandage (F1).

For cleaning, gauze and saline solution are used. The nurses instructed me on how to care for the intermediate cannula, which can be removed for cleaning. They explained the lock and the position to fit it (F2).

I cleaned the outside of tracheostomy; I changed the gauze that was around the tracheostomy every three hours; I used saline solution to clean it after the laryngectomy had healed; they put in the metal cannula (F6).

2nd category: Family caregivers' knowledge about tracheostomy care

In this category, we observed that family caregivers and the patients themselves were still in the process of adapting to tracheostomy. It is emphasized in the dialogues that a family caregiver was suddenly forced to deal with the health-disease process. In the following excerpts, we see that participants expose their difficulties in relation to tracheostomy management:

We are not yet used to the tracheostomy. It is a little uncomfortable to handle it. Even though I am not used to it, I had to be brave. She depended on my support and help [...] it was a little difficult to adapt to this situation. I didn't know how to deal with it, I was afraid to touch and handle it (F1).

I don't know the other indications for using a tracheostomy. My father used it because of laryngeal cancer. We had no knowledge on the subject, and no one in the family used a tracheostomy or had laryngeal cancer because of his situation, which I learned better. I'm learning little by little [...] the first few days with the tracheostomy were difficult for both of us. I was nervous, not knowing what to do (F2).

We are not yet adapted to the tracheostomy. My father is still very uncomfortable. I, in my case, am afraid, afraid to move and remove the intermediate cannula. We are still getting used to it, we are not from the health field (F5).

3rd category: Family caregivers' knowledge about the disease

In this section, study participants raised questions related to the course of the disease, the first signs of the disease, the consequences of tumor progression, and basic knowledge about laryngectomy and tracheostomy, as demonstrated in the statements below:

At first, she was experiencing severe respiratory distress and was unable to speak. She needed to undergo a laryngeal biopsy. During this procedure, they identified the involvement of the larynx due to the tumor; they took advantage of the opportunity and placed a tracheostomy to avoid complications (F1).

The tumor could obstruct his airways. My father could die of suffocation because of this situation, and a tracheostomy would be a solution to avoid this problem. Well, right now, he is using a tracheostomy because of the total laryngectomy. Since they will remove the organ, the tracheostomy would be the replacement, providing a new route for breathing (F2).

He was already showing some signs: sore throat and hoarse voice. We already suspected the situation. We did some tests and discovered the tumor. We were able to send Dad to the hospital. He was already referred for surgery. Because of the progression of the disease, his larynx was compromised. When he arrived at the hospital, they performed a tracheotomy to make breathing easier. This happened twenty days ago (F6).

DISCUSSION

During the interviews with family caregivers, they described the guidelines on the materials that were usually provided by the nursing team. Furthermore, the interviewees also argued that, to complement their knowledge on the subject, they researched videos and information on the internet. In view of this, family members, caregivers and patients reported that they were adjusting to the new living conditions and had many doubts regarding tracheostomy care, and claimed a lack of skill in handling it.

Some authors propose the need to understand the individual perspective of each family caregiver regarding the treatment process. These authors indicate that care for patients with cancer also involves family caregivers and that healthcare professionals need to reconcile assistance and guidance between this dvad. ⁽¹⁹⁾

Other studies state that nurses need to value family caregivers as active members in patients' health-disease process. Thus, it is essential to confirm that nurses must instigate the construction of knowledge of these users, thus requiring active listening to them and adapting guidelines to each identified reality.⁽²⁰⁾

Research shows that current care models do not encourage the participation of family caregivers in tracheostomy management in hospital settings. This context leaves these individuals unprepared for tracheostomy care as an outcome after transitioning to home care. As a consequence, a series of urgent demands related to these gaps can be noted. (21)

Some studies state that family caregivers are overworked. Studies show that these individuals' routines are stressful and exhausting. Among the factors that intensify this issue is the lack of knowledge and preparation for the role of caregiver. Another relevant issue is the fact that family caregivers end up prioritizing meeting all of patients' needs and neglecting their own demands, thus causing physical and emotional exhaustion.⁽²²⁾

Nursing is present in all stages of cancer treatment, and has the professional who has the greatest contact with the family dyad between caregiver and patient. It is extremely important that this professional develops strategies, products and therapeutic projects that promote the inclusion and training of these users in the care process. Therefore, nurses need to assess family members' difficulties and demands, seeking to propose interventions that assist this process.⁽²³⁾

Family caregivers face difficulties after the transition from hospital to home. These problems create several problems that intensify family members' lack of preparation. Among them, the impact of the lack of training and preparation during the hospitalization period becomes evident. It is clear from statements that family members are knowledgeable about the materials, but do not have the confidence and training to administer all the care. Few of the interviewees had autonomy in managing the diversion. (24)

Research emphasizes the need for health education in the pre- and post-operative phases of tracheostomy. This research states that the systematization of guidance and care provides emotional preparation and ensures greater integration and participation of family caregivers and patients in treatment.⁽⁹⁾

Thus, it is observed that family caregivers and patients need to be guided in relation to the surgical procedure and the tracheostomy itself. Some authors explain that this intervention needs to be enhanced in the postoperative period, since the recovery and the physiological and emotional repercussions make this stage more laborious and painful for these individuals to adapt to.⁽²⁵⁾

In the excerpts from the interviews, we observed that most patients are diagnosed with laryngeal neoplasm late. Studies have identified that head and neck cancer is usually diagnosed in advanced stages. These studies have identified the possible causes of this issue. Among them, the author focuses on the population's lack of knowledge in identifying the initial signs and symptoms of the disease, problems in public health, and the difficulty and delay in scheduling appointments with specialists, exams and even surgery.⁽⁵⁾

The most important point for a good prognosis and increased survival of patients with neoplasm is early diagnosis. In his study, the author highlights the correlation between symptoms and the time of evolution of the neoplasm, and he addresses that failure to diagnose early is closely related to cultural and economic factors, lifestyle, and the fact that, in some cases, the initial symptoms are confused with other everyday diseases. (26-27)

As limitations of this study, we highlighted the specificity of the target audience and logistical problems, such as the period in which the hospital's surgical block was closed for renovation. This situation reduced the number of surgeries performed and affected bed turnover and, consequently, the number of participants invited to participate in the study.

As a contribution, this study made it possible to understand the importance of supporting family members and patients with tracheostomy. The data collected in this study helped us to identify family caregivers' experience and how nursing can positively interfere with this process.

CONCLUSION

This study allowed us to assess family caregivers' knowledge about tracheostomy care. However, after conducting field research, it was found necessary to address other issues related to the topic, such as knowledge about laryngeal cancer itself and its post-surgical rehabilitation process.

Therefore, it is worth noting that the subject of tracheostomy is still not widely known in society. Most participants had no knowledge about this surgical procedure before it was necessary in a family member's life.

The research also made it possible to understand the perspective experienced by family caregivers in the health-illness process of their family member, as well as their difficulties, the overload of the role of family caregivers and the physical and emotional impacts during the process, and knowledge about the materials used to clean the cannula.

Therefore, it is noted that the gaps in health education during the hospitalization period are the main reason that generates the fear of family caregivers in managing the tracheostomy. It is up to the nursing staff to improve, through tools such as educational technologies, their health education processes, in order to train family caregivers in managing tracheostomy.

CONTRIBUTIONS

Contributed to the conception or design of the study/research: Santana ME, Silva MJRB. Contributed to data collection: Paiva ACR, Pinheiro SR. Contributed to the analysis and/or interpretation of data: Silva MJRB, Paiva ACR, Pinheiro SR. Contributed to article writing or critical review: Santana ME, Silva MJRB. Final approval of the version to be published: Santana ME, Silva MJRB.

REFERENCES

- 1. Pedrosa MT, Martins FT, Souza PA, Silva FD, Moura FS, Muzi DC, *et al*. Clinical evaluation of symptoms in patients with cancer of head and neck. Rev. Enferm[Internet]. 2019; 37(2):158-68. DOI: https://doi.org/10.15446/av.enferm.v37n2.7314.
- 2. Silva EGF, Carmo RD, Freitas MCR, Ferreira LP. Laryngeal cancer patients in the northeast of Brazil: surgical intervention and speech rehabilitation. Rev CEFAC [Internet]. 2016;18(1):151–7. DOI: https://doi.org/10.1590/1982-021620161814915.
- 3. Smeltzer SC, Bare BG. BRUNNER & SUDDARTH: Textbook of medical-surgical nursing. 14th. Rio de Janeiro. Guanabara Koogan; 2019.186p.
- 4. Costa SNL, Fernandes FCGM, Souza DLB, Bezerra HS, Santos EG de O, Barbosa IR. Incidence and mortality by larynx cancer in Central and South America. Rev Gaúcha Enferm [Internet]. 2021;42:e20190469. DOI: https://doi.org/10.1590/1983-1447.2021.20190469.
- 5. Felippu AWD, Freire EC, Silva R de A, Guimarães AV, Dedivitis RA. Impact of delay in the diagnosis and treatment of head and neck cancer. Braz j otorhinolaryngol [Internet]. 2016;82(2):140–3. DOI: https://doi.org/10.1016/j.bjorl.2015.10.009
- 6. Doğan S, Vural A, Kahriman G, İmamoğlu H, Abdülrezzak Ü, Öztürk M. Non-squamous cell carcinoma diseases of the larynx: clinical and imaging findings. Braz j otorhinolaryngol [Internet]. 2020Jul;86(4):468–82. DOI: https://doi.org/10.1016/j.bjorl.2019.02.003
- 7. Garcia AM, Dias FL, Gonçalves AJ, Cernea CR, Freitas EQ, Menezes MB, *et al.* Supratracheal laryngectomy: a multi-institutional study. Braz j otorhinolaryngol [Internet]. 2020;86(5):609–16. DOI: https://doi.org/10.1016/j.bjorl.2019.04.004.
- 8. Nóbrega VM. Family Preparation For Hospital Discharge Of Children With Chronic Illnesses: a mixed methods approach[dissertation]. João Pessoa: Universidade Federal da Paraíba;2020.167p. Available from: https://repositorio.ufpb.br/jspui/handle/123456789/18523.
- 9. Castro AP, Oikawa SE, Domingues TAM, Hortense FTP, Domenico EBL. Health Education for the Care of Tracheostomized Patients: Perception of Nursing Professionals and Caregivers. RBC. 2014; 60(4): 305-13. DOI: https://doi.org/10.32635/2176-9745.RBC.2014v60n4.445.
- 10. Lago PN, Scarcella MFS, Nobre VNN, Kanashiro LM, Corrêa CF, Costa GC, Vieira EC, Mendes WSR. Cancer patients and their families: an educational look at nursing. Braz. J. Hea. Rev. [Internet]. 2021;4(4):15264-79. DOI: https://doi.org/10.34119/bjhrv4n4-071.
- 11. Rozemberg B, Silva APP da, Vasconcellos-Silva PR. Hospital leaflets and the dynamics of constructing their meanings: the perspective of health professionals. Cad Saúde Pública [Internet]. 2002;18(6):1685–94. DOI: https://doi.org/10.1590/S0102-311X2002000600023.
- 12. Souza VR dos S, Marziale MHP, Silva GTR, Nascimento PL. Tradução e validação para a língua portuguesa e avaliação do guia COREQ. Acta paul enferm [Internet]. 2021;34:eAPE02631. DOI: https://doi.org/10.37689/acta-ape/2021AO02631

- 13. Hospital Ophir Loyola. Who we are. 2020. Available from: http://www.ophirloyola.pa.gov.br/content/quem-somos.
- 14. Oliveira MF. Scientific Methodology: a manual for conducting research in administration. Universidade Federal de Góias. Catalão, 2011.72p. Availiable from: https://files.cercomp.ufg.br/weby/up/567/o/Manual_de_metodologia_cientifica-_Prof_Maxwell.pdf .
- 15. Bardin L. Content analysis. Edição revista e ampliada. 70th. São Paulo: Almedina brasil,2016. 141 p.
- 16. Mendonça HMCR, Oliveira K, Siqueira LR, Mendes MA, Fava SMCL, Dázio EMR. Family caregiver's experience of a man with tracheostomy due to cancer. ESTIMA [Internet]. 2017;15(4). DOI: https://doi.org/10.5327/Z1806-3144201700040004.
- 17. Anjos VM. O familiar cuidador da pessoa com ostomia respiratória: satisfação com o planeamento do regresso a casa [master's thesis]. Coimbra: Escola Superior de Enfermagem de Coimbra; 2020. 180 p. Availiable from: http://web.esenfc.pt/?url=rWEGBaff.
- 18. Sousa YSO, Gondim SMG, Carias IA, Batista JS, Machado KCM. The use of the Iramuteq software in the interview data analysis. Pesqui. prát. Psicossociais.2020;15(2): 1-19. Availiable from: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1809-89082020000200015.
- 19. Blanc LO, Silveira LMOB, Pinto SP. Understanding family caregivers' experiences with cancer patients. Pensando fam.2016; 20(2), 132-148. Availiable from: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1679-494X2016000200010.
- 20. Ribeiro WA, Fassarela BPA, Morais MC, Souza DMS, Couto CS, Martins LM, Souza JLR, Santos JAM. The nurse and the implementation of care for the client's family with Cancer. Revista Pró-univerSUS. 2019; 10 (1) 86-91. Availiable from: http://editora.universidadedevassouras.edu.br/index.php/RPU/article/view/1658.
- 21. Precce ML, Moraes JRMM, Pacheco STA, Silva LF, Conceição DS, Rodrigues EC. Educational demands of family members of children with special health care needs in the transition from hospital to home. Rev Bras Enferm [Internet]. 2020;73:e20190156. DOI: https://doi.org/10.1590/0034-7167-2019-0156.
- 22. Diaz LJR, Cruz DALM, Silva RCG. Content Validation of Nursing Outcomes in Relation to Family Caregivers: Content Validation by Brazilian and Colombian Experts. Texto contexto enferm [Internet]. 2017;26(2):e4820015. DOI: https://doi.org/10.1590/0104-07072017004820015.
- 23. Coppetti LC, Girardon-Perlini NMO, Andolhe R, Dalmolin A, Dapper SN, Machado LG. Care Skill and Overload of the Family Caregiver of Patients in Cancer Treatment. Texto contexto enferm [Internet]. 2020; 29. DOI: https://doi.org/10.1590/1980-265X-TCE-2018-0451.
- 24. Silva RAE, Silva C do N, Braga PP, Friedrich DB de C, Cavalcante RB, Castro EAB de. Management of home care by family caregivers to elderly after hospital discharge. Rev Bras Enferm [Internet]. 2020;73. DOI: https://doi.org/10.1590/0034-7167-2020-0474.
- 25. Xavier ES, Zago MM, Correa Júnior AJ, Souza TC, Santana ME. The meaning of sick people affected by laryng cancer submitted to total laryngectomy. Enferm Foco. 2021;12(2):326-32. DOI: 10.21675/2357-707X.2021.v12. n2.4133.
- 26. Santos FBG, Vasconcelos-Raposo JJB, Figueiredo MDCT. Correlation between symptoms and course duration of upper aerodigestive tract cancer at early and advanced stages. Brazilian Journal of Otorhinolaryngology. 2013,79(6): 673-80. DOI: https://doi.org/10.5935/1808-8694.20130125.

27. Correia ME, Vianna KM de P, Ghirardi AC de AM. Voz e qualidade de vida de laringectomizados totais: um estudo comparativo. Rev CEFAC [Internet]. 2016Jul;18(4):923–31. DOI: https://doi.org/10.1590/1982-0216201618423115.

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