






Patient guidance during discharge after a tracheostomy: an integrative review*

Orientação ao paciente em pós-operatório de traqueostomia no processo de alta para o domicílio: revisão integrativa

How to cite this article:

Pitzer MB, Flores PVP, Silva MSL, Dias AC, Santos LCL. Patient guidance during discharge after a tracheostomy: an integrative review. Rev Rene. 2023;24:e91981. DOI: <https://doi.org/10.15253/2175-6783.20232491981>

-  Monique Brito Pitzer¹
-  Paula Vanessa Peclat Flores¹
-  Marcella dos Santos Lopes da Silva¹
-  Ágatha Cappella Dias¹
-  Lorena Cupello Lobo dos Santos¹

*Extracted from the dissertation “Manual de orientação ao paciente traqueostomizado no processo de alta hospitalar”, Universidade Federal Fluminense, 2022.

¹Universidade Federal Fluminense.
Niterói, RJ, Brazil.

Corresponding author:

Marcella dos Santos Lopes da Silva
Rua José Mauro de Vasconcelos, 400.
Salgueiro, São Gonçalo, Rio de Janeiro.
CEP: 24475-080. São Gonçalo, RJ, Brazil.
E-mail: marcellalopes@id.uff.br

Conflict of interest: the authors have declared that there is no conflict of interest.

EDITOR IN CHIEF: Ana Fatima Carvalho Fernandes
ASSOCIATE EDITOR: Francisca Diana da Silva Negreiros

ABSTRACT

Objective: to map the orientations provided by nurses for the self-care of patients during the postoperative period of tracheostomy and their transition from hospital to home. **Methods:** this is an integrative review. We used the PCC acronym, where the Population was adult patients with tracheostomy; the Concept, self-care (education/orientation by the nurse); and the Context, operation periods and home care. The study was based on the question: What guidelines for self-care should the nurse given to patients in the postoperative period of a tracheostomy and in the process of discharge? We carried out a wide search, whose results were reviewed by two researchers and organized around the phenomenon of interest. **Results:** 1,940 articles were found and 28 were selected. 16 phenomena of interest were organized into three categories: tracheostomy management, airway care, and activities of daily living. **Conclusion:** Self-care guidance is related to direct care of the stoma, how to act in home emergencies, and psychosocial aspects. **Contributions to practice:** identifying, summarizing, and organizing evidence about nursing clinical practice creates quality materials that can be implemented fast into clinical practice, especially in regard to preparing patients with tracheostomy for their discharge. **Descriptors:** Nursing Care; Hospital to Home Transition; Tracheostomy; Nursing.

RESUMO

Objetivo: mapear as orientações fornecidas pelo enfermeiro para o autocuidado de pacientes no pós-operatório de traqueostomia durante o período de transição hospital-casa. **Métodos:** trata-se de uma revisão integrativa. Utilizou-se o acrônimo PCC, considerando População - pacientes adultos em uso de traqueostomia; Conceito - autocuidado (educação/orientação pelo enfermeiro); e Contexto - períodos operatórios e cuidado domiciliar, com base na questão: Quais orientações para o autocuidado devem ser dadas pelo enfermeiro ao paciente em pós-operatório de traqueostomia no processo de alta hospitalar para o domicílio? Realizou-se busca ampla e seus resultados foram tratados por dois revisores e organizados com foco no fenômeno de interesse. **Resultados:** encontrou-se 1.940 artigos e 28 foram selecionados. 16 fenômenos de interesse foram organizados em três categorias: manejo da traqueostomia, cuidados com as vias aéreas, e atividades de vida diária. **Conclusão:** verificou-se que as orientações para o autocuidado estão relacionadas ao cuidado direto com o estoma, a atuação em emergências no domicílio e questões psicossociais. **Contribuições para a prática:** a identificação, sumarização e organização das evidências sobre práticas clínicas do enfermeiro possibilitam o consumo de material de qualidade, para rápida implementação na prática clínica, sobretudo no que concerne ao preparo para alta dos pacientes com uso de traqueostomia. **Descritores:** Cuidados de Enfermagem; Transição do Hospital para o Domicílio; Traqueostomia; Enfermagem.

Introduction

Tracheostomy is a procedure performed in clinical practice that may be permanent, depending on why it is recommended. It has a direct impact on patients, causing physiological, social, and speech alterations⁽¹⁾. Estimates indicate that, in Brazil, from 2023-2025, there will be 704 thousand new cancer cases. Oral cancers are expected to affect nearly 10,900 men and 4,200 women, while laryngeal cancer is estimated to affect about 6,570 men and 1,220 women in the same period⁽²⁾.

Although tracheostomy is an old technique, frequently carried out in general and cancer hospitals, there are still shortcomings in the process of providing orientation to patients and their families in the postoperative period, regarding adequate care⁽³⁾.

A respiratory stoma causes changes in one's life that go beyond the respiratory system of the patient, affecting psychological and functional aspects, as well as swallowing and speech, which, in turn, can lead to emotional and social repercussions on the lives of individuals and their families⁽⁴⁾. These changes in the lives of patients are complex, since they need to adapt to the new reality of their lives and require help from nursing professionals in this process. The nurse must be involved by providing health education and teaching self-care guidelines.

This procedure can also impact their social interaction due to the permanent loss of voice⁽⁵⁻⁶⁾. Furthermore, it requires care with nutrition, communication, and activities of daily living, such as dressing, aspirating, humidifying, and cleaning the skin around the stoma and tube. Thus, health education for patients and the health team that aids them⁽⁷⁾ is essential to minimize possible complications

This guidance is provided by the nursing team during the hospital care to these patients. It is essential to reestablish the health of individuals, to control and manage complications⁽⁴⁾, and to prepare for a safe discharge from hospital to home⁽³⁾.

Patients with tracheostomy who are dischar-

ged must be able to know and apply tracheostomy care⁽⁸⁾. Orientation is necessary from the preoperative to the postoperative period, focusing on self-care and autonomy in this new condition of their lives. The nurse plays an essential role for this patient by giving them space to clarify their doubts and offering help and support⁽⁴⁾.

Despite the importance of providing care to these clients, the process of orientation at discharge is still flawed, and can have negative repercussions on the recovery and safety of tracheostomized patients when they return to activities of daily living in their homes. Thus, there are recommendations regarding the implementation of technologies and instruments to manage care, including protocols, booklets, and videos for patient and caregiver education, as self-care strategies for the discharge process⁽³⁾.

Considering the particularities of the care to tracheostomized patients, and all changes brought about by this new condition, this aims to map the orientations provided by nurses for the self-care of patients during the postoperative period of tracheostomy and their transition from hospital to home.

Methods

This is an integrative literature review, carried out using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses - Extension for Scoping Reviews (PRISMA-ScR)⁽⁹⁾, and filed in the open Science Framework (OSF) under DOI: 10.17605/OSF.IO/XDB8W. We defined eligibility criteria based on the acronym PCC (Population, Concept, and Context), where P - adult tracheostomized patients, C - self-care (education/guidance by the nurse), and C - operative periods and home care. The study was based on the question: What guidelines for self-care should the nurse given to patients in the postoperative period of a tracheostomy and in the process of discharge?

Inclusion criteria considered all articles that answered the study question, regardless of their methodological design, as long as they were in En-

glish, Portuguese, or Spanish. No specific time frame was selected. Exclusion criteria included duplicate articles, as well as those that were not available in full, did not address the subject of our study, or addressed the topic as associated to children's health or intensive care units.

Based on the PCC acronym and on standardized terms and their synonyms in Portuguese, English, and Spanish, we mapped controlled vocabularies in the platforms Health Science Descriptors (DeCS), Medical Subject Headings (MeSH), and Embase Subject Headings (Emtree). We added terms using a preliminary search, considering those found in the titles, abstracts, and descriptors indexed in the documents. The search strategy included the use of the Boolean operators OR, AND, and NOT, and there was no limit regarding language or time.

Search strategies for terms in Portuguese and Spanish for Brazilian and Latin databases were: Traqueostomia OR Traqueostomía OR traqueostomizados OR Traqueotomia) AND (Autocuidado OR Autocuidado OR Autoajuda OR Autoayuda OR "Educação de Pacientes como Assunto" OR "Educação de Pacientes" OR "Educación del Paciente como Asunto" OR "Educación del Paciente" OR "Educação do Paciente" OR "Educação em Saúde" OR "Educación en Salud" OR "Educar para a Saúde" OR "Educação Sanitária" OR "Educação para a Saúde" OR "Educadores de Saúde" OR "pratica educativa" OR Educação OR Educación OR Educacionais OR Educacional OR Educativa* OR Educar OR Treinamento* OR Aprendizagem OR Ensino) AND (Enfermagem OR enfermeir* OR Enfermería OR Enfermera OR Enfermero). The same strategy was used for the English language, in international databases.

The search was carried out in August 2023, with the help of a librarian, in the databases: Regional Portal of the Virtual Health Library (VHL) and its main databases. Nursing Database (BDENF), Latin American and Caribbean Health Sciences Literature (LILACS), *Índice Bibliográfico Español en Ciencias de la Salud* (IBECS), National Collection of SUS Sources of Information (ColecionaSUS), Scientific Electronic

Library Online (SCIELO), Medical Literature, Analysis, and Retrieval System Online (MEDLINE) via PubMed, Pubmed Central, the CAPES Journal Platform, Embase (Elsevier), SCOPUS, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL), SocINDEX with Full Text (EBSCO), Academic Search Premier (EBSCO), in addition to the Education Resources Information Center (ERIC) at the Institute of Education Sciences (IES) of the U.S. We also included Cochrane Library and the platforms National Institute for Health and Care Excellence (NICE), in addition to Science.gov.

The selection was carried out, at first, through the exclusion of duplicate articles, carried out using the reference management software Endnote Basic (Clarivate Analytics). Then, we exported the articles into the Rayyan Qatar Computing Research Institute (QCRI) application, which allows the main author to select reviews, collaborators, translators, and viewers.

At first, articles were selected by two independent reviewers considering their title, abstract, and keywords (topic), and a spreadsheet was generated in Excel. Then, texts were read in full and analyzed, and data was extracted using a tool developed by reviewers. This instrument included title, authors, year of publication, objective, methodological design, and guidance/nursing care provided to the tracheostomized patient (phenomena of interest). Later, data was condensed into a second spreadsheet, where the articles were associated with the 16 phenomena of interest of the study, which were organized into three broad categories: tracheostomy management, airway care, and activities of daily living. These categories were used for the discussion about the topic. When the reviewers had a different opinion about the selection of studies, cases were discussed until consensus was reached.

Results

The PRISMA-ScR flowchart shows the total number of bibliographic searches and the stages of study selection (Figure 1).

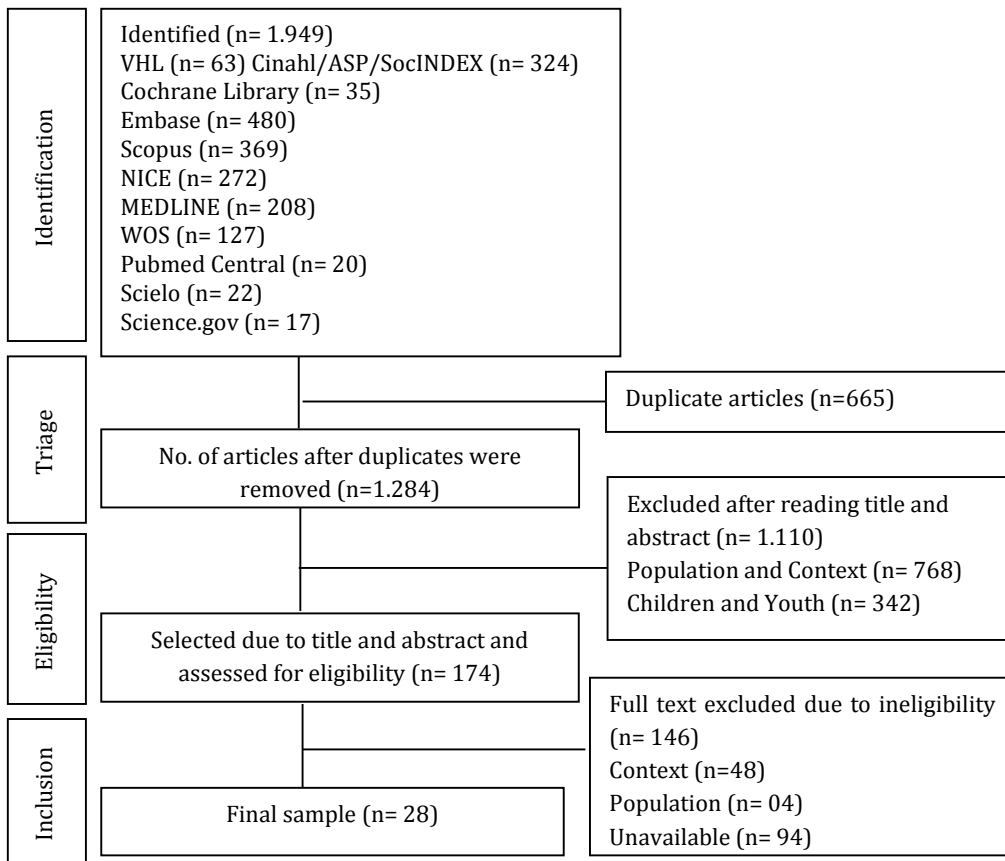


Figure 1 – Prisma Flowchart. Niterói, RJ, Brazil, 2023

Of the 1,949 articles found in the searched databases, 28 were selected for analysis. More than half studies included (67%) were in English, followed by Portuguese (22%), and Spanish (11%). Regarding the

year of publication, the last five years (2019 to 2023) included 32% of studies. Figure 2 summarizes the studies in regard to phenomena of interest, according to study and year of publication.

Article/Year	Phenomena of interest															
	Caring for the stoma	Protecting the stoma	Humidifying	Education	Mobilizing the secretion	Cleaning the endocannula	Replacing the fastener	Emergency	Oral hygiene	Communication	Nutrition	Cuff	Exchanging the cannula	Self-care	Psychosocial	Aspirating
A1 ⁽¹⁰⁾ ; 1983	X			X						X				X	X	
A2 ⁽¹¹⁾ ; 1996		X	X	X		X		X	X	X	X				X	X
A3 ⁽¹²⁾ ; 2000	X	X	X		X		X	X		X	X			X	X	X
A4 ⁽¹³⁾ ; 2000	X		X			X	X	X		X	X	X				X
A5 ⁽¹⁴⁾ ; 2002	X		X		X		X	X		X	X	X				X
A6 ⁽¹⁵⁾ ; 2003	X		X		X	X	X			X		X				X
A7 ⁽¹⁶⁾ ; 2003	X		X		X	X		X		X		X				

(the Figure 2 continue in the next page...)

A8 ⁽¹⁷⁾ ; 2007	X		X	X		X	X	X	X	X	X	X				
A9 ⁽¹⁸⁾ ; 2008	X		X	X	X	X		X	X	X	X			X		
A10 ⁽¹⁹⁾ ; 2009	X		X	X		X	X			X	X	X				X
A11 ⁽²⁰⁾ ; 2010	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
A12 ⁽²¹⁾ ; 2010	X		X				X	X		X						X
A13 ⁽²²⁾ ; 2012				X		X	X	X		X	X		X	X		X
A14 ⁽²³⁾ ; 2013	X			X	X		X	X	X		X	X		X	X	X
A15 ⁽²⁴⁾ ; 2014	X	X		X	X			X							X	
A16 ⁽²⁵⁾ ; 2014	X			X		X	X	X		X				X		X
A17 ⁽²⁶⁾ ; 2014	X		X			X	X	X	X	X	X	X	X			X
A18 ⁽²⁷⁾ ; 2015										X						
A19 ⁽²⁸⁾ ; 2018				X						X				X		X
A20 ⁽²⁹⁾ ; 2019			X			X		X						X	X	X
A21 ⁽³⁰⁾ ; 2019	X		X	X	X	X		X					X			X
A22 ⁽³¹⁾ ; 2019	X	X	X	X		X	X	X		X	X					X
A23 ⁽³²⁾ ; 2019	X		X	X						X	X			X	X	
A24 ⁽³³⁾ ; 2019	X		X			X		X				X				X
A25 ⁽³⁴⁾ ; 2020	X	X		X		X	X		X							X
A26 ⁽³⁵⁾ ; 2020				X				X								
A27 ⁽³⁶⁾ ; 2021	X	X	X	X	X											
A28 ⁽³⁷⁾ ; 2022	X		X	X		X	X	X			X		X			X

Figure 2 – Result of the selection of articles, with year and phenomena of interest. Niterói, RJ, Brazil, 2023

The results of this research led to the construction of three categories of analysis that will be discussed below: tracheostomy management, airway care, and activities of daily living. The main care and nursing guidance related to the management of tracheostomy in the articles was: cleaning the endocannula, replacing the fastener, caring for the stoma, caring for

the cuff, and replacing the cannula; regarding airway care: protecting the stoma, emergencies, humidifying, aspirating, and mobilizing secretion; and regarding activities of daily living: oral hygiene, education, communication, nutrition, self-care, and psychosocial issues. Figure 3 shows these results in depth.

Care	Guidance
Tracheostomy management	
Cleaning the endocannula	Clean with warm water ^(17,30,33) or saline solution ^(13,30,33) . Use a tracheal brush ^(11,13,15,17,20,30) to assist in the removal of dirt from inside of the endocannula. Clean the endocannula daily ^(15,20,30) , or when necessary, according to the presence of secretion ^(12,36) .
Replacing the fastener	Perform the exchange using Velcro ^(13-15,19-20,30) or twill tapes ^(11,13,20) , with a finger ^(11,13,20,25) or two ^(14,21,26,30) under the fixing device. Change the fastener daily ^(11,30) or when necessary ⁽³⁰⁾ , with the help of another person at the time of fixing the cannula ⁽²⁶⁾ .
Caring for the stoma	Apply normal saline solution, which is not irritating to the skin and tracheal mucosa ^(12-15,17,20,23,26,30,32-33) . Use prefabricated tracheostomy dressings ⁽¹⁷⁾ , which are made of spongy material and inserted using a cross-shaped incision to fit around the tracheostomy tube ^(12-17,19,20) . Use a pad with gauze folded between the cannula and the skin of the neck, always keeping it clean and dry ^(21,23,30) . Keep the place dry and remove all moisture, so the peristomal skin is not moist and will not be macerated ^(13,16,19-21,23,25,30,32) . Change as many times as necessary and when there is dirt ⁽¹⁵⁾ and secretions ^(20,34) , but at least once a day ^(26,30,33) .
Caring for the cuff	Use a pressure gauge to measure cuff pressure ^(14-15,17,19,26) , which should not be greater than 25cmH ₂ O ^(26,29,33) to 30cmH ₂ O ^(14,17) , 25cmH ₂ O ^(26,29,33) .
Exchanging the cannula	This must be done by trained professionals ^(17,22,30) , as indicated by the manufacturer ⁽²⁶⁾ .

(the Figure 3 continue in the next page...)

Airway care	
Protecting the stoma	Use protective devices (cord) when in the shower ^(11,20) and filters to cover the stoma and prevent particles from being inhaled ⁽²⁰⁾ . Cotton, plastic or crochet protectors can be used and are available in the market in various colors; patients can also use tissues, jewelry, turtle necks, or scarves to cover and protect the stoma ⁽¹¹⁻¹²⁾ .
Emergency situations	Know the complications that can take place ^(22,24-25,29-31) . Check if the inner cannula is obstructed ⁽²⁰⁻²¹⁾ . Perform a deep aspiration ^(12,20-21,25) . Replace the outer tube of the tracheostomy if it is obstructed ^(12,20-21) . Know a telephone number for emergency support ^(20-21,25) . Reinsert the tube if necessary ^(12,25,30) .
Humidifying	Humidify to keep secretions hydrated, facilitate removal, and reduce the risk of mucous obstructions ^(18,21,26,31,33) . Use a warm mist humidifier, where the heated and humidified gas is inhaled by the patient ^(11,13,17,29-30,36) , humidify the environment ^(20,30,32) , or nebulize with saline ^(13,30,32) .
Aspirating	Perform an effective aspiration; studies recommend doing so pre-oxygenation ^(13,20,26,30) .
Mobilizing secretions	Encourage coughing ^(14,16,18,20) , guide adequate fluid intake that makes secretion more fluid ^(14,20,30) .
Daily-life activities	
Oral hygiene	Maintain oral hygiene ^(17-18,23,26) . Brush the teeth ^(20,26,34) . Use chlorhexidine mouthwashes ^(20,26) .
Education	Study about care with the stoma ^(10-11,17,20,30-32,34,36) , endocannula ^(10,20,30,34) , aspiration ^(20,30,34) , the cuff ⁽²⁰⁾ , baths ^(18,34) , the change of the fastener ^(30,34) , the reinsertion of the tube ⁽³⁰⁾ , the cleaning and operation of the portable aspirator ^(23,34) , and with regard to emergency management ^(20,30) . Discussing issues related to sexuality, lifestyle, physical activity ⁽¹¹⁾ , nutrition ^(11,32) , vocal rehabilitation ^(25,32) , hygiene ^(18,23,34) , prevention of complications ^(20,30) , use of protective products ⁽³⁶⁾ and tooth brushing ⁽³⁴⁾ . Teach elements of anatomy, airway physiology ^(20,25) , concepts and purpose of tracheostomy ^(18,24,31) , airway care ⁽¹⁸⁾ , natural filtering and humidification ⁽²⁵⁾ , patient personal information ⁽³¹⁾ , types of cannula ^(22,25,31) , and the meaning of the aspect of the secretion ⁽²⁰⁾ .
Nutrition	Encourage the tracheostomized patient to drink liquids ⁽¹⁴⁾ , eat and chew food slowly before swallowing ⁽¹⁸⁾ , eat sitting down, and maintain the position after one hour of each meal ⁽¹²⁾ . Guide the patient to have an adequate and balanced diet ⁽³¹⁻³²⁾ , rich in calories and protein ⁽¹¹⁾ , to consume foods of thick consistency as they are easier to swallow ⁽¹²⁾ , increase the consumption of pasty foods (such as ice cream and jelly), consume foods and liquids in small portions, and suck on ice chips or hard candy in case of dry mouth ⁽¹¹⁾ .
Self-care	Encourage the tracheostomized patient to have independence and autonomy in this new stage of their life ^(10,18) . Evaluate individual skills, capacity, and abilities ^(18,22) , and then identify if the patient is able to assume their care and whether they live alone or have someone to assist in this process ⁽²⁰⁾ .
Psychosocial topics	Encourage conversation, crying, expressing feelings, and psychotherapy in groups, which helps the patient reduce their emotional response ⁽²⁸⁾ . Be attentive for possible psychological disorders ⁽¹⁰⁾ , such as depression, which can manifest itself in patients with poor self-care ⁽²⁰⁾ . Observe patient's statements about their value, self-esteem ⁽²⁸⁾ , and their relationship with self-image ⁽²³⁾ .
Communication	Use digital occlusion ^(17,20,27) , images and letters ^(12-14,16-17,19,29) , whiteboards for written communication (writing tablets) ^(12-13,16,18-19,26,28) , flash cards with common words ⁽¹⁶⁾ , lip reading ^(12-14,19,19,26) , facial expressions ^(16-17,19) , gestures ^(11,15-17,19,27) , and signaling ^(17,19) . Ask direct questions (yes or no questions that can be answered by shaking one's head) ^(12,28) . A pad and a pencil must be at hand ^(11-17,19,26) , in addition to computerized means of communication ⁽¹⁷⁾ .

Figure 3 – Nursing care and guidance for tracheostomy management. Niterói, RJ, Brazil, 2023

Discussion

Stoma care is a major challenge for tracheostomized patients. A study with patients and caregivers found that the adversities they experienced were related with tracheostomy management, since dressing and cleaning the internal cannula are complex procedures, especially in the first days of arriving home⁽³⁾.

Tracheostomy patients require several types of specific care, such as dressing changes, endocannula cleaning, replacement of the fastener, aspiration, and humidification. This corroborates another investigation, which highlights the care provided by the nurse, including vital sign assessment, correct aspirations, and care with the dressing, in addition to effective communication during guidance to patients and their families⁽³⁸⁾.

Patients must receive guidance about the risks in using cotton or frail gauze, that can leave threads behind^(12,14-15,17,19), in addition to orientation about not to cutting the gauze^(13,20-21,30). Also, they need to receive explanations about the fact that the technique performed by them is different than the sterile one carried out in the hospital⁽²⁰⁾, and be taught how to perform clean techniques⁽¹²⁾, with basic care such as washing their hands before changing the dressing^(20,25). If possible, they should have another person present, to give support and help avoid the accidental displacement of the tracheostomy^(14,33).

Immediate complications are those which take place in the first seven days after the tracheostomy, including hemorrhage, obstruction of the cannula with thick secretions, accidental removal of the cannula, local infections, subcutaneous emphysema, bronchoaspiration, and changes in swallowing⁽³⁹⁾.

Tracheostomized patients can experience many complications after discharge, such as the accidental removal of the cannula at home, which can cause fear and insecurity during care; thus, they must receive guidance about how to act when confronted with this type of situation⁽³⁾.

Since the stoma is an opening, it needs to be

protected and cared for to avoid particles from entering the trachea⁽³⁶⁾. The research analyzed indicates that one must prevent water from entering the stoma, especially when in the shower^(20,24,31,34,36). Certain habits should also be avoided, such as sleeping with domestic animals, as they can shed hair that can be inhaled⁽²⁰⁾; using aerosols and talcum powder⁽¹⁷⁾; exposure to dust⁽²⁰⁾; activities that produce dirt, such as gardening⁽¹¹⁾; and sports such as swimming^(11,31).

Care to tracheostomized patients includes preventing, identifying, and treating complications^(18,23,31). The patient, their family and their caregivers must receive orientations about daily care to prevent complications, and explanations about the procedures that must be adopted in emergencies⁽²³⁾, such as cardiopulmonary resuscitation in the stoma^(11,13,30,33,35).

Since the tracheostomized patient has trouble communicating via speech, a special phone is necessary so, in an emergency, they can contact their doctor or a local emergency team. It is also necessary to prepare for the case of fires, since the sense of smell of these patients is affected, and does not work⁽¹¹⁾.

Mobile applications are a possibility of communication for patients with tracheostomy due to laryngeal cancer, according to Horta's Basic Human Needs Theory, since these tools allow the patient to express their needs with a simple touch on the device, which is programmed to produce the sound of a message, making sure receiver and user are aware of the information sent⁽⁴⁰⁾. Tracheostomized patients have their speech affected, and need to learn new ways to convey messages. Vocal reeducation must be started as soon as possible⁽¹⁰⁾, so the patient can express themselves and their feelings⁽²⁹⁾, becoming calmer and safer⁽²⁷⁾.

After tracheostomies, patients need to learn alternatives for spoken verbal communication. These include esophageal voice, electrolarynx, and tracheoesophageal voice. Another option is non-verbal communication, which can be exercised using gestures and lip movement⁽³⁹⁾, according to the findings of this review.

A communication evaluation includes the

patient's ability to see, hear, touch, write, and understand, or use their face for expressions such as a smile or a coded blink. It must be followed by a communication plan of care, also taking into account the involvement of patients' families and caregivers⁽¹⁷⁾.

Communicating with a person who lost the ability to speak after a tracheostomy demands special attention and care. It is essential to provide extra attention to nonverbal communication, such as facial expressions and the movement and position of hands and body. Written communication demands calm, since writing can take time and it is difficult to express emotions and thoughts in writing. Patients should not be asked two questions at the same time and should be allowed to finish their sentences⁽¹²⁾.

A tracheostomy tube can affect swallowing and compromise a patient's nutritional state^(17,19); on the other hand, stomized patients must get adequate nutrition to allow adequate wound healing^(11,20), improve the strength of respiratory muscles^(13,20), and fight infections⁽¹³⁾.

Some of the main factors that reduce the quality of life of tracheostomized patients include body image, voice, and swallowing, all of which require adaptations. The new way of life the individual must have can lead to anguish and trouble carrying out basic activities, such as eating, communicating, and having social relationships⁽³⁹⁾.

Psychosocial aspects can be affected by a tracheostomization process, and are as important as physical ones⁽²⁹⁾. Many patients will deal with several states of grief, from the moment they recognize the change until they accept it⁽¹²⁾. The self-care of tracheostomized patients' needs to be encouraged, enabling them to be independent and autonomous in this new stage of their lives^(10,18). To do so, their competences, capacity, and individual abilities must be evaluated^(18,22); then, it is necessary to ascertain whether the patient is able to assume their own care. It is also necessary to consider whether they live alone or have someone to help them during this process⁽²⁰⁾.

Self-care promotion should be encouraged be-

fore surgery⁽¹²⁾, to convey confidence to the patient, reduce anxiety, and be a positive influence toward a satisfactory level of self-care⁽³²⁾. We must pay attention to the statements of patients about their self-esteem⁽²⁸⁾ and their relationship with their self-image⁽²³⁾. It is possible to use tools, such as software, to teach self-care⁽²⁵⁾.

Educating tracheostomy patients is essential for their autonomy, safety, independence, and for a safe transition from hospital to home and the community^(17,20). Education must involve the patient, as well as their family and caregivers, who will be effective participants in the provision of care⁽²⁰⁾; also, it must start before tracheostomy itself, in the preoperative period⁽³⁰⁾.

Techniques involving simulations, demonstrations, printed materials, audiovisual materials, protocols, and rounds of conversation, such as care education technologies to aid in educating parents and caregivers as they care for the tracheostomy cannula at home⁽⁴¹⁾ are elements of the learning process that stood out. The same is true for the use of booklets and videos for the health education of tracheostomized patients and their caregivers in the discharge process⁽³⁸⁾.

These educational tools corroborate our findings, which suggest, as educational methods, forming support groups with other tracheostomized patients⁽³⁶⁾, providing written information^(18,20,26,32), illustrations⁽³²⁾, practical demonstrations of care techniques^(20,30), educational booklets^(31,35), educational videos^(25,35), and expository classes⁽²⁵⁾. The material produced presents options to strengthen verbal information. It is a plan including orientation about situations where there may be doubt, and aids in the decision making process of the tracheostomized person⁽¹⁸⁾.

Adequate health education facilitates patient learning and encourages them to perform activities with autonomy⁽²⁸⁾, developing skills for self-care⁽¹¹⁾. Therefore, patients and caregivers can learn how to manage tracheostomy care, as long as they are guided and informed throughout the perioperative process.

These orientations can lead to positive transformations in the experience of these individuals⁽³⁾.

Study limitations

The integrative literature review allowed us to map a significant number of studies related to the topic. However, many of our findings about tracheostomized patients were related to the hospital context of the intensive care unit. Therefore, further research is necessary regarding orientations and care in the discharge process of this population.

Contributions to practice

The identification, summarization, and organization of the best evidence on the daily clinical practice of nurses enable the use of quality scientific material for a fast implementation in clinical practice, especially with regard to preparing tracheostomized patients for discharge.

Conclusion

This research allowed identifying the main evidence about care guidelines to be provided by tracheostomized patients. Certain orientations stood out as essential, such as those associated with tracheostomy management, which include caring for the stoma, cleaning the endocannula, and replacing the fastener and the cannula; those related to care for the airways, such as protecting the stoma, making the secretion more fluid, and acquiring complex technical skills to aspirate and take action in an emergency situation, such as obstruction of the tracheostomy tube; and those associated with guidance about daily life activities, according to which the patient must be examined as a whole, considering daily-life aspects, such as oral hygiene, nutrition, and hydration, and psychosocial elements, such as patient communication, self-care, and emotional aspects.

Authors' contribution

Concept and design or analysis and data interpretation; writing of the manuscript or relevant critical review of the intellectual content; final approval of the version to be published; Responsibility for all aspects of the text and for guaranteeing the precision and integrity of any part of the manuscript: Pitzer MB, Flores PVP.

Writing of the manuscript or relevant critical review of the intellectual content; responsibility for all aspects of the text and for guaranteeing the precision and integrity of any part of the manuscript: Silva MSL. Concept and design or analysis and data interpretation; Responsibility for all aspects of the text and for guaranteeing the precision and integrity of any part of the manuscript: Dias AC, Santos LCL.

References

1. Guimarães MF, Moreira MJS, Lopes L, Moreti F. Letter to Brazilian Association of Mouth and Throat Cancer. *CoDAS*. 2019;31(3):e20180122. doi: <http://doi.org/10.1590/2317-1782/20182018122>
2. Ministério da Saúde (BR). Instituto Nacional de Câncer José Alencar Gomes da Silva. Estimativa 2023: incidência de câncer no Brasil [Internet]. 2023 [cited Aug 23, 2023]. Available from: <https://www.inca.gov.br/sites/ufu.sti.inca.local/files//media/document//estimativa-2023.pdf>
3. Pitzer MB, Flores PVP, Dias AC. Dificuldades vivenciadas pelo paciente e cuidador no pós-operatório de traqueostomia. *Rev Recien*. 2022;12(39):76-86. doi: <https://dx.doi.org/10.24276/rrecien2022.12.39.76-86>
4. Neiva RO, Nogueira MC, Pereira AJ. Consulta pré-operatória de enfermagem e o autocuidado do paciente oncológico com ostomia respiratória. *Braz J Enterostomal Ther*. 2020;18:e2920. doi: https://doi.org/10.30886/estima.v18.914_PT
5. Soares THV, Barreiro BA, Franco CM, Reis EDC, Fiorillo GO, Gualter JPT, et al. Traqueostomia: indicações, técnicas, cuidados, complicações e decanulação. *REAMed*. 2023;23(4):1-7. doi: <https://doi.org/10.25248/reamed.e12502.2023>

6. Nascimento TS, Arcanjo ABB, Fernandes MJ. Indicações de traqueostomia em uma unidade de terapia intensiva. *Arch Health Sci.* 2023;30(1):1-5. doi: 10.17696/2318-3691.30.1.2023.176
7. Daraie S, Hasanvand S, Goudarzi F, Rassouli M. Gaining experience over time: the family caregivers' perception of patients with a tracheostomy in home care. *Iran J Nurs Midwifery Res.* 2021;26(2):137-43. doi: https://dx.doi.org/10.4103/ijnmr.IJNMR_173_20
8. Amar-Dolan LG, Horn MH, O'Connell B, Parsons SK, Roussin CJ, Weinstocket PH, et al. "This is how hard it is". Family experience of hospital-to-home transition with a tracheostomy. *Ann Am Thorac Soc.* 2020;17(7):860-8. doi: <https://doi.org/10.1513/AnnalsATS.201910-7800C>
9. Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H. Chapter 11: Scoping Reviews (2020 version). In: Aromataris E, Munn Z (Editors). *JBIM Manual for Evidence Synthesis*, JBO Global Wiki. 2020. doi: <https://doi.org/10.46658/JBIMES-20-12>
10. Aguillar OM, Angerami ELS. Avaliação da orientação sistematizada na reabilitação da voz de pacientes laringectomizados. *Rev Esc Enferm USP.* 1983;17(1):47-60. doi: <https://doi.org/10.1590/0080-6234198301700100047>
11. Shellenbarger T, Narielwala S. Caring for the patient with laryngeal cancer at home. *Home Healthc Nurse.* 1996;14(2):80-8. doi: <https://doi.org/10.1097/00004045-199602000-00002>
12. Serra A. Tracheostomy care. *Nurs Stand.* 2000;14(42):45-52. doi: <http://doi.org/10.7748/ns2000.07.14.42.45.c2872>
13. Tamburri LM. Care of the patient with a tracheostomy. *Orthop Nurs.* 2000;19(2):49-58. doi: [10.1097/00006416-200019020-00008](https://doi.org/10.1097/00006416-200019020-00008)
14. Woodrow P. Managing patients with a tracheostomy in acute care. *Nurs Stand.* 2002;16(44):39-46. doi: <https://doi.org/10.7748/cnp.v1.i8.pg42>
15. Choate K, Barbetti, J. Tracheostomy: your questions answered. *Aus Nurs J* [Internet]. 2003 [cited Aug 3, 2023];10(11):1-4. Available from: https://www.researchgate.net/publication/5287970_Tracheostomy_your_questions_answered
16. Wright SE, VanDahm K. Long-term care of the tracheostomy patient. *Clin Chest Med.* 2003; 24(3):473-87. doi: [https://dx.doi.org/10.1016/s0272-5231\(03\)00054-6](https://dx.doi.org/10.1016/s0272-5231(03)00054-6)
17. Healthcare Improvement Scotland. Caring for the patient with a tracheostomy [Internet]. 2007 [cited Aug 3, 2023]. Available from: https://www.healthcareimprovementscotland.org/previous_resources/best_practice_statement/caring_for_the_patient_with_a.aspx
18. Freitas AAS, Cabral IE. O cuidado à pessoa traqueostomizada: análise de um folheto educativo. *Esc Anna Nery.* 2008;12(1):84-9. doi: <https://doi.org/10.1590/S1414-81452008000100013>
19. Regan EN, Dallachiesa L. How to care for a patient with a tracheostomy. *Nursing.* 2009;39(8):34-9. doi: [10.1097/01.NURSE.0000358572.79112.bd](https://doi.org/10.1097/01.NURSE.0000358572.79112.bd)
20. Frace MA. Tracheostomy care on the medical-surgical unit. *Med Surg Nurs* [Internet]. 2010 [cited Aug 3, 2023];19(1):58-61. Available from: <https://go.gale.com/ps/i.o?p=AONE&u=googlescholar&id=GALE|A221270273&v=2.1&it=r&sid=AONE&asid=3d9db91e>
21. Morris L, Afifi S. Tracheostomies: the complete guide. *Emerg Nurse.* 2011;19(2):9. doi: <https://doi.org/10.7748/en.19.2.9.s4>
22. Mitchell RB, Hussey HM, Setzen G, Jacobs IN, Nussenbaum B, Dawson C, et al. Clinical consensus statement: tracheostomy care. *Otolaryngol Head Neck Surg.* 2012;148(1):6-20. doi: <https://doi.org/10.1177/0194599812460376>
23. Donoso MTV, Silqueira SMF, Barbosa RCGA, Vasconcelos TRC, Anastácio VLA. Oxigenoterapia e ventilação mecânica em atenção domiciliar [Internet]. 2013 [cited Aug 8, 2023];1-82. Available from: <https://www.nescon.medicina.ufmg.br/biblioteca/imagem/4259.pdf>
24. Castro AP, Oikawa SE, Domingues TAM, Hortense FTP, Domenico EBL. Educação em saúde na atenção ao paciente traqueostomizado: percepção de profissionais de enfermagem e cuidadores. *Rev Bras Cancerol.* 2014;60(4):305-13. doi: <https://doi.org/10.32635/2176-9745.RBC.2014v60n4.445>
25. Loerzel VW, Crosby WW, Reising E, Sole ML. Developing the tracheostomy care anxiety relief through education and support (T-CARES) program. *Clin J Oncol Nurs.* 2014;18(5):522-7. doi: <https://doi.org/10.1188/14.cjon.522-527>

26. Myatt R. Nursing care of patients with a temporary tracheostomy. *Nurs Stand*. 2015;29(26):42-9. doi: <https://doi.org/10.7748/ns.29.26.42.e9742>
27. Gaspar MRF, Massi GA, Gonçalves CGO, Wilig MH. A equipe de enfermagem e a comunicação com o paciente traqueostomizado. *Rev CEFAC*. 2015;17(3):734-44. doi: <https://dx.doi.org/10.1590/1982-0216201514214>
28. Díaz RRM. Plan de cuidados individualizado al paciente laringectomizado. *Ene* [Internet]. 2018 [cited Aug 3, 2023];12(1):701. Available from: <https://scielo.isciii.es/pdf/ene/v12n1/1988-348X-ene-12-01-701.pdf>
29. Billington J, Luckett A. Care of the critically ill patient with a tracheostomy. *Nurs Stand*. 2019;34(2):59-65. doi: <https://doi.org/10.7748/ns.2019.e11297>
30. Costa ECL, Rodrigues CF, Matias JG, Bezerra SMG, Rocha DM, Machado RS, et al. Care for the prevention of complications in tracheostomized patients. *Rev Enferm UFPE on line*. 2019;13(1):169-78. doi: <https://doi.org/10.5205/1981-8963-v13i1a238545p169-178-2019>
31. Karaca T, Altinbas Y, Aslan S. Tracheostomy care education and its effect on knowledge and burden of caregivers of elderly patients: a quasi-experimental study. *Scand J Caring Sci*. 2019;33(4):878-84. doi: <https://doi.org/10.1111/scs.12684>
32. León-Fernández S, Pardo-Refoyo JL. Investigación bibliográfica sobre la atención de enfermería en la laringectomía total. *Rev ORL*. 2019;10(2):13. doi: <https://doi.org/10.14201/orl.19366>
33. Patton J. Tracheostomy care. *Br J Nurs*. 2019;28(16):1060-2. doi: <https://dx.doi.org/10.12968/bjon.2019.28.16.1060>
34. Cherney RL, Pandian V, Ninan A, Eastman D, Barnes B, King E, et al. The trach trail: a systems-based pathway to improve quality of tracheostomy care and interdisciplinary collaboration. *Otolaryngol Head Neck Surg*. 2020;163(2):232-43. doi: <http://doi.org/10.1177/0194599820917427>
35. Ramírez WO, González CG, Villasana GJP, Vásquez JAL. Efecto de una intervención educativa para la prevención de reingreso hospitalario por complicación en usuario con traqueostomía. *Nure Inv* [Internet]. 2020 [cited Aug 3, 2023];17(104):1-6. Available from: <https://www.nureinvestigacion.es/OJS/index.php/nure/article/view/1871/903>
36. American Cancer Society (EUA). Living as a laryngeal or hypopharyngeal cancer survivor [Internet]. 2021 [cited Aug 3, 2023]. Available from: <https://www.cancer.org/cancer/laryngeal-and-hypopharyngeal-cancer/after-treatment/follow-up.html>
37. Khanum T, Zia S, Khan T, Kamal S, Khoso MN, Alvi J, et al. Assessment of knowledge regarding tracheostomy care and management of early complications among healthcare professionals. *Braz J Otorhinolaryngol*. 2022;88(2):251-6. doi: <https://doi.org/10.1016/j.bjorl.2021.06.011>
38. Pitol SB, Costa AEK, Lohmann PM. Nursing care for tracheostomized patients admitted to a medium-sized hospital in Vale do Taquari-RS-Brazil. *Res Soc Develop*. 2021;10(5):e27010512606. doi: <https://doi.org/10.33448/rsd-v10i5.12606>
39. Bozec A, Boscagli M, Serris M, Chamorey E, Dassonville O, Poissonnet G, et al. Long-term functional and quality of life outcomes in laryngectomized patients after successful voice restoration using tracheoesophageal prostheses. *Surg Oncol*. 2021;38:101580. doi: <https://doi.org/10.1016/j.suronc.2021.101580>
40. Neves WFS, Correa Júnior AJS, Dias ALL, Sonobe HM, Santana ME. Prototipagem de um recurso alternativo de comunicação para a pessoa com câncer de laringe traqueostomia. *Res Soc Develop*. 2021;10(4):e26410413990. doi: <https://doi.org/10.33448/rsd-v10i4.13990>
41. Tres DA, Cipolato FA, Castro ES, Uberti C, Martini RG, Toso BRGO, et al. Tecnologias cuidado-educativas para o cuidado domiciliar de crianças traqueostomizadas: revisão integrativa. *Res Soc Develop*. 2022;11(2):e2811225210. doi: <https://doi.org/10.33448/rsd-v11i2.25210>



This is an Open Access article distributed under the terms of the Creative Commons