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Promotion of tracheostomy self-care: a qualitative study based on the nurses' perspective

Sílvia Maria Moreira Queirós^{1,2}, Igor Emanuel Soares Pinto^{1,3,4}, Maria Alice Correia de Brito⁴, Célia Samarina Vilaça de Brito Santos⁴

¹Institute of Health Sciences, Universidade Católica Portuguesa, Porto, Portugal

²Quality and Patient Safety Unit, Hospital Epidemiology Center, Centro Hospitalar Universitário de S. João, Porto, Portugal

³Surgery Department, Hospital Pedro Hispano, Unidade Local de Saúde de Matosinhos, Portugal

⁴Nursing School of Porto, Porto, Portugal

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Abstract

Aim: To describe nurses' perspectives on promoting tracheostomy self-care. There is little information on the nurses' perspective as care providers with knowledge of clinical contexts. **Design:** A qualitative descriptive study was conducted. **Methods:** A purposeful sample of nurses was selected from eight Portuguese hospitals. Recruitment ended once data saturation was reached (n = 12). Data were collected using semi-structured interviews and analysed through content analysis. **Results:** The nurses described the most important aspects to promote tracheostomy self-care, namely the objectives, the contents to be addressed, the methods and resources to be used, the appropriate moment to intervene, the necessary conditions to promote self-care, the way to ensure the standardisation of interventions among nurses, and the level of tailored planned interventions. **Conclusion:** From the nurses' perspective, promoting tracheostomy self-care is critical for regaining autonomy. Therefore, it is crucial to establish an intervention plan sensitive to individual needs and preferences. These results can help elucidate the aspects considered by nurses when promoting tracheostomy self-care so that more meaningful and feasible care models can be designed.

Keywords: content analysis, nurse's perception, qualitative research, self-care, tracheostomy.

Introduction

Self-care has increasingly been a focus of attention by nurses (Jaarsma et al., 2020), namely in people with a stoma (Villa et al., 2019). Self-care competence has been associated with improved quality of life (Zhang et al., 2019), adaptation to the new condition (Altınbaş et al., 2021), reduced complications, and a consequent reduction of hospital readmissions (Graboyes et al., 2017; Hardiman et al., 2016). For this reason, there is growing interest in researching self-care and improving disciplinary knowledge about this nursing focus (Riegel et al., 2021).

While there has been an increase in research into self-care worldwide, the advancements in building significant evidence related to nursing interventions to promote self-care seem to be considerably slower (Jaarsma et al., 2020). Few research studies addressing self-care use systematic methodological

processes. This has hindered the development of robust self-care interventions capable of changing clinical practice (Jaarsma et al., 2020). In fact, there is no evidence to guide nurses regarding the most effective interventions to promote tracheostomy self-care (Mitchell et al., 2013; Spito & Cavaliere, 2019). This may partly explain why the promotion of tracheostomy self-care is inconsistent among institutions, is poorly standardised, and lacks systematised guidelines on nurses' practice (Colandrea & Eckardt, 2016; Swords et al., 2018). This shows the need to produce evidence to guide nurses' clinical practice in this area (Queirós et al., 2021).

Most nursing interventions to promote self-care are complex (Jaarsma et al., 2020). An intervention can be complex, considering its specificities, including the number of components involved, behaviours, targeted groups or environments, and the experience and skills required by intervention recipients and providers (Skivington et al., 2021). The development of complex nursing interventions in self-care often requires multiple research studies (Jaarsma et al., 2020). The careful and rigorous development

Corresponding author: Sílvia Maria Moreira Queirós, Rua António Patrício, n°68, 3° esquerdo traseiras, 4460-204 Custoias, Matosinhos, Portugal; email: silvia.queiros86@gmail.com

of a complex intervention is essential to guarantee a more effective evaluation and implementation in clinical practice (O’Cathain et al., 2019). What is common to the different guiding principles for designing complex interventions include an evidence-based intervention with a solid theoretical foundation, matching the needs, capabilities and preferences of recipients and providers, and adapting to the context of practice (Bartholomew et al., 2011 cited by Bleijenberg et al., 2018; van Meijel et al., 2004).

An approach that encompasses experts, care recipients, and care providers may increase the feasibility and effectiveness of the intervention (van Meijel et al., 2004). Furthermore, knowing about their perspective and involving them in the development and evaluation of interventions could positively impact health gains and produce a change in clinical practice and institutional policies (Skivington et al., 2021). For this reason, nurses are expected not only to implement complex interventions but also to contribute to their development to respond to people’s needs (Rodríguez et al., 2020) and to adapt to the existing clinical settings. This should be done by exploring meanings, reasons for action, and context-related possibilities or constraints (Schraube & Osterkamp, 2013). In recent times, the importance of qualitative methods has been acknowledged in both the development and assessment of health interventions (Yardley et al., 2021). For this reason, researchers are increasingly exploring the perception of those involved to understand current practice and develop new and acceptable nursing interventions in different areas (Matthias et al., 2021; Smyth et al., 2021).

Thus, the purpose of this qualitative study with clinical practice nurses in Portugal was to support the development of a nursing intervention programme to promote tracheostomy self-care, sensitive to the needs perceived by nurses and applicable in clinical settings. To develop an intervention programme that supports tracheostomy self-care improvement, it is useful to first explore nurses’ current practice, along with their values, beliefs, and any external factors that may influence their practice. This means it is possible to can be anticipate and address providers’ concerns and challenges to implementing the intervention, as well as potential strategies for facilitating a change to their current practice (Yardley et al., 2021).

Aim

The objective of this study was to examine how nurses perceive the promotion of tracheostomy self-care.

Methods

Design

A qualitative descriptive study was conducted using a semi-structured interview.

Sample

Participant inclusion criteria were nurses with more than five years of experience caring for people with a tracheostomy and working in the ear, nose, and throat (ENT) inpatient services and / or ENT / stomatherapy outpatient nursing consultations.

A purposeful maximum variation sample of participants was selected. The aim was to intentionally select a wide range of cases to gain broad characteristics, contexts, and perspectives of findings (Beck & Polit, 2019; Creswell, 2012). Thus, we selected participants who had diversified sociodemographic and training characteristics, who worked in hospitals that included different care models for people with a tracheostomy, and who served different populations. In Portugal, as in other countries worldwide (Giordano et al., 2020), not all hospital institutions have either a structured clinical pathway for patients with a tracheostomy or a preoperative and follow-up supportive model specialised in stoma care.

The referral of potential participants was obtained through the Associação Portuguesa de Enfermeiros de Cuidados em Estomaterapia [Association of Portuguese Stomatherapy Care Nurses], as they were familiar with nurses working in the different targeted care settings. The main researcher (first author) carried out the first contact with potential participants via telephone or email, and the scope of the study and the voluntary nature of participation were explained. None of the participants contacted refused to participate in the study.

Data collection

Data were obtained through semi-structured, individual interviews, by videoconference (n = 10), or if the participant preferred, by telephone (n = 2). This option facilitated compliance with the social-distancing requirements imposed in response to the Covid-19 pandemic and allowed for more widespread data collection, as geographically distant participants could be included. Data collection from nurses was conducted between May 2020 and December 2021. Data were collected until data

saturation was reached, meaning that no new themes emerged from the data. The research team agreed that they had reached saturation after the twelfth interview was conducted.

The interviews took place at a time agreed upon by participant and main researcher so as to ensure privacy and the most favourable timing. Each interview was preceded by a brief collection of data on the participant's demographic and professional characteristics. Table 1 summarises the participants' characteristics.

The interviews lasted between 27 and 55 minutes (average 39.5 minutes). The main researcher (female, specialist nurse, MNs, PhD student) conducted all interviews to ensure consistency. Regarding her relationship with participants, the main researcher previously knew four of the participants only professionally or in a training context. For this

reason, there was no conflict of interest or prior personal assumptions between the participants and the researcher. The main researcher received specific training in interviewing during her doctoral education and with the senior co-authors of the research (the third and fourth authors), who have extensive experience in qualitative research using interviews.

An interview guide was developed following the objective of the study (Table 2). Before the study was conducted, the script was tested on two nurses from ENT inpatient and / or outpatient services. The aim was to evaluate and improve the script to ensure that the information was understood and that relevant data were produced in the interviews (Young et al., 2018). The questions proved to be clear and understandable. The data obtained from these interviews were not included in the study.

Table 1 Characterisation of nurses' participants

Demographic and professional characterization (n = 12)		n (%) or mean (range; SD)
Age		47.6 (33–61; 8.91)
Gender	female	11 (91.67)
	male	1 (8.33)
Qualifications	stomatherapy nurse	7 (58.30)
	specialist nurse	8 (66.70)
	master in nursing	2 (16.70)
	nurse manager	1 (8.30)
Years as a nurse		24.67 (11–39; 8.84)
Years as a nurse in tracheostomy care		18.83 (6–39; 9.88)
Current unit / service	ENT inpatient	4 (33.30)
	ENT or stomatherapy nursing outpatient consultation	5 (41.70)
	both	3 (25.00)
Characterization of the hospital where care is provided	central polyvalent hospital	3 (25.00)
	peripheral polyvalent hospital	3 (25.00)
	oncology hospital	6 (50.00)

ENT – ear, nose and throat; SD – standard deviation

Table 2 Script of the semi-structured interview to the participating nurses

Main questions of the participants' interview
Talk about the nurse role in promoting tracheostomy self-care.
Talk about the preoperative nursing consultation for the person referred to a tracheostomy. ^a
Talk about promoting tracheostomy self-care during hospitalization. ^a
Talk about the nursing follow-up after hospital discharge. ^a
What would you like to see improved in the nursing care model for tracheostomy self-care?

^aSome of the questions could not be answered, considering the context of the professional practice of the nurse participant.

Data analysis

The interviews were audio-recorded and transcribed verbatim in the original language by the main researcher. Interview content analysis was subsequently performed according to Bardin (2016), using the categorical analysis technique. This analysis was performed in three chronological

phases: pre-analysis, material exploration, and treatment of results, inferences, and interpretations (Bardin, 2016). After a repeated reading of the transcripts to fully understand their content, each interview was simultaneously analysed in detail by two researchers (the first and second authors). The significant content of each interview was cut

into recorded units (coding) and subsequently grouped and classified into categories and subcategories (categorisation) according to their similarity and meaning. Thus, categorisation in this study resulted from an inductive process with categories defined as a posteriori (Elo & Kyngäs, 2008). Subsequently, all recorded units, subcategories, and categories were analysed by all the researchers until a consensus was reached about coding and categorisation. The NVivo software was used for data processing.

Results

From the content analysis of the interviews, the theme *promotion of tracheostomy self-care* was divided into seven categories and twenty-eight subcategories, as shown in Table 3. The participants' quotations supporting each category and subcategory identified are presented throughout the text. Each quotation is referenced with the letter N (nurse) and the participant's unique identification number (N1 to N12).

Table 3 Theme: Promotion of tracheostomy self-care

Category	Subcategory
Objective Content	rebuilding autonomy
	the surgery and its consequences tracheostomy care and devices prevention, detection, and management of complications encouraging care participation awareness about tracheostomy and care significance improving self-efficacy perception involving and empowering the family for care selection, access, and availability of devices tracheostomy assessment, tracheostomy self-care competence, and universal self-care requirements care monitoring and follow-up support
Methods and resources	face to face
	written information
	telephone
	video
	images
	materials and devices
	mannequin
Necessary conditions	cognition and physical ability
	visual acuity
	willingness to learn
Proper intervention moment	painless
	after tolerating getting up postoperatively
	free of postoperative devices / equipment
	initiated awareness
Person-centeredness Uniformization	adapting content, method and dose to individual needs and preferences
	protocols, manuals, or guidelines training links

Objective

The participants identified *regaining of autonomy* in tracheostomy self-care as an *objective* of promoting tracheostomy self-care, that is, the person being able to care for his / her stoma. *“The main objective is to provide autonomy to these patients; not to keep them dependent on healthcare services.”* (N3)

Content

In the category *content*, participants described the issues that should be addressed by nurses in promoting tracheostomy self-care.

The participants mentioned that it was necessary

to describe *the surgery and its consequences*, such as informing the person about the surgical procedure, the changes resulting from the surgery, and what to expect in the postoperative period, to prepare for future. *“There’s a common process, which is surgery: what this surgery is, the changes after surgery. It’s a common component to all patients.”* (N3) *“... there is a great deal of preparation for what will follow.”* (N8)

We should also address *tracheostomy and device care*, namely training the person to prepare the necessary material for care, cleaning the stoma, the surrounding skin, and the speech prosthesis, if any, as well as changing and caring for

the tracheostomy devices. “... *teaching about the cannula, stoma, and skin care.*” (N12)

Concerning the *prevention, detection, and management of tracheostomy complications*, it was described that the nurse should inform the person about how to prevent stoma, speech prosthesis, if any, and surrounding skin complications. In addition, they should empower people to identify and manage these complications, highlighting the situations in which they should reach out to a healthcare service.

Encouraging care performance was also identified as necessary. This consists of encouraging the person to become involved in care and to participate in and perform care so that they become capable of caring for themselves. “*Because there are patients who don’t want to learn, we must try to encourage and support them so they can care for their stoma.*” (N4)

Tracheostomy awareness and the importance of care was another topic referred to by the participants as fundamental, since it is necessary that the person internalises and integrates the stoma into his / her life and recognises the need to learn how to care for the stoma so that he / she can maintain a permeable airway. “... *provide information so that the patient can become more aware of the surgery [...] and the surgery’s implications ...*” (N12) “*It’s essential to make them understand they need to perform self-care because this is the only way they will be able to breathe.*” (N4)

Participants also mentioned the importance of nurses in *improving the person’s perception of self-efficacy*, showing them that with training and repetition, they can perform skilled care. “*The more they train, the more confident and capable they will be. And we are able to show people what they are really capable of doing. And we often need to repeat this process.*” (N3)

Concerning the *involvement and empowerment of the family in care*, participants highlighted the importance of encouraging the family / significant others to help the person and learn the necessary care to provide the expected support and help when the person returns home. “*But we ask for support from family to be there because they can have doubts when they arrive home. This is also good because they know family is there to help them.*” (N7)

The selection of devices was another content identified by participants, who mentioned that it was necessary to guide the person in selecting the devices that would best suit the characteristics of the stoma, the individual characteristics, and the contexts in which they are used, such as in the workplace or during radiotherapy treatment. Participants also

referred to *access and availability of devices* as necessary to promote self-care, suggesting the need for them to be provided with the necessary devices for tracheostomy care or to be informed of where and how to obtain them.

Promoting self-care should also include *tracheostomy assessment and tracheostomy self-care competence assessment* to understand the evolution of the self-care competence and the stoma over time. “*We assess the patient’s ability to remove the cannula, if he / she can perform stoma self-care ...*” (N1) “... *we observe the stoma, voice prosthesis if present, we check the stoma hygiene care ...*” (N7).

It is also necessary to *assess the universal self-care requirements* conditioned by the presence of the stoma, namely body hygiene, oral hygiene, self-grooming, getting dressed, and in some cases, feeding.

Finally, participants also mentioned *care monitoring and support* as one of the contents to be included in promoting self-care. This follow-up allows previously provided information to be recalled or reinforced, motivating the maintenance of the stoma care, detecting and treating early complications, and providing continuous guidance according to the different needs that emerge over time. In addition, it provides safety and comfort to people because they feel supported and monitored. “*People already know because they have heard, but sometimes we need to repeat, recall that there are things that cannot be neglected.*” (N3) “*Overall, if I’m following up with the patient [...] it’s even possible to detect a set of complications that might be minimised or avoided.*” (N6)

Methods and resources

In the *methods and resources* category, participants identified the methods to administer interventions to promote self-care and the resources to support their implementation.

The participants mentioned that the most commonly used method of administration is individually, *face to face*, as this facilitates the acquisition of instrumental skills for stoma and device care.

Written information was also mentioned as useful to remind people about some of the contents of tracheostomy self-care, which could serve as a guide for support in case of questions. “*We would like to make a new pamphlet with the most relevant information to serve as a guide. Some patients ask me for written information with guiding steps. Some patients need written information showing each step of stoma care and replacement of the cannula. It would help them perform self-care while looking*

at the guide. In addition, there should be more information about complications / warning signs, contacts for support. This would make them feel safer and better supported.” (N5)

Participants mentioned the telephone as a method of administration often used on an unscheduled basis in response to people’s contacts for guidance in case of questions and complications. However, with the implications of the Covid-19 pandemic, it began to be used as a method of administration of structured follow-up consultations for people in late follow-up, highlighting its potential for use in a structured and regular manner and as a complement to face-to-face follow-up consultations after hospital discharge. “And the patient is provided with the consultation telephone contact so that he / she can contact us, if needed. They are constantly calling us.” (N7) “We are currently experiencing the pandemic, so we’ve had many phone consultations. We no longer have patients here, just phone consultations. [...] This made us wonder if something could be done through phone consultations. And it even made some sense during the postoperative phase.” (N2)

Videos were also mentioned as a method of administering some content, particularly to explain the surgery and its consequences, alternative methods of communication, and care with tracheostomy and its devices, or to motivate and raise awareness that it is possible to adapt to life with a stoma. “We’ve got some videos [...] about all types of stomas, well-adapted stoma patients performing self-care. They see others doing that so easily and quickly that they start to think that perhaps this is not as difficult as they had thought.” (N7)

Images were suggested as a helpful resource to explain the surgery and its consequences, namely the anatomy of the respiratory and digestive system and what is different after surgery, as well as to explain the usual appearance of a mature stoma. Tracheostomy devices and materials were other resources that participants often used to promote self-care when addressing tracheostomy care and its different devices. Some participants also mentioned that it could be useful to have a mannequin as a resource to explain to the person and the family the changes after surgery and for them to practice stoma and device care.

Necessary conditions

In the category of *necessary conditions*, the participants identified which assumptions should be ensured so that it is possible to promote self-care in the person undergoing a tracheostomy.

Thus, the participants emphasised the importance of the person having the *cognitive ability*, such as

being able to learn and retain new information and having the *physical ability*, like dexterity and motor skills, that allow them to handle the devices and perform the expected care. “... have conditions such as dexterity, cognitive ability, and memory.” (N7)

Also, the participants suggested *visual acuity* as a necessary condition to promote tracheostomy self-care since handling different devices to place in the stoma is expected.

The willingness to learn was also mentioned as essential to promote self-care. Having an interest in learning is a requirement for the person to be willing to understand and engage in this process. “In addition to the willingness to learn, which is fundamental ...” (N3) “It has a lot to do with the patient, whether he / she is interested in caring or not ...” (N12)

Proper intervention moment

In this category, the participants identified the circumstances that determine the right moment to promote tracheostomy self-care.

According to them, the proper moment to intervene is when the person has *no pain*, after he / she tolerates getting up postoperatively, and after the equipment that limits his / her mobility (such as serums, drains, among others) is removed. Participants also pointed out that when people start to *become aware* of their new condition and what the stoma implies in their future life, the willingness to learn is greater, therefore, favouring the learning process. This awareness emerges with experience, as the person lives through the change and the implications of the tracheostomy in their daily life. The participants also identified some of the signs of initiated awareness: “When they start to become aware of their new condition. A very basic thing, when they cough, for example, and stop putting their hand in their mouth and start putting it on the tracheostomy. When they realise ‘it’s not here that I have to put my hand, but lower down.’ When they look at themselves in the mirror and start seeing themselves. [...] When they start showing these signs, of being able to look in the mirror, of starting to clean the secretions in the correct site, then is the ideal time to insist on and talk to them more about self-care.” (N11)

Person-centeredness

In the category *person-centeredness*, participants emphasised the importance of considering the person’s characteristics, the stoma, and their individual needs and preferences. Thus, these should be considered when defining and adapting the contents to be addressed, selecting the methods to be used, and defining the timing and regularity of the

interventions to be implemented in promoting tracheostomy self-care. *“We’re always concerned about adapting to the person before us; it is the most important thing, and I think it makes a difference.”* (N9)

Uniformization

In the category *uniformization*, participants identified the strategies used by nurses to standardise the interventions to promote tracheostomy self-care in their clinical settings.

Protocols, manuals, or clinical practice guidelines were suggested as useful tools for standardising and systematising nursing care among professionals, when new nurses are admitted to the teams or in cases where nurse turnover is frequent.

The existence of nurses who are *training links* between the different services that promote self-care in the person with a tracheostomy to standardise performance in the different care settings and to provide training to the teams was another strategy identified by the participants. *“One of the strategies we adopted here in the hospital was to have a nurse in consultation in each department of the hospital to serve as a clinical and training link.”* (N3)

Discussion

The objective of this study was to explore nurses’ perceptions about promoting tracheostomy self-care. The participants emphasised the importance of rebuilding autonomy in the adaptive process of living with a stoma. Previous studies indicate that the development of competence in self-care is important for the person undergoing a tracheostomy to adapt to their new living condition and to continue to perform their activities of daily life (Altınbaş et al., 2021). In this population, a high level of quality of life is directly related to a high level of self-care competence (Villa et al., 2019). Thus, an educational plan is essential for the person undergoing stoma creation to ensure that the basic skills for stoma care are learned (Prinz et al., 2015).

Concerning the contents that integrate the promotion of self-care in the person with a tracheostomy, understanding the surgery and its consequences, as well as learning to care for the tracheostomy and its devices, were recognized by the participants as essential to acquire mastery in stoma care. Other authors also suggest that daily stoma care is an important challenge that people must face (Stavropoulou et al., 2021). Thus, health professionals must train people to care for the stoma, clear secretions, and even change and clean tracheostomy devices (Yang et al., 2021).

In addition to educational interventions on stoma and device care, it was also considered essential to encourage the performance of tracheostomy care. For people who express fear, reluctance, or insecurity, it is especially relevant to encourage participation and initiative and to promote their interest in acquiring autonomy in self-care. In addition, participants also mentioned the need to raise awareness about the tracheostomy, its repercussions, and the importance of stoma care. It is necessary that the person internalises and integrates the tracheostomy and its consequences as part of his / her life and recognises the value that stoma care has for overall well-being. Previous studies report that deficient care can cause severe problems in the stoma and peristomal skin and decrease the person’s confidence, affecting their rehabilitation process (Seo, 2019). Thus, to understand and enhance the awareness of the person with a stoma, nurses should create opportunities that allow the person to express thoughts and feelings and become aware of the change, thus contributing to their adaptation (Tao et al., 2014).

Improving the perception of self-efficacy was also suggested as one of the contents to be included in promoting tracheostomy self-care. The concern with the stoma, the consequences of the stoma, the possible complications, and the low initial proficiency in stoma care can decrease the person’s confidence regarding stoma self-care (He et al., 2021). Thus, self-efficacy can be improved through repetition of practice, as it allows reinforcing learning, recalling, and comparing with previous performance, and correcting actions while receiving corrective feedback (Seo, 2019). Moreover, obtaining successful experiences, especially in repeating these experiences, can contribute to an improved perception of self-efficacy (Seo, 2019). In view of this, nurses need to understand when to consider interventions specifically aimed at promoting self-efficacy (Giordano et al., 2020).

Concerning the appropriate moment for intervention in promoting self-care after stoma creation, the participants suggested the need for the person to be free of pain and free of postoperative equipment and to have tolerated getting up postoperatively. They also mentioned that when the person shows signs that awareness has been initiated, he / she is more willing to learn; therefore, the educational intervention should be intensified at that moment. It is vital to give people with a tracheostomy time to adjust to their new reality (Carroll-Alfano, 2019) and to ensure that they can retain information and participate in the educational process. In this study, participants identified some of the signs of awareness initiated, such as recognising the stoma as the new airway

(manifested by wiping secretions on the stoma rather than in the mouth) or looking at themselves in the mirror and confronting their new image. These findings may be particularly useful for clinical nurses to determine the best moment to intervene. To the best of our knowledge, this is the first study to identify signs of awareness initiated in the person with the tracheostomy.

Finally, the participants recognised the need to promote tracheostomy self-care with contents, methods, and moments tailored to individual needs and preferences. Other researchers also report that health professionals should ensure that the necessary information is provided and allow patients to control the timing and type of information they receive (Sherlock et al., 2009) for improved effectiveness.

Limitation of study

This study sought to describe nurses' perception about promoting tracheostomy self-care. To the authors' knowledge, this is the first study exploring the nurses' perspective on this topic. However, this study has some limitations. First, despite being a multicentre study, all data were collected in a European country with a specific sociocultural context, which may have influenced the results. Second, the transcripts were not returned to the participants for corrections or comments, although we recognise the importance of this feedback to improve the credibility of the results. Lastly, this study is only focused on nurses' perception of promoting tracheostomy self-care. Future research should explore the perspective of others involved in this process, such as the person with the tracheostomy and the family.

Conclusion

This study improved the understanding of self-care in the person with a tracheostomy, as well as its importance in the process of adapting to living with a stoma. The themes identified in this study corroborate previous findings and offer new perspectives based on the nurses' perception of clinical practice. The nurses described the most important aspects for targeted promotion of tracheostomy self-care, namely the contents to be addressed, the methods and resources to be used, the appropriate moment to intervene, the necessary conditions for promoting self-care, how to ensure the standardisation of interventions among nurses, and the level of tailored planned interventions.

These results can help improve the understanding of the aspects that nurses value when they promote tracheostomy self-care, and consequently, they can

help nurses reflect on their clinical practice. These can also help researchers design more meaningful care models, taking advantage of the perceptions of care providers who are more knowledgeable of the contexts of action. Thus, study findings can be used as the basis to develop an intervention programme to support nurses in promoting tracheostomy self-care. This has the potential to lead to improved personal experience and cost savings with complications arising from tracheostoma.

Ethical aspects and conflict of interest

The study was performed in accordance with the Declaration of Helsinki (World Medical Association, 2013). Ethical approval was granted by the Health Ethics Committee of two hospitals and Universidade Católica Portuguesa. Participants' written consent was obtained for the interview and its audio recording. All participants were informed about the scope of the study, its objectives, the voluntary nature of participation, and the possibility of withdrawing at any time during the interview. All personal information was removed from the data to maintain participant confidentiality.

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Author contributions

Study design (SQ, IP, MAB, CS), data collection (SQ), data analysis (SQ, IP, MAB, CS), manuscript preparation (SQ), manuscript revision, and final approval (SQ, IP, MAB, CS).

References

Altınbaş, Y., Aslan, S., & Karaca, T. (2021). Relationships among self-care agency, health perceptions, and activities of

- daily living in patients after tracheostomy: a cross-sectional multisite study. *Wound Management & Prevention*, 67(2), 40–47.
- Bardin, L. (2016). *Análise de conteúdo* [Content Analysis] (1st ed.). Edições.
- Beck, C., & Polit, D. (2019). *Fundamentos de pesquisa em enfermagem* [Nursing research fundamentals] (9th ed.). Artmed Editora.
- Bleijenberg, N., de Man-van Ginkel, J. M., Trappenburg, J. C. A., Ettema, R. G. A., Sino, C. G., Heim, N., Hafsteindóttir, T. B., Richards, D. A., & Schuurmans, M. J. (2018). Increasing value and reducing waste by optimizing the development of complex interventions: enriching the development phase of the Medical Research Council (MRC) Framework. *International Journal of Nursing Studies*, 79, 86–93. <https://doi.org/10/gdhw63>
- Carroll-Alfano, M. A. (2019). Education, counseling, support groups, and provider knowledge of total laryngectomy: the patient's perspective. *Journal of Communication Disorders*, 82, 105938. <https://doi.org/10/gm9vvn>
- Colandrea, M., & Eckardt, P. (2016). Improving tracheostomy care delivery: instituting clinical care pathways and nursing education to improve patient outcomes. *ORL-Head and Neck Nursing: Official Journal of the Society of Otorhinolaryngology and Head-Neck Nurses*, 34(1), 7–16.
- Creswell, J. W. (2012). *Qualitative inquiry and research design: choosing among five approaches* (3th ed.). SAGE Publications, Inc.
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Giordano, V., Nicolotti, M., Corvese, F., Vellone, E., Alvaro, R., & Villa, G. (2020). Describing self-care and its associated variables in ostomy patients. *Journal of Advanced Nursing*, 76(11), 2982–2992. <https://doi.org/10/ghmjnf>
- Graboyes, E. M., Kallogjeri, D., Zerega, J., Kukuljan, S., Neal, L., Rosenquist, K. M., & Nussenbaum, B. (2017). Association of a perioperative education program with unplanned readmission following total laryngectomy. *JAMA Otolaryngology-Head & Neck Surgery*, 143(12), 1200–1206. <https://doi.org/10.1001/jamaoto.2017.1460>
- Hardiman, K. M., Reames, C. D., McLeod, M. C., & Regenbogen, S. E. (2016). Patient autonomy-centered self-care checklist reduces hospital readmissions after ileostomy creation. *Surgery*, 160(5), 1302–1308. <https://doi.org/10/f9cdxj>
- He, L. J., Zheng, M. C., Yuet Wong, F. K., Ying, J., & Zhang, J. E. (2021). Immediate postoperative experiences before discharge among patients with rectal cancer and a permanent colostomy: a qualitative study. *European Journal of Oncology Nursing*, 51, 101911. <https://doi.org/10/gnmgzw>
- Jaarsma, T., Strömberg, A., Dunbar, S. B., Fitzsimons, D., Lee, C., Middleton, S., Vellone, E., Freedland, K. E., & Riegel, B. (2020). Self-care research: how to grow the evidence base? *International Journal of Nursing Studies*, 105, 103555. <https://doi.org/10.1016/j.ijnurstu.2020.103555>
- Matthias, C., Fawson, S., Yan, L., Sweeney, L., Moss-Morris, R., & Norton, C. (2021). Inflammatory bowel disease nurses' views on taking on a new role to support an online self-management programme for symptoms of fatigue, pain, and urgency: a qualitative study to maximise intervention acceptance. *Gastrointestinal Nursing*, 19(9), 28–35. <https://doi.org/10.12968/gasn.2021.19.9.28>
- Mitchell, R. B., Hussey, H. M., Setzen, G., Jacobs, I. N., Nussenbaum, B., Dawson, C., Brown, C. A., Brandt, C., Deakins, K., Hartnick, C., & Merati, A. (2013). Clinical consensus statement: tracheostomy care. *Otolaryngology-Head and Neck Surgery*, 148(1), 6–20. <https://doi.org/10.1177/0194599812460376>
- O'Cathain, A., Croot, L., Duncan, E., Rousseau, N., Sworn, K., Turner, K. M., Yardley, L., & Hoddinott, P. (2019). Guidance on how to develop complex interventions to improve health and healthcare. *BMJ Open*, 9(8), e029954. <https://doi.org/10/gf85rp>
- Prinz, A., Colwell, J. C., Cross, H. H., Mantel, J., Perkins, J., & Walker, C. A. (2015). Discharge planning for a patient with a new ostomy: best practice for clinicians. *Journal of Wound, Ostomy, and Continence Nursing*, 42(1), 79–82. <https://doi.org/10/gnmgzx>
- Queirós, S. M., Pinto, I. S., Brito, M. A., & Santos, C. B. (2021). Nursing interventions for the promotion of tracheostomy self-care: a scoping review. *Journal of Clinical Nursing*, 30(21–22), 3055–3071. <https://doi.org/10/gkg452>
- Riegel, B., Dunbar, S. B., Fitzsimons, D., Freedland, K. E., Lee, C. S., Middleton, S., Stromberg, A., Vellone, E., Webber, D. E., & Jaarsma, T. (2021). Self-care research: where are we now? Where are we going? *International Journal of Nursing Studies*, 116, 103402. <https://doi.org/10/d3hd>
- Rodriguez, A., Smith, J., & Barrett, D. (2020). Research made simple: developing complex interventions. *Evidence Based Nursing*, 23(2), 35–37. <https://doi.org/10/gnksw3>
- Schraube, E., & Osterkamp, U. (2013). *Psychology from the standpoint of the subject: selected writings of Klaus Holzkamp*. Palgrave Macmillan. https://doi.org/10.1057/9781137296436_1
- Seo, H.-W. (2019). Effects of the frequency of ostomy management reinforcement education on self-care knowledge, self-efficacy, and ability of stoma appliance change among Korean hospitalised ostomates. *International Wound Journal*, 16(Supplementum 1), 21–28. <https://doi.org/10/gm9vwh>
- Sherlock, Z. V., Wilson, J. A., & Exley, C. (2009). Tracheostomy in the acute setting: patient experience and information needs. *Journal of Critical Care*, 24(4), 501–507. <https://doi.org/10.1016/j.jccr.2008.10.007>
- Skivington, K., Matthews, L., Simpson, S. A., Craig, P., Baird, J., Blazeby, J. M., Boyd, K. A., Craig, N., French, D. P., McIntosh, E., Petticrew, M., Rycroft-Malone, J., White, M., & Moore, L. (2021). A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. *BMJ*, 374, n2061. <https://doi.org/10/gbnbxr>
- Smyth, S., De Vries, J. M. A., Rossetti, J., & McCann, E. (2021). “Stuck between a rock and a hard place”: how mental health nurses' experience psychosocial interventions in Irish Mental Health Care Settings. *Journal of Psychiatric and Mental Health Nursing*, 28(4), 590–600. <https://doi.org/10.1111/jpm.12702>
- Spito, A., & Cavaliere, B. (2019). A Therapeutic Education Program for patients that underwent at temporary tracheotomy and total laryngectomy: Leading to improved the “Diagnostic, Therapeutic and Assistance Path”. *Acta*

- Bio-Medica: Atenei Parmensis*, 90(11-S), 38–52. <https://doi.org/10.23750/abm.v90i11-S.8849>
- Stavropoulou, A., Vlamakis, D., Kaba, E., Kalemikerakis, I., Polikandrioti, M., Fasoi, G., Vasilopoulos, G., & Kelesi, M. (2021). “Living with a stoma”: exploring the lived experience of patients with permanent colostomy. *International Journal of Environmental Research and Public Health*, 18(16), 8512. <https://doi.org/10/gnc7g3>
- Swords, C., Manji, A., Ward, E., & Arora, A. (2018). A pilot study on the provision of tracheostomy healthcare and patient engagement in quality improvement measures: a global perspective. *Journal of Laryngology and Otology*, 132(12), 1093–1096. <https://doi.org/10.1017/S0022215118002177>
- Tao, H., Songwathana, P., Isaramalai, S., & Zhang, Y. (2014). Personal awareness and behavioural choices on having a stoma: a qualitative metasynthesis. *Journal of Clinical Nursing*, 23(9–10), 1186–1200. <https://doi.org/10/f5ztwz>
- van Meijel, B., Gamel, C., van Swieten-Duijfjes, B., & Grypdonck, M. H. F. (2004). The development of evidence-based nursing interventions: methodological considerations. *Journal of Advanced Nursing*, 48(1), 84–92. <https://doi.org/10/frjvfc>
- Villa, G., Mannarini, M., Della Giovanna, G., Marzo, E., Manara, D. F., & Vellone, E. (2019). A literature review about self-care on ostomy patients and their caregivers. *International Journal of Urological Nursing*, 13(2), 75–80. <https://doi.org/10/gh6rvw>
- World Medical Association. (2013). World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. *JAMA*, 310(20), 2191–2194. <https://doi.org/10.1001/jama.2013.281053>
- Yang, H., Zeng, F., Pang, T., Zhang, H., & Lu, J. (2021). A qualitative study of the experience of returning to family life and the coping styles of patients after total laryngectomy. *Annals of Palliative Medicine*, 10(11), 11482–11491. <https://doi.org/10/gnt9wc>
- Yardley, L., Bradbury, K., & Morrison, L. (2021). Using qualitative research for intervention development and evaluation. In P. M. Camic (Ed.), *Qualitative research in psychology: expanding perspectives in methodology and design* (2nd ed., pp. 264–282). American Psychological Association. <https://eprints.soton.ac.uk/450972/>
- Young, J. C., Rose, D. C., Mumby, H. S., Benitez-Capistros, F., Derrick, C. J., Finch, T., Garcia, C., Home, C., Marwaha, E., Morgans, C., Parkinson, S., Shah, J., Wilson, K. A., & Mukherjee, N. (2018). A methodological guide to using and reporting on interviews in conservation science research. *Methods in Ecology and Evolution*, 9(1), 10–19. <https://doi.org/10/gcvfbz>
- Zhang, Y., Xian, H., Yang, Y., Zhang, X., & Wang, X. (2019). Relationship between psychosocial adaptation and health-related quality of life of patients with stoma: a descriptive, cross-sectional study. *Journal of Clinical Nursing*, 28(15–16), 2880–2888. <https://doi.org/10/ghhfwt>