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Development of a Form to Assess the Self-Care Competence of the Person with a Tracheostomy

Construção do Formulário de Avaliação da Competência de Autocuidado na Pessoa com Ostomia de Ventilação

Construcción de un Formulario de Evaluación de la Competencia del Autocuidado de la Persona con Ostomía de Ventilación

Sílvia Maria Moreira Queirós*; Célia Samarina Vilaça de Brito Santos**; Maria Alice Correia de Brito***; Igor Emanuel Soares Pinto****

Abstract

Background: The development of the self-care competence in the person with a tracheostomy is described as a key driver for a healthy transition to life with a tracheostomy. An instrument for assessing the self-care competence of the person with a tracheostomy contributes to nurses' decision-making and promotes the quality of care.

Objectives: To develop a tool for assessing the self-care competence of the person with a tracheostomy.

Methodology: A methodological study was conducted. Content validity was obtained through the judgment of experts, with a focus group methodology. Reliability was assessed using Cronbach's alpha coefficient. The instrument was applied to a sample of 80 participants, using a non-probability convenience sampling technique.

Results: The study resulted in a form with 39 indicators, divided into 6 areas, which showed good internal consistency ($\alpha = 0.89$) and recognised content validity.

Conclusion: The final version of the form is applicable, and has the potential to be used in future studies on its validity.

Keywords: Self-care; ostomy; tracheostomy; nursing care

Resumo

Enquadramento: O desenvolvimento da competência de autocuidado na pessoa com ostomia de ventilação é descrito como impulsionador de uma transição saudável para a vida com uma traqueostomia. Um instrumento que permita avaliar a competência de autocuidado na pessoa com ostomia de ventilação auxilia a tomada de decisão do enfermeiro e promove a melhoria dos cuidados.

Objetivos: Construir um instrumento de avaliação da competência de autocuidado na pessoa com ostomia de ventilação.

Metodologia: Estudo de investigação metodológico. A validade de conteúdo foi obtida através do julgamento de peritos, com uma metodologia de tipo *focus group*. A fidelidade foi avaliada através do coeficiente *alpha* de *cronbach*. O instrumento foi aplicado numa amostra com 80 participantes, cuja técnica de amostragem foi não probabilística de conveniência.

Resultados: O estudo resultou num formulário constituído por 39 indicadores, organizados em 6 domínios, com boa consistência interna ($\alpha = 0,89$) e reconhecida validade de conteúdo.

Conclusão: A versão final do formulário construído é aplicável, sendo-lhe conferido potencial para uma futura investigação da sua validade.

Palavras-chave: Autocuidado; ostomia; traqueostomia; cuidados de enfermagem

Resumen

Marco contextual: El desarrollo de la competencia del autocuidado en personas con ostomía de ventilación es un factor que fomenta una transición saludable a la vida con una traqueostomía. Un instrumento para evaluar la competencia del autocuidado en la persona con una ostomía de ventilación ayuda en la toma de decisiones a los enfermeros y promueve la mejora de la atención.

Objetivos: Desarrollar un instrumento para evaluar la competencia del autocuidado en personas con una ostomía de ventilación.

Metodología: Investigación metodológica. La validez del contenido se obtuvo a través del juicio de expertos con un grupo de enfoque. La fidelidad se evaluó mediante el coeficiente alfa de Cronbach. El instrumento se aplicó a una muestra de 80 participantes y la técnica de muestreo fue no probabilística de conveniencia.

Resultados: El estudio dio lugar a un formulario que consta de 39 indicadores, organizados en 6 áreas, que mostró buena consistencia interna ($\alpha = 0,89$) y validez de contenido.

Conclusión: La versión final del formulario es aplicable y tiene potencial para realizar futuras investigaciones sobre su validez.

Palabras clave: Autocuidado; ostomía; traqueostomía; atención de enfermería

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Introduction

The reacquisition of self-care autonomy after an illness or disability is one of the main areas of the professional practice of nurses, whose knowledge base derives from the discipline of nursing. The promotion of autonomy in ostomy self-care has been described as one of the main drivers of adaptation to the stoma (O'Connor, 2005) and, consequently, of a healthy transition to life with an ostomy. It is essential to assess the self-care competence of the person with a tracheostomy because, on the one hand, it allows nurses to define their intervention plan based on the care needs identified within that scope and, on the other hand, it allows monitoring the evolution of the person in the process of development of tracheostomy self-care competence. Thus, an instrument to assess the self-care competence of the person with a tracheostomy is an essential tool to contribute to the decision-making process of the nurses in the provision of care to the tracheostomy patient. Therefore, this study aimed to develop a form to assess the development of the self-care competence in the person with a tracheostomy.

Background

Tracheostomy is a planned or emergent surgical procedure to create an opening through the neck into the trachea, so as to ensure airway permeability (Durbin, 2010). This temporary or permanent opening is usually called a tracheostomy, ostomy or ventilation stoma. The main causes for a tracheostomy are the upper-airway obstruction, easier access to the lower airway for secretion removal and also the provision of a stable airway in patients who require prolonged mechanical ventilation (Durbin, 2010).

The number of tracheostomies performed worldwide has increased (Parker et al., 2007), mainly in patients admitted to intensive care units, to facilitate mechanical ventilation. The growing incidence of head and neck cancer also competes to the gradual increase in the number of people with a tracheostomy. Head and neck cancer is usually associated with anatomical and functional changes that may condition deglutition, phonation, and respiration functions, as well as airway permeability. Consequently, a tracheostomy is a common surgical procedure in this group of patients. The most prevalent type of head

and neck cancer is the cancer of the larynx (Matos, Silva, & Monteiro, 2012). According to data from the Oncology Records in Portugal, the larynx carcinoma is the ninth most prevalent type of malignant tumour in males, with an incidence rate of about 10.4 cases per 100,000 inhabitants (Direção-Geral da Saúde, 2014). According to international data, there are approximately 150,000 new cases of cancer of the larynx in the world every year (Matos et al., 2012). In more severe stages of laryngeal cancer, the treatment option is total laryngectomy, which consists of the complete surgical removal of the larynx, with the creation of a permanent tracheostomy and absolute loss of its connection to the upper airways (Gul & Karadag, 2010). Consequently, there are increasingly more people living with a tracheostomy, so the empowerment of the individual for life with a tracheostomy is an increasingly important field of action of the nurse.

Indeed, a temporary or permanent ostomy surgery is aimed at improving the health status or quality of life of the patient. However, the challenges involved in the formation of a stoma may have a significant impact on several aspects of the life of the individual, including the physiological, social, psychological and cultural domains (Sousa, Santos, & Graça, 2015), and particularly on self-care. In fact, the presence of an ostomy requires a readjustment in the performance of some self-care activities of daily living, as well as the development of new skills, specifically with regard to stoma self-care. In addition to gaining new knowledge, the person has yet to acquire instrumental skills and abilities to care for and live with the ostomy, which underlines the multidimensional nature of the problem.

Despite demanding and complex, the development of ostomy self-care competence is described in the literature as one of the key drivers of a healthy transition to a life with an ostomy. Studies have concluded that the promotion of the development of ostomy self-care competence is a significant predictor of the adaptation to the stoma (O'Connor, 2005). It promotes patient acceptance of the stoma and encourages them to become involved in their self-care (Lo et al., 2011). It also provides a better psychological adjustment and helps the person to regain self-monitoring and self-efficacy, which are perceived as being lost after surgery. In parallel, it is also associated with higher levels of self-confidence

and self-esteem (Registered Nurses' Association of Ontario [RNAO], 2009).

The nurse is the main responsible for the development of the self-care competence in the person with an ostomy (Lo et al., 2011). Thus, it is essential to assess the self-care competence of the person with a tracheostomy because, on the one hand, it allows nurses to define their intervention plan based on the care needs and, on the other hand, it allows monitoring the evolution of the individual's development of those specific competence. Until the development of this study, there was no instrument that described, systemised or assessed the development of the self-care competence in the person with a tracheostomy. There were already instruments of assessment of the self-efficacy in ostomy self-care and of the quality of life of people with a tracheostomy, but there was yet no tool aimed specifically at assessing the development of the self-care competence in the person with a tracheostomy.

Thus, there were several reasons that motivated the decision about the object of study of this research. On the one hand, one reason was the growing number of people with a tracheostomy and the importance of tracheostomy self-care competence for patients' autonomy, health, well-being and, consequently, quality of life. On the other hand, the importance of the systematisation of the collection of relevant data on tracheostomy self-care for the identification of nursing diagnoses related to this self-care, as well as for the assessment of the effectiveness of the nursing interventions implemented. Finally, another reason was the lack of instruments to assess, in a structured and systematic way, the self-care competence in the person with a tracheostomy.

Methodology

The research developed consisted of a methodological study. The studies which encompass the development of new measurement instruments are considered to be methodological studies (Fortin, 2009) and are essential for the production of disciplinary knowledge. The instrument developed was a form, which had the same structure of a questionnaire, but had to be completed by the researcher. This type of data collection tool was chosen for two main reasons: first, we wanted to assess the self-care competence

through the nurse's clinical judgment; second, the concept of competence assessment refers to an evaluation performed by others, in which someone's performance of a specific activity is compared with the pre-established outcome indicators for that activity.

The process of development of the instrument entitled *Formulário de Avaliação da Competência de Autocuidado na Pessoa com Ostomia de Ventilação* (Assessment Form of the Self-Care Competence in the Person with a Tracheostomy) was based on a sequence of well-defined steps, as according to Lobiondo-Wood and Haber (2001).

Therefore, the process started with a review of the evidence produced until then on the concept under analysis, namely the competence in self-care of the tracheostomy. After its definition, the concept of competence in self-care of the tracheostomy was translated to the dimensions and respective indicators/items that allowed measuring it. The items of the form were built based on a pre-existing form developed by Gomes (2012), Silva (2012) and Cardoso (2011), and validated by Pinto (2014), which assesses the development of the self-care competence in the person with bowel elimination ostomy. To adapt it to the specificities of tracheostomy self-care, we analysed the guidelines of the Nursing Outcomes Classification (Moorhead, Johnson, Maas, & Swanson, 2010) about the outcome indicators related to *Ostomy Self-Care and Knowledge: Ostomy care*, the indicators described in the literature reviewed and the researchers' clinical practice experience. Given the multidimensional nature of the competence in self-care of the tracheostomy, the 38 indicators were organised into six main dimensions/domains, as established by Gomes (2012), Silva (2012) and Cardoso (2011): (A) knowledge, (B) self-monitoring, (C), interpretation, (D) decision-making, (E) execution, and (F) negotiation and use of health resources.

For the assessment of the competence in self-care to the tracheostomy self-care competence, we used a single ordinal score on a 5-point Likert scale, according to the competence demonstrated by the individual. The score ranged between 1 and 5, and the higher the score, the greater the competence. Thus, the categories were assessed as 1 - *does not demonstrate*, 2, 3 or 4 - *partially demonstrates*, 5 - *fully demonstrates*, 0 - *does not apply*. The assignment of a score between 2 and 4 varied according to the

nurse's evaluation and was related to the number of criteria demonstrated within each indicator of the domains of competence.

It should also be pointed out that, in the first part of the form, there was a specific area for the characterisation of the person through attribute variables (such as age, marital status, education, profession and professional situation), clinical variables (clinical diagnosis, type of surgery, type of ostomy), treatment variables (prior nursing consultation, prior contact with ostomised patients) and other variables such as the existence of an informal caregiver. With this characterisation, we intended to create a profile of the person with a tracheostomy and his/her clinical context and treatment as factors that condition the development of the competence in self-care to the tracheostomy.

Subsequently, to ensure the correct application of the form by any nurse who would use it, we developed a manual with instructions for its completion, in which we explained in detail the defining criteria for each of the outcome indicators of the six domains of the concept under analysis, in a conceptual and operational way. Thus, with the elaboration of the manual, we expected that the scores assigned to the items would truly reflect the defining characteristics of the outcome indicators to be assessed, regardless of the nurse applying it.

After the items were formulated, the instrument was assessed by a group of experts in the area of knowledge under analysis, so as to ensure its content validity. This group of experts was composed of teachers and clinical nurses: An enterostomal therapy nurse, a PhD professor in nursing with research in the area of self-care, a PhD professor in psychology with research in the area of Oncology and Enterostomal Therapy, two nurses with a master's degree in nursing with research in the field of ostomy, a nurse coordinator in the area of head and neck cancer surgery, a head nurse of the Ear Nose and Throat (ENT) consultation and two nurses specialist in rehabilitation in the outpatient unit and ENT consultation. This group of experts was chosen because they were recognised as holding the greatest level of disciplinary knowledge in the area under the analysis. Thus, the initial version of the form and its manual for completion were sent by email to the experts, so that they could analyse it individually. Then, in a focus group meeting, the instrument was assessed as a whole and item-by-item by all those present. At that meeting, the consensus

of the group regarding the instrument were defined and all the suggested changes were registered. Afterwards, the instrument and the manual, duly corrected with the suggestions proposed by the group, were sent again by email to all experts, so that they could be reassessed. After this new appraisal and after a general consensus was reached, the pilot version of the instrument and the manual for its completion were completed. The methodology used for conducting and moderating the focus group was that defined by Krueger and Casey (2009).

Finally, the data collection instrument was subjected to a pre-test in a group of 18 people with a tracheostomy, being followed-up in the outpatient ENT consultation at a hospital in the northern region of Portugal. The form was applied by the main researcher to the pre-test participant, who was asked to answer the items with open answers and observations on the meaning assigned to the questions, as well as to the form as a whole and the conditions for its application. Based on this information, the form was reformulated, and its final version was elaborated.

After this final version was elaborated, the form was applied by the main researcher to a sample of the target population. As regards sample size, if we wanted to validate the instrument created, this should have at least five times the number of items in the instrument (Bryman and Cramer, 2003), i.e. 5 x 39, which would result in a total of 195 participants. However, it was not our aim in this study to validate the instrument, rather to make a preliminary study that would allow understanding its applicability. Thus, the sample was composed of 80 participants who met the following inclusion criteria: Aged 18 or above, having a tracheostomy (permanent or temporary) and agreeing to participate in a voluntary and informed way in the study. The exclusion criteria were: Being totally dependent on self-care to the tracheostomy and not having cognitive abilities to acquire this competence. This criterion was assessed, when deemed necessary, through the Mini-Mental State Examination (MMSE) which was validated and adapted to the Portuguese population (Guerreiro et al., 1994).

The sampling technique used to conduct the study was the non-probability accidental technique, since the participants were selected through a criterion of convenience, in this particular case accessibility, i.e. the fact that they are present in a given place and at

the right time (Fortin, 2009). Thus, for a matter of accessibility, the sample was composed of people who met the inclusion criteria and were being followed-up at the outpatient postoperative consultation or were hospitalised in two hospitals of the northern region of Portugal, between February and May 2014.

This study complied with all ethical assumptions inherent to health research involving human subjects. Before its implementation, we asked for its evaluation and authorisation to the board of directors and the Ethics Committees of the hospitals involved, so as to ensure its suitability, the lack of harm for participants, as well as the proper protection of the data collected. We received a favourable opinion to both requests. Together with the evaluation and authorisation from the ethics committees, we also asked all potential participants for their informed consent for participation in the study.

Results

From the point of view of validity, only content validity was assessed through expert judgement. The focus group held resulted in three changes to the form initially developed. The first change was the inclusion of the option *Waiting for surgery* in the question on the characterisation of the clinical variable related to the period of time elapsed since the therapeutic decision, since we expected the instrument to be applied throughout the process of development of the competence in self-care to the ostomy, which should preferably start at the moment of therapeutic decision and awareness of it. The second change was the division of the indicators in the domain of knowledge, which included the assessment of two different activities in the same item, namely the division of *how to perform the maintenance of the devices* and *when to perform the maintenance of the devices* in two separate items. Finally, the experts also decided to include an item in the domain of execution for the assessment of the cleaning of the voice

prosthesis. We recognise that the results of this item translate directly into the domain of communication, but it is inevitably associated with the self-care to the tracheostomy.

Therefore, although the six dimensions of the competence in self-care to the tracheostomy were kept, the form was composed of a total of 40 indicators. After the implementation of the pre-test of the form, we concluded that: all the questions of the items were understood by the respondents as the main researcher had expected, the order of the indicators was acceptable; and the list of answers covered all possible answers. However, we chose to eliminate an item from the domain D) decision-making – *adopts lifestyles adapted to the condition of ostomised patient* – because we believed it to be pointless as it was already inherently being assessed in the previous item on the decision to *prevent ostomy complications*, by which we were duplicating the information. Thus, the final form was composed of a total of 39 items.

In view of the research objectives, the characteristics of the concept under analysis and the data collection tool developed, we chose to use the internal consistency to assess its reliability, by calculating Cronbach's alpha coefficient.

With the statistical analysis of the results obtained in the implementation of the pilot study in the sample, the form obtained an overall Cronbach's alpha of 0.89, indicating that the measurement instrument has a good internal consistency (Ribeiro, 2010). We also assessed the Cronbach's alpha of its six domains, and concluded that its reliability scores were never below those acceptable. The lowest score was 0.71 in the domain of negotiation and use of health resources. It should also be underlined that the domains of knowledge and execution obtained a Cronbach's alpha higher than 0.90, which indicates a very good internal consistency. The Cronbach's alpha values of the instrument and of its domains were summarised in Table 1.

Table 1
Internal consistency coefficient of the Form and its Domains (N=80)

Form Domain	N of items	Cronbach's alpha
(A) Knowledge	13	0.91
(B) Self-monitoring	5	0.79
(C) Interpretation	4	0.80
(D) Decision-making	3	0.88
(E) Execution	11	0.94
(F) Negotiation	3	0.71
Total Form	39	0.89

We later assessed in detail each of the items of the instrument. With this analysis we intended to understand if the alpha coefficients of the domains could be improved with the deletion of an item which a weaker correlation.

The domains of knowledge (A), interpretation (C) and execution (E) apparently do not benefit from the deletion of any item, since there would be no significant increase in the alpha value. As regards the domain of self-monitoring (B), we concluded that item 14 was fragile, because its deletion would lead to a significant increase in the Cronbach's alpha from 0.79 to 0.84. In the domain of decision-making (D), only the deletion of item 25 would lead to an increase

in the Cronbach's alpha from 0.88 to 0.92. Finally, the domain of negotiation and use of health resources (F) also seemed to benefit from the deletion of item 39, the most fragile one, because this would lead to an increase in the Cronbach's alpha of the domain to 0.78.

In addition, we observed that some items had a corrected item-total correlation of less than 0.20, in particular items 1 and 2 of the domain of knowledge (A) and item 14 of the domain of self-monitoring (B). However, given the conceptual relevance of these items for the construct that we intended to assess, we decided to keep them in the form.

The results obtained can be found in Table 2.

Table 2
Corrected item-total correlation and Cronbach's alpha coefficient with deletion of each item of the form

Form Indicators	Corrected item-total correlation	Cronbach's alpha if item deleted	
Knowledge	1. Refere o que é uma ostomia de ventilação	0.00	0.92
	2. Refere qual a finalidade da ostomia de ventilação	0.00	0.92
	3. Refere as características da ostomia de ventilação	0.67	0.90
	4. Refere quais as consequências decorrentes da ostomia de ventilação	0.62	0.90
	5. Refere quais os sinais de complicação da ostomia de ventilação	0.80	0.89
	6. Refere quais os dispositivos necessários no cuidado à ostomia de ventilação	0.54	0.91
	7. Refere quando deve proceder à substituição dos dispositivos	0.63	0.90
	8. Refere como deve proceder à substituição dos dispositivos	0.76	0.90
	9. Refere como realizar a manutenção dos dispositivos	0.71	0.90
	10. Refere quando deve proceder à limpeza do estoma e pele circundante	0.60	0.90
	11. Refere como deve proceder à limpeza do estoma e pele circundante	0.75	0.90
	12. Refere quais os recursos disponíveis na comunidade para a pessoa com ostomia de ventilação	0.79	0.89
	13. Refere quais as medidas que deve adotar para a prevenção de complicações	0.84	0.89

Self-monitoring	14. Observa a ostomia de ventilação	0.00	0.84
	15. Identifica as características da ostomia de ventilação	0.70	0.70
	16. Identifica as características das secreções	0.71	0.70
	17. Identifica sinais de complicações da ostomia de ventilação	0.68	0.72
	18. Atende à necessidade de troca dos dispositivos	0.65	0.72
Interpretation	19. Refere quais as possíveis causas de complicações da ostomia de ventilação	0.74	0.68
	20. Refere quais as possíveis causas de alteração das características das secreções	0.75	0.68
	21. Reconhece que os resultados do autocuidado à ostomia influenciam o seu bem-estar	0.53	0.79
	22. Questiona detalhadamente com o objetivo de encontrar uma explicação	0.46	0.83
Decision-making	23. Estabelece prioridades na tomada de decisão	0.86	0.74
	24. Reconhece as possíveis consequências das suas decisões	0.85	0.76
	25. Previne as complicações da ostomia de ventilação	0.72	0.92
Execution	26. Executa os procedimentos atendendo ao seu conforto, funcionalidade e segurança	0.87	0.93
	27. Organiza e prepara o material necessário para o cuidado à ostomia de ventilação	0.90	0.93
	28. Remove a fita ou velcro	0.88	0.92
	29. Remove os dispositivos	0.90	0.93
	30. Limpa e seca o estoma e pele circundante	0.93	0.92
	31. Limpa a prótese fonatória	0.50	0.95
	32. Aplica protetores cutâneos	0.75	0.93
	33. Insere os dispositivos	0.94	0.92
	34. Aplica penso de proteção	0.79	0.93
	35. Fixa os dispositivos	0.77	0.93
	36. Confirma o ajuste dos dispositivos	0.90	0.93
Negotiation	37. Negocia os diferentes recursos disponíveis no apoio à pessoa com ostomia de ventilação	0.59	0.53
	38. Recorre aos serviços de saúde para esclarecimento de dúvidas e/ou aconselhamento	0.69	0.40
	39. Recorre oportunamente aos serviços de saúde face a complicações da ostomia de ventilação	0.37	0.78

Thus, item 1 and 2 of the domain of knowledge, item 14 of the domain of self-monitoring, item 25 of the domain decision-making and item 39 of the domain of negotiation, should be reassessed in a future research with a more significant sample to understand whether their deletion would be beneficial. In this case, we chose not to delete them, because the internal consistency of the domains was reasonable, and, as it was not the objective of this study to validate the form, we found it appropriate to include them given the concept to be measured.

Discussion

Although the form was not validated, it proved to be reliable, because it showed a good internal consistency obtained with an overall Cronbach's alpha of 0.89. The calculation of the Cronbach's alpha values of the six domains of the instrument also showed reliability values never below those acceptable, i.e. greater than 0.60. According to Fortin (2009), the higher the correlation between the items, the greater is the internal consistency of the instrument, since it

assesses a single concept. In other words, the closer to one is the alpha value, the more consistent the items of the instrument, which indicates that the instrument has consistently measured the construct under analysis.

Due to the lack of previous studies which had used instruments of assessment of the competence of self-care in the person with a tracheostomy, we decided to compare the results of the Cronbach's alpha values obtained in this study with the results found in the studies developed by Cardoso (2011), Gomes (2012) and Pinto (2014) about the competence of self-care in the person with a bowel elimination ostomy. As previously mentioned, these authors created and validated an evaluation instrument with the same systematisation of the domains of competence of self-care to the ostomy, which was a precursor to that described in this study. This comparative analysis made it possible to realise that the results obtained in this study are similar to those presented by Cardoso (2011), Gomes (2012) and Pinto (2014), because the total Cronbach's alphas were also greater than 0.80, providing good internal consistency. As regards the alpha values of the different domains, these authors

also never obtained values below those acceptable. It should also be mentioned that in the study by Cardoso (2011), the domains with the highest and lowest Cronbach's alpha coefficients were the same as in this study, i.e. the domains of knowledge and negotiation and use of resources, respectively.

It should also be underlined that, from the point of view of reliability, it was not possible to assess stability because these assessment tests are applied to instruments whose constructs are stable over time (Fortin, 2009). The construct under analysis, which is potentially mutable with time, does not fit this type of assessment.

The assessment of equivalence, which consists of the degree of correlation between two versions or corresponding formats of an instrument (Fortin, 2009), was not performed due to the characteristics of the construct and the instrument developed.

With the consensus of the group of experts and consequent reformulation of the form based on the agreement of the raters with specialised knowledge, it was possible to ensure the relevance of each statement and its representativity in the concept to be measured. That is, it was possible to assume that the different dimensions and respective instrument items reflect the concept to be measured (Fortin, 2009).

Therefore, the instrument developed proved to be useful for synthesising and systematising all relevant information for the assessment of the competence in self-care to the tracheostomy, thereby becoming the first instrument to support the nurses' decision-making in this context. At the same time, it allowed quantifying and qualifying the different levels of competence in self-care to the tracheostomy that could be demonstrated in their various domains, thus ensuring that the instrument could be applied throughout the process of development of the competence. On the other hand, the operationalisation of the items in the form with the Likert scale for assessment of the competence in the different domains of tracheostomy self-care facilitated the sharing of information between nurses and the continuity of nursing care to the extent that it contributed to standardise care and the criteria for competence assessment and, consequently, to the quality of the care provided.

With regard to the limitations of the study, we underline the need for more detailed statistical

analyses which make it possible to assess the clinimetric and psychometric properties of the form, thereby assigning validity, reliability and clinical applicability to the instrument developed.

On the other hand, we highlight that the fact that data were collected by a single researcher prevented the assessment of interrater agreement, which in this case will be critical to measure the external error by the different nurses who apply the form.

Finally, we emphasise the importance of the instrument being applied to a representative and more significant sample of the target population, which allows not only for its validation but also for the generalisation of the results.

Conclusion

This study highlighted the importance of assessing the competence in self-care to the tracheostomy, as a useful tool for monitoring the transition to life with a tracheostomy. The data collection instrument that we developed contributed with the content concerning the competence in self-care to the tracheostomy, by identifying and systematising the dimensions of the competence of self-care and the respective outcome indicators for each of them.

This research also allowed strengthening the conviction that, in the assessment of the competence in self-care to the tracheostomy in its different domains, nurses are expected to take on the responsibility for ensuring an accurate diagnosis of the nursing care needs. Thus, the instruments developed to support nurses' decision-making, such as the one developed in this study, are essential to improve the standardisation of diagnostic and assessment criteria for the quality and continuity of the care provided.

Finally, it is important to emphasise the contribution of nursing research, such as this study, to the production of disciplinary knowledge that justifies and substantiates the therapeutic options based on the nursing care needs identified, so as to improve the patients' well-being, health and quality of life. Thus, further studies are important to validate this form, in order to provide greater access, accuracy and safety to the instrument of support to nurses' decision-making.

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