

ORIGINAL ARTICLE

GUIDE FOR THE PREPARATION OF THE SURGICAL PATIENT FOR HOSPITAL DISCHARGE: VALIDATION OF CARE-EDUCATIONAL TECHNOLOGY*

HIGHLIGHTS

- 1. Technological production based on the practice of the multi-professional team.
- 2. Health education as an essential element in the hospital discharge process
- 3. Prospects for new studies on this topic.
- 4. Instrumentalize the target audience for (self)care at home.

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ABSTRACT

Objective: Validate the content of a care-educational technology in the form of a guide aimed at preparing the surgical patient and their companion for hospital discharge. **Method:** The methodological study was conducted between February 2019 and December 2021 in Santa Maria-RS-Brazil. 22 specialists in nursing, physiotherapy, and nutrition participated. The analysis took place using the Content Validity Index. The data were collected online and processed using descriptive and analytical statistics. **Results:** The guide obtained a validity of 0.81. Your content is intended for surgical patients and companions under the mediation of the healthcare professional. The guide contains care for surgical wounds, gastric and enteric tubes, stomas, and bladder catheterizations. Adjustments were made regarding the language, text objectivity, removal of technical terms, and review of the images. **Conclusion:** According to experts, the guide comprises a valid technology to be used by professionals in health education with the surgical patient and their companions.

KEYWORDS: Continuity of Patient Care; Patient Discharge; Perioperative Care; Health Education; Validation Study.

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INTRODUCTION

Proper patient preparation for hospital discharge represents a reduction in morbidity and mortality, a decrease in the incidence of medication administration errors at home, a reduction in (re)admissions, and a reduction in costs inherent to the length of hospital stay. To this end, planning hospital discharge with implementing participatory strategies that guide the patient and their companion towards self-care can provide safety and patient satisfaction with their treatment¹⁻³.

The work of the nursing team, focused on the surgical patient, is vital for attentive and critical observation, quick and coherent decision-making, and equipping the patient and companions for the development of home care. From this perspective, it is up to professionals to identify and intervene in the face of the patient's care-educational needs⁴.

In the postoperative context, hospital discharge is a complex process that involves implementing interconnected transition strategies to strengthen care and attention³⁻⁵. The transition of care is configured in a wide range of conditions and services to ensure continuity of care and the prevention of undesirable consequences in vulnerable individuals affected by changes in different care settings or caregivers⁶.

Preparing for discharge is an emerging topic globally due to its potential to minimize adverse events and other undesirable care outcomes^{1,3,7}. From this, it is understood that developing a care-educational guide aimed at post-surgical patients and their companions becomes a feasible and essential strategy since the continuity of care for the home can be developed more effectively, accurately, and with higher quality⁸.

In this context, the produced guide is characterized as Care-Education Technology (CET) built in a dialectical and participatory manner with the scenario to which it applies. To this end, the content and purposes of applying the guide represent the interrelationship between caring for and educating the patient in the transition of post-hospital discharge care? As a CET, the product emerges from the praxis of the people it is intended for so that its meaning is the resolution of real needs?

To this end, the research question that supported the development of this product was: "is a guide for preparing the surgical patient and their companion for hospital discharge a valid Care-Educational Technology, according to experts?".

It is believed that the guide can be used as a care-educational material aimed at the teaching and learning of patients and their companions, regarding post-surgical care at home. Therefore, the objective of this study was to validate the content of a care-educational technology in the form of a guide to prepare surgical patients and their companions for hospital discharge.

METHOD

Methodological research¹⁰, quantitative, validation of the theoretical and imagery content of a guide aimed at preparing the hospital discharge of the surgical patient and their companion. The study was guided by the theoretical-conceptual and classificatory model of Care-Educational Technologies⁹. The instrument Standards for Quality Improvement Reporting Excellence 2.0 (SQUIRE)¹¹ was used to guide the article's writing.

The research was conducted at a public university in Rio Grande do Sul - Brazil, from February 2019 to December 2021. The validation mapped specialists from the five regions (North, Northeast, Central-West, Southeast, and South) of Brazil, aiming at the scope and dissemination of the proposal¹².

Data collection took place remotely, through invitations to specialists, via email contact (available on the Lattes platform or scientific articles), or Whatsapp[®]. The sample of experts was obtained for convenience to meet the assumptions of the research carried out by the Lattes Platform, available on the portal of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). Another strategy for mapping and selecting experts was the snowball technique, which expanded the research sample through referral. The selected participants were invited to indicate other possible experts if they met the selection criteria¹³.

One hundred forty professionals (84 nurses, 30 physical therapists, and 26 nutritionists) who met the inclusion criteria were invited to participate in the research. The choice of this population is related to the professions involved in the construction of the guide¹⁴: having a doctorate, master's, or specialist title; having experience in the management and/or care of perioperative patients; having academic production in the area of health technologies; having academic production in the area of perioperative care. Professionals who did not respond to emails after three attempts within an estimated period of 30 days were excluded.

Thus, the final sample of the research was 22 experts. The literature presents divergence regarding the recommended number of specialists. In this research, the quantitative between five and 27 specialists in the theme¹² was sought.

For validation, an email or WhatsApp® was sent with a weblink to access the validation form, created on the Google Forms® platform, with three sections: (1) Informed Consent Form (ICF), (2) characterization of specialists, (3) validation instrument containing 20 evaluative items, divided into three domains (objectives with five items; structure/presentation with 12 items; and relevance with three items). For the analysis of the guide's content, the items were evaluated using a Likert scale with four levels: 1 (inadequate), 2 (somewhat adequate), 3 (adequate), and 4 (completely adequate). At the end of each domain, a space for comments and suggestions in text form was made available to the specialists. Each specialist was given a period of 15 days for analysis and response, which, in some cases, was extended.

The organization and analysis of the data were performed using the Statistical Package for the Social Sciences – SPSS, version 24. A descriptive analysis of the data was carried out to characterize the specialists, with the calculation of absolute and relative frequencies. For the verification of the content validity of the guide, the Content Validity Index (CVI) was used, with the calculation of the I-CVI (Item-Level Content Validity Index) referring to each item of the instrument and the global CVI.

The guide was considered valid when each item obtained an IVC equal to or greater than 0.70¹⁵⁻¹⁷, given that the greater the number of evaluators, the lower the agreement index between them¹⁷. The significance level adopted in the study was 5%. The instrument's reliability was assessed using Cronbach's Alpha coefficient.

The study was approved by the Universidade Federal de Santa Maria Research Ethics Committee, with opinion No. 3,726,155.

RESULTS

According to the methodological considerations, 140 specialists were invited to participate in the study, resulting in 29 acceptances. However, seven experts did not return the guide validation instrument. Thus, the study sample comprises 22 specialists (Table 1).

Table 1 – Characterization of specialists for validation of the Guide for preparing the hospital discharge of the surgical patient/companion. Santa Maria, RS, Brazil, 2024

Variables	n	%
Sex		
Male	05	22
Female	17	78
Age		
Up to 29 years old	04	18
From 30 to 40 years	11	50
From 41 to 50 years old	03	13
From 51 to 60 years old	04	18
Training		
Nursing	12	54
Physiotherapy	08	36
Nutrition	02	10
Title		
Doctorate	07	31
Master's degree	08	37
Specialization	06	28
Unanswered	01	4
Area of expertise		
Surgical center	07	32
Intensive therapy	07	32
Outpatient clinic	03	14
Neurology	01	4
Oncology	01	4
Not specified	03	14
Acting time		
Up to 20 years	18	81
More than 20 years	04	19
Employment relationship		
Teaching	10	46
Hospital care	12	54
Active institution		
Public	14	63
Private	08	37
Regions		
South	12	54
North	04	19
Northeast	04	19
Midwest	01	4
Southeast	01	4
Total	22	100

Source: The authors (2024)

After the guide was produced, its content was validated, obtaining an I-CVI between 0.61 and 0.92 and an S-CVI of 0.81 (Table 2). The experts pointed out that the guide's reliability was almost perfect, indicating a Cronbach's Alpha of 0.977. Items with I-CVI below 0.70 were reformulated according to the experts' suggestions, as shown in Chart 1.

Table 2 - Agreement and Content Validation Index Guide for preparing the hospital discharge of the surgical patient/companion. Santa Maria, RS, Brazil, 2024

Domain 1: Goals	SD	D	NDN	Α	SA	I-CVI
1.1 Adequate to the professional's care/educational process.	1	0	2	14	9	0.88
1.2 Adequate to the care/educational process of the patient/companion.		1	3	10	11	0.80
1.3 Clarifies doubts about the topic addressed.	1	0	2	12	11	0.88
1.4 Provides a reflection on the topic.	1	0	6	9	10	0.73
1.5 Encourages behavior change.		1	5	7	12	0.73
				S-CVI/AVE		0.80
Domain 2: Structure/presentation						
2.1 Appropriate language for professionals.	1	0	2	16	7	0.88
2.2 Appropriate language for patients/ companions.	1	3	3	13	6	0.73
2.3 Appropriate language for educational material.	1	0	5	12	8	0.77
2.4 Interactive language, allowing active involvement in the educational process.	1	4	2	9	10	0.73
2.5 Correct information.	1	1	2	11	11	0.84
2.6 Objective information.	2	1	2	8	13	0.88
2.7 Clarifying information.	1	4	2	7	12	0.73
2.8 Necessary information.	1	1	1	8	15	0.88
2.9 Logical sequence of ideas.	1	0	2	9	14	0.88
2.10 Current theme.	1	1	1	6	17	0.88
2.11 Adequate text size.	1	2	2	8	13	0.80
2.12 The illustrations are sufficient and expressive.	3	3	4	7	9	0.61
				S-CVI/AVE		0.79
Domain 3: Relevance						
3.1 Stimulates learning.	1	0	1	3	11	0.92
3.2 Contributes to knowledge in the area.	1	0	1	9	15	0.92
3.3 Arouses interest in the topic.	1	0	2	9	14	0.88
				SCVI/AVE		0.91
					S-CVI	0.81
				Alfa de Cro	0.977	

Note: SD= Strongly Disagree; D= Disagree; NDN= Neither Disagree nor Agree; A= Agree; SA= Strongly Agree.

Source: The authors (2024)

Considering the opinion of the experts (Chart 1), it was possible to reformulate the content of the guide in order to make it suitable for use by professionals with the target audience. The modified contents described below do not represent the entirety of the guide.

Chart 1 - Changes made to the Guide for preparing the hospital discharge of the surgical patient/companion according to the suggestions of the specialists, Santa Maria, RS, Brazil, 2024

ltem	ADJUSTMENTS MADE
Cover	Change of title to "Guide for the preparation of hospital discharge of the surgical patient/companion";
General Structure and Presentation	For each chapter, an introduction was prepared explaining what will be presented; Clarification of the target audience of the guide; Text reduction aiming at objectivity; Addition of links on the internet with reliable sources; Standardization in the format of references, updating them, and adding at the end of each care item. Language that brings the reader closer; Addition of shapes, such as speech balloons, to allocate information; Exchange and addition of illustrative figures; The terms "attention" and "important information" were highlighted in bold; Strengthening hygiene in patient handling, devices in use, etc.; Procedures described step by step;
Surgical wound	Surgical wound image change; Language with fewer technical terms;
Nasogastric tube and nasoenteric tube	Elucidated that the probe can be used for nutrition and administration of medications; Washing the probe before and after administering medication and enteral diet; Care in preparing the diet; Be careful when managing the diet; Changed the text to filtered or mineral and boiled water, but at room temperature; Food hygiene and handling the diet; Hygiene when handling the patient and devices in use; Addition of a table for controlling the preparation and administration of enteral diet;
Gastrostomy and jejunostomy	Care in the administration of diet and medication; Strengthening hygiene in patient handling, devices in use, food, enteral diet, etc; Table addition for diet preparation and administration control;
Tracheostomy •	Change of image to metallic tracheostomy; Addition of information on the use of 0.9% saline solution for the aspiration procedure; Exchange and addition of images in the procedures performed (fixation, dressing, cleaning of the cannula);
Elimination stomas	Correction of the word stoma: in the previous guide, it was written ostomy; Addition of a table for controlling the exchange of the collection bag;
Indwelling urinary • catheter	Change in the fixation images of the urinary catheter;
Intermittent • urinary catheterization at • home	Guidance on covering the glans with the foreskin to avoid injury to the male genital organ; Change the word 'legs' to 'lower limbs' in the expression "Spread lower limbs" during the female bladder catheterization procedure; Addition of the difference between the catheter used in indwelling bladder catheterization and the catheter used in intermittent bladder catheterization; Strengthening hygiene in patient handling and hygiene of male and female genitalia;
Useful phones	Addition of emergency numbers (Mobile Emergency Care Service, Fire Department, Military Police, Women's Service Center, Human Rights); Addition of illustrative figures with the number of useful and emergency phones.

Source: The authors (2024)

After making the adjustments to the guide, based on the experts' suggestions, the final product was presented for use in the intranet system of the University Hospital where it was developed, containing 40 pages divided into the sections: cover, presentation, summary, seven chapters with care-educational guidelines, and useful phone numbers in case of emergency (Figure 1).

Figure 1 – Final version of the Guide for preparing the surgical patient/companion for hospital discharge, after suggestions from specialists, Santa Maria, RS, Brazil, 2024



Source: The authors (2024)

DISCUSSION

Developing new health technologies is a potential transformative agent for better healthcare practices. In this sense, scientific knowledge in nursing proves to be significant, necessary, and constantly evolving to qualify health outcomes, which can be observed from the production, validation, implementation, and evaluation of technologies¹²⁻¹⁸.

The product of this study presents itself as a technological innovation, aiming to qualify care based on the needs of the surgical patient during the transfer of care from the hospital to their home at the time of hospital discharge. The produced guide can be applied from the patient's admission to discharge as a potential strategy for the patient's dehospitalization, involving professionals and clients^{3,19-21}.

In the "Objective" domain, two items obtained an IVC of 0.73, that is, borderline to what was established by the study. Therefore, we sought to address the experts' suggestions in order to raise the quality of the guide. Thus, an explanatory introduction was inserted for each chapter in the CET; the text was revised to make it more understandable to the target audience (patients and companions); dialogue balloons were included to reduce text and make reading more dynamic and visually appealing; in addition to the revision of procedures through their detailed description.

Regarding the item of behavior change incentive, with an IVC of 0.73, some experts indicated that the change in attitude of patients and companions through the use of the guide is characterized as complex and challenging. This fact was justified by the need for effective communication between professionals and the public so that there is an educational process in health capable of providing clear and dynamic teaching with a view to lasting learning.

Research that proposed this type of technology²²⁻²³ highlights that communication between healthcare professionals and patients should be aligned, aiming at recognizing emerging care and educational needs, which will facilitate teaching and learning, encouraging changes in health behaviors. However, the ease of learning is not only in the quality of the guidance given by the professional but also in the clarity and objectivity of the guide. To this end, studies²²⁻²³ corroborate by pointing out that the language of technology needs to be assertive at the literacy level of the target audience, aiming for greater understanding and adherence to care.

Based on the above, for a CET focused on health education for patients and their companions to be effective, professionals must be qualified to use the guide during the patient's discharge preparation, using a didactic, dynamic, and clear approach that equips the population to use the tool at home. CETs⁹ are important for health education, as they can provide both family members and the patient themselves with the necessary theoretical knowledge about the health-disease process. Such knowledge enhances health promotion with a view to greater patient autonomy and in the way of caring for family members.

The development of studies^{9,12,18}, focused on educational practices in health, show that didactic and informative materials, whether printed or digital, are effective tools for interpersonal communication, facilitating the learning process and critical thinking of a given subject by the target audience. Also, it has been noticed that written instructions have a greater potential for understanding than verbal instructions. Adopting technologies with clear, understandable, and visually appealing language to the target audience can be an important criterion to encourage reading. Thinking about these factors contributes to

the potential dissemination of knowledge, solving practical problems, changing life habits, and becoming a tool to aid in health promotion^{9,12,18}.

In domain 2, "Structure and Presentation", the last item obtained an IVC of 0.61, that is, the illustrations in the guide were considered insufficient and not very expressive. Therefore, items related to inappropriate, uninteractive, and unclear language received an IVC of 0.73, with experts suggesting a review. These suggestions were convergent with previous studies, which adjusted the language and images of the tool based on the opinion of experts so that it presents coherence and meets the educational level of the audience²²⁻²³. Some authors also mention that, in the technological production applied to health education, technical terminologies should be avoided so that the information presents clarity and easy understanding²⁴.

The content of a technology offered to the patient must be accessible, attractive, and clear, adapting to the user's reality, with appropriate language to stimulate their reflection²⁵. For other authors²⁶, the textual elaboration must be appropriate to the educational and cultural level of the individual who will benefit from the technology. It is believed that the language adjustments and the removal of technical terms present in the initial version of the guide will facilitate usability for patients and their companions.

Furthermore, some experts have also suggested modifications to the images, highlighting that their clarity and ease of interpretation can increase the reader's assimilation and ability to recall the textual content. In this way, it is understood that figures are important for mediating communication, as they can transform textual information into visual language, facilitating user reading^{24,26}. To this end, the suggestions were accepted, with the guide's language being revised to remove technical terminology and undergo orthographic review to facilitate content comprehension and enhance its usability. As for the images, a substitution was made for greater clarity and interpretation.

The verbal guidance provided by health professionals, especially by the nurse, combined with textual information and images contained in the guide, will facilitate the care-educational process of the target audience, favoring communication during hospitalization, and aiding (self)care at home²⁷. The CETs are products derived from professionals' daily experience and/or research. In the practical process for which it is intended, they act with the potential to solve problems of caring for and/or educating different populations¹⁸.

In this context, the Guide for the preparation of hospital discharge of the surgical patient/companion was produced and validated to be used by the multi-professional care transition team. The guide can contribute to integrated and collaborative assistance between different professional areas. The CET was produced to be made available in print to the patient and their companion, with a view to continuing care at home, as it contains self-care guidelines, equipping individuals, minimizing doubts, and preventing complications and readmissions.

For the patient-centered transition and continuity of care process to be adequate to their needs and effectively implemented in practice in a resolutive manner, mechanisms materialized through tools, such as health education guides, are necessary with the aim of multiplying and recording important information and care for discharge, becoming an important safety device or facilitator of the care-education process²⁰⁻²¹.

The necessary information for effective health education must be shared through diverse teaching strategies regarding didactic terms and technologies to capture attention and motivate their use²⁵. In domain 3, "Relevance", all items were rated satisfactorily, with

an IVC above 0.80. The experts made positive comments, considering the material well-prepared, easy to handle, and read, containing the main doubts of surgical patients and companions, which will contribute to home care.

The opinions of the experts allowed us to improve the guide to make it functional. Health professionals, as producers of educational materials, must develop tools that are easy to handle and motivating to read. These characteristics have a direct implication on the achievement of the objectives proposed by the technology and, mainly, on meeting the needs of individuals²⁸.

Furthermore, the CET was reviewed by experts with doctoral, master's, and specialist degrees, which increases the credibility and reliability of the information contained therein. This meets the literature¹⁰, which points to the opinion of experts as being relevant for the improvement of technological tools.

It is considered that the produced CET is a quality material, developed from scientific knowledge, following methodological rigor, being considered satisfactory in structure, information, and elaboration in relation to what is proposed. Furthermore, the use of CET can be a way to standardize the guidance provided by professionals to equip and strengthen the knowledge of patients and companions.

It is known that the care provided by nursing is a process that involves complex actions based on technical-scientific knowledge, and technologies can be used as strategies to enhance the process of caring and educating in different care settings⁹⁻¹². In this way, it is expected that the use of CET can contribute to evidence-based practice in Nursing, as it is a technology with the potential to strengthen dialogue, listening, empowerment, self-knowledge, and self-care among health professionals, patients, and companions. This is due to the fact that the CET was considered satisfactory in terms of structure, information, and elaboration.

The guide for preparing the surgical patient and their companion for hospital discharge brings contributions to the health field by enabling the qualification of the work process, making it possible to improve individualized care education for the patient and optimizing work processes. CET presents potentialities to the nurse, who should use it as a mediator of health actions, quality, and safety of care, with a view to hospital discharge planning. From this perspective, the population will be equipped with reliable and easy-to-understand information to carry out the transfer of care to the home.

The use of the care-educational guide may help prevent readmissions, and this use should begin at hospital admission, considering the discharge planning and, consequently, the transfer of care to the home. It may also help the perception of the patient's self-image, contribute to any questions, and direct the user to perform procedures.

As limitations, it is pointed out the absence of validation feedback from the specialists, a factor that contributed to the decrease in participants. Another limitation lies in the assessment of the technology's usability by healthcare professionals, surgical patients, and their companions, a step that will be developed in future studies.

CONCLUSION

This study envisioned validating a guide produced by an interprofessional team for the transfer of care to surgical patients discharged to home. The technology was produced so that the professional can develop health education with the surgical patient and their companion. The CET is valid, with emphasis on accessible language, expressive imagery content, and specific information, ensuring the reliability of the guidelines contained therein.

The technology in question presents a care-educational potential as scientific knowledge is put into practice through techniques and procedures during the care process. With this knowledge, it becomes possible to qualify hospital discharge, through the approach between the multiprofessional team, patients and their companions in the context of caring and educating.

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