ORIGINAL ARTICLE

VALIDATION OF ELDERLY CARE MANUAL AFTER BRAIN SURGERY*

VALIDAÇÃO DE MANUAL DE CUIDADOS DE IDOSOS APÓS CIRURGIA CEREBRAL

VALIDACIÓN DEL MANUAL DE ATENCIÓN PARA PERSONAS MAYORES DESPUÉS DE LA CIRUGÍA CEREBRAL

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ABSTRACT

Objective: to validate the educational technology “Manual of family care for the elderly subjected to brain surgery”. **Method:** this is a methodological study conducted in two stages: content validation with 11 expert judges and semantic validation with eight representatives of the target audience. At each stage, a validated Likert questionnaire was applied. Descriptive statistics was used to obtain the content validity index and semantic validity index. **Results:** it is revealed that the content validity index among expert judges was 0.80 and the semantic validity index among the target audience was 0.98. **Conclusion:** the manual was validated in content and appearance as educational technology to support relatives of elderly people undergoing brain surgery and mediate the educational work of the multidisciplinary team, especially the nurse, and can positively impact post-discharge care. **Descriptors:** Health of the Elderly; Health Education; Biomedical Technology; Educational Technology; Perioperative Nursing; Patient Discharge.

RESUMO

Objetivo: validar a tecnologia educacional “Manual de cuidados familiares com a pessoa idosa submetida à cirurgia cerebral”. **Método:** trata-se de um estudo metodológico realizado em duas etapas: validação de conteúdo com 11 juízes especialistas e validação semântica com oito representantes do público-alvo. Aplicou-se, em cada etapa, um questionário validado do tipo *Likert*. Utilizou-se a estatística descritiva para a obtenção do índice de validade de conteúdo e índice de validade semântica. **Resultados:** revela-se que o índice de validade de conteúdo entre os juízes especialistas foi de 0,80 e o índice da validade semântica entre o público-alvo foi de 0,98. **Conclusão:** validou-se o manual em conteúdo e aparência como tecnologia educacional para apoiar familiares de pessoas idosas submetidas à cirurgia cerebral e mediar o trabalho educativo da equipe multidisciplinar, principalmente o enfermeiro, podendo repercutir positivamente no cuidado pós-alta hospitalar. **Descritores:** Saúde do Idoso; Educação em Saúde; Tecnologia Biomédica; Tecnologia Educacional; Enfermagem Perioperatória; Alta do Paciente.

RESUMEN

Objetivo: validar la tecnología educativa “Manual de cuidados familiares para ancianos sometidos a cirugía cerebral”. **Método:** este es un estudio metodológico realizado en dos etapas: validación de contenido con 11 jueces expertos y validación semántica con ocho representantes del público objetivo. En cada etapa, se aplicó un cuestionario de *Likert* validado. Se utilizó la estadística descriptiva para obtener el índice de validez de contenido y el índice de validez semántica. **Resultados:** se revela que el índice de validez de contenido entre los jueces expertos fue de 0,80 y el índice de validez semántica entre el público objetivo fue de 0,98. **Conclusión:** el manual fue validado en contenido y apariencia como tecnología educativa para apoyar a los familiares de personas mayores que se someten a cirugía cerebral y mediar en el trabajo educativo del equipo multidisciplinario, especialmente el enfermero, y puede tener un impacto positivo en la atención posterior al alta. **Descriptor:** Salud del Anciano; Educación en Salud; Tecnología Biomédica; Tecnología Educacional; Enfermería Perioperatoria; Alta del Paciente.

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*Article extracted from the dissertation << Post-neurosurgery home care: construction and validation of a manual for the elderly and their families >>. Federal University of Amazonas. 2016.

How to cite this article

Rocha GS, Oliveira APP, Teixeira E, Nemer CRB. Validation of care manual for the elderly after brain surgery. J Nurs UFPE on line. 2019;13:e243025 DOI: <https://doi.org/10.5205/1981-8963.2019.243025>

INTRODUCTION

In the area of health, especially in Nursing, the use of Educational Technologies (ET) is expanded as a device to mediate educational work in order to strengthen the learning of patients and their families. An ET should systematically gather scientific knowledge available in the literature and favor their translation to the population, but in addition to producing new ET, it is necessary to validate such technologies.¹⁻²

In this study, the need for ET to mediate the educational work of nurses with patients and family members when brain surgeries occur is highlighted, because after the surgical treatment of patients, a disabling process usually leads to a condition of physical dependence, compromising the activities of daily living and, consequently, the quality of life. Thus, after hospital discharge, it is necessary to continue the hospital care at home of these people, 3 which is predominantly performed by family members.

In this sense, the nurse can act as a facilitator, favoring the understanding and clarification of patients and family members about the process experienced in the perioperative period, which extends after hospital discharge, and this can be accomplished through health education, important strategy for professionals in the area, who can make use, in this moment, of ET for the orientations.⁴⁻⁵

It will be possible, through manuals that address the important care for the continuation of treatment to the elderly at home, the learning of those involved in the care process, which can be safer in everyday life. Please note that this ET format is booklet with information, explanations and illustrations and should have clear and understandable language for the target audience; they can be about a particular health care or procedure and are used as a health education strategy in the educational work of nurses and other health team professionals, with a view to subsidizing patients, family members or the general population, depending on the purpose of they want to reach.⁶

It is believed that when used at home by the elderly and their families, a manual can be an instrument of help and consultation, a facilitating device, as it contains specific guidelines and can support these people so that they participate more safely and comprehensively in the treatment.⁶

Thus, in view of what was exposed by the team, a manual printed educational technology was produced, entitled “Manual of family care for the elderly subjected to brain surgery”, with a view to mediating health education actions at the moment of hospital discharge. The following questions emerged from production: “Is the manual a valid

instrument for mediating health education at hospital discharge of patients undergoing brain surgery?”; “What do expert judges and their own audience suggest about the handbook?”.

OBJECTIVE

- To validate educational technology “Manual of family care for the elderly subjected to brain surgery”.

METHOD

This is a methodological study carried out in two stages: content validation with expert judges; semantic validation with audience representatives. It is explained that the methodological research focuses on the elaboration, validation or refinement of instruments and methodological strategies.⁷⁻⁸

It is necessary, for the development of the content validation process, to have a group of experienced professionals, who will be the expert judges. Validation will assess the content of the construct, its scope and representation. It is also indicated that ET is validated by a second group with representatives of the target audience, who will perform semantic validation of ET.¹⁻²

Validation was based on Pasquali's theoretical-methodological framework, which is organized around three poles: theoretical, empirical and analytical. It is detailed that, in the theoretical pole, the analysis is semantic, focused on intelligibility, and construct, focused on the relevance of the items; at the empirical pole, the evaluation is of the psychometric quality of a measuring instrument; at the analytical pole, the analysis aims to estimate the validity and reliability of the measuring instrument.⁹ In the validation of ET, the procedures of the theoretical pole are considered the most important, since they are aimed at theorizing about the content of interest.¹⁰

The study was anchored in a hospital and emergency room of the public reference network in traumatology in the city of Manaus, AM, Brazil, from October 2015 to September 2016.

The selection of health judges was established by scoring the following criteria: titration; time of professional experience; teaching experience and scientific production in the health area of the elderly, with a minimum of five points. For judges from other areas, the following criteria were scored: titling; teaching experience and scientific production in the area of expertise, with a minimum of three points.¹¹

The target audience was selected by the following criteria: patients - elderly, submitted to neurosurgery, hospitalized at the time of data collection, lucid, oriented; caregivers / family members - caregiver after hospital discharge, aged over 18 years.

Judges were invited to participate by email; after acceptance, the Free and Informed Consent Term (FICT) was sent; after the return of a copy with the signature, the manual in PDF format and the Likert instrument were sent.

Elderly patients and family members were approached in the hospital's neurosurgical ward; after verifying the fulfillment of the criteria, those who could participate in the research were invited and, after the acceptance and signature of the FICT, At the request of patients and family members, the shared reading of the manual and the Likert instrument was performed. It was completed by the researcher.

The two instruments used contained the following scores: Totally Adequate (TA); Adequate (A) (positive value = 1); Partially Adequate (PA) (value = 0); Inadequate (I) (negative value = -1).

The data obtained from Microsoft Office Excell were entered. Descriptive statistics were used to obtain the content validity index and semantic validity index. In this study, the items that obtained indexes greater than or equal to 0.7 were considered valid.¹

Ethical aspects were respected at all stages. This study was based on Resolution 466/12 of the National Health Council (NHC),¹¹ approving it by the Research Ethics Committee of the Federal University of Amazonas, with CAAE 51 300415.0.0000.5020.

RESULTS

The content was validated with nine expert health judges and two from other areas, and the selected health professionals were five nurses, three doctors (two geriatricians and one neurosurgeon) and one physiotherapist, and from other areas, a pedagogue and a graphic designer.

The profile of health professionals is described: ages between 33 and 76 years; all with degrees obtained in *Stricto sensu* postgraduate courses; all

with professional experience in elderly health; working time between five and 54 years; all with scientific production in the health area of the elderly (three to 50 productions); origin of the North, Northeast, Southeast and South. It complements the profile of professionals from other areas: ages between 43 and 48 years; all with degrees obtained in *Stricto sensu* postgraduate courses; teaching experience in their respective fields; all with scientific production in the area of operation (five to ten); the two residents in the city of Manaus (AM).

The semantic validation consisted of eight representatives of the target audience, four elderly and four family members, aged between 65 and 86 years; three female; one male; two illiterate; one with incomplete high school; one with incomplete elementary school. Regarding the clinical diagnosis, two were hospitalized with systemic arterial hypertension (SAH) and two due to fall, all submitted to craniotomy for drainage of subdural and extradural hematoma: three from Manaus and one from the interior of the state of Amazonas.

Among family members, three are sons and one sister; age ranged from 36 to 61 years; three were female and one male; three had completed high school and one had incomplete elementary school; three were from Manaus and one from another municipality in the state of Amazonas.

It was found that the Content Validity Index (CVI) among expert judges was 0.80. CVI was obtained with the sum of scores TA = 102 and A = 76 (178), divided by total scores = 220.

In relation to the three blocks of the instrument (objectives, structure and presentation, relevance), 102 scores (46.36%) TA, 76 (34.55%) A, 40 (18.18%) BP, 2 (0.90%) I, indicating that the disagreement propensity was lower than the average agreement and thus the content of the manual was validated (Table 1).

Table 1. Distribution of expert judges' answers according to the blocks and items of the instrument. Manaus (AM), Brazil, 2016.				
Blocks and Items	Scores (N=11)			
	TA	A	PA	I
1 Objectives				
1.1 The information / content is / is consistent with the needs of the target audience	6	3	2	0
1.2 Information / content is important to the quality of life of the target audience	8	2	1	0
1.3 Information / content invites and / or instigates behavior and attitude changes	5	5	1	0
1.4 The information / contents can circulate in the scientific area of the area	5	4	2	0
1.5 The information / content meets the objectives of institutions that work with the target audience	7	2	2	0
2 Structure and presentation				
2.1 Educational material is appropriate for the intended audience	5	4	2	0
2.2 Messages are presented clearly and objectively	5	4	2	0
2.3 The information presented is scientifically correct	5	4	2	0
2.4 The material is appropriate to the socio-cultural level of the target audience	5	3	3	0
2.5 There is a logical sequence of proposed content	2	4	4	1
2.6 The information is well structured in agreement and spelling	4	4	3	0
2.7 Writing style matches audience level	5	1	5	0
2.8 Cover, presentation, summary, and final words information is consistent	4	3	4	0
2.9 Title and topic length is appropriate	4	5	2	0
2.10 The illustrations are expressive and sufficient	3	6	1	1
3 Relevance				
3.1 The themes of the material portray key aspects that need to be reinforced	8	3	0	0
3.2 The material allows the transfer and generalization of learning to different contexts (hospital and home)	3	7	1	0
3.3 The material proposes the construction of knowledge for the target audience	5	6	0	0
3.4 The material addresses the subjects needed by the target audience	7	2	2	0
3.5 The material is suitable for use by any healthcare professional	6	4	1	0
Total	102	76	40	2
*(TA = Totally adequate, A = Adequate, PA = Partially adequate, I = Inadequate).				

It was found that the semantic validity index among the target audience was 0.98. CVI was obtained with the sum of scores TA = 88 and A = 117 (205), divided by total scores = 208.

Regarding the five blocks of the instrument (objectives, organization, writing style,

appearance, motivation), 88 (42.40%) AT, 117 (56.25%) A, three (0.22%) were reached. A, zero (zero) I, indicating that the disagreement propensity was lower than the mean agreement and thus the semantics of the manual was validated (Table 2).

Table 2. Distribution of audience responses according to instrument blocks and items. Manaus (AM), Brazil, 2016.				
Blocks and Items	Scores (N=08)			
	TA	A	PA	I
1 Objectives				
1.1 Meets target audience goals	5	3	0	0
1.2 Helps the intended audience	2	6	0	0
1.3 Suitable for use by anyone caring for the intended audience	3	5	0	0
2 Organization				
2.1 The cover is attractive and indicates the content of the material	4	4	0	0
2.2 Headline and topic length are appropriate	2	6	0	0
2.3 Topics have sequence	4	4	0	0
2.4 There is consistency between cover, back cover, presentation and content information	3	5	0	0
2.5 The material (paper / print) is appropriate	3	5	0	0
2.6 The number of pages is adequate	4	4	0	0
2.7 Themes portray important aspects	4	4	0	0
3 Writing style				
3.1 Is the writing in proper style?	3	5	0	0
3.2 Is the text interesting? The tone is friendly?	3	5	0	0
3.3 Is vocabulary accessible?	4	4	0	0
3.4 Is the theme of each session associated with the corresponding text?	1	6	1	0
3.5 Is the text clear?	5	2	1	0

3.6 Does writing style matches your level of knowledge?	1	7	0	0
4 Appearance				
4.1 Do pages or sections look organized?	6	2	0	0
4.2 Are the illustrations simple?	6	2	0	0
4.3 Do the illustrations serve to complement the texts?	4	4	0	0
4.4 Are the illustrations expressive and sufficient?	4	4	0	0
5 Motivation				
5.1 Is the material appropriate for you?	2	6	0	0
5.2 Are the contents of the manual presented logically?	3	4	1	0
5.3 Is the interaction invited by the texts? Does it suggest actions?	2	6	0	0
5.4 Does the handbook address the issues necessary for the intended audience?	4	4	0	0
5.5 Does it invite / instigate your behavior and attitude changes?	3	5	0	0
5.6 Does the manual bring knowledge to you?	3	5	0	0
Total	88	117	3	0
*(TA = Totally adequate, A = Adequate, PA = Partially adequate, I = Inadequate).				

The final version of the manual “Family care for the elderly subjected to brain surgery” was formatted so that the target population does not have difficulty reading; the font size was between 14 and 16; the manual contains 39 two-sided pages with cover, summary, presentation, content and illustrations, organized into topics, and at the end there is a page with useful phones; Regarding illustrations, drawings and diagramming, all were created by two design professionals, from some doodles of the researcher, and some of the drawings were adapted from other sources.

It is noted that the final content of the ET contains the following themes: returning home after brain surgery; brain diseases and problems and their complications; house preparation before hospital discharge; daily care guidelines: communication, movement and relocation, hygiene and comfort, skin and diaper use, simple dressings, oral and enteral feeding, hydration, use of medication, eliminations (urine and feces) and guidance for sleeping net use.

DISCUSSION

It is pointed out, on health education for the preparation of the transition from hospital to the home of elderly patients with neurological diseases or sequelae, which research indicates that it is still incipient, therefore, there is a need to implement educational models that reach the context of each family that considers the culture, beliefs and customs regarding the elderly, as it is an extended period of care.¹¹⁻³

They are similar to the results obtained in block 2 of the instrument used in content validation, regarding structure and presentation, to the results of other studies, which showed that, in block 2, there are more lower agreement scores, especially regarding the spelling and language items of ET, and there is a need to adapt the language of the symbols and signs of the messages to be transmitted to the target population.¹⁴⁻⁵

It is favored by ET-mediated health education that the population acquires new knowledge about

health care and disease prevention, and is also an important device for humanized care.¹⁵

It is understood that maintaining the validation order first by the expert group and then by the target audience is important because it is necessary that, before being evaluated by patients and family members, the contents must be evaluated by the experts, to be adequate, correct, defined and organized,¹⁴ and such an option adopted in this study proved to be propositional in this sense.

It was made possible, by the participation of the target audience in the manual evaluation, the negotiation between the lived reality and the scientific knowledge. It is essential, in order to fulfill the objectives of ET, its validation by patients and relatives in order to represent the reality in which they live and, thus, what both need.⁵

From the validation, points were identified to improve in the manual regarding readability and presentation. In addition, the organization of a printed material regarding the sequence of text, images, organization of the messages to be conveyed, signaling of important passages, use of colors, spacing, proper paper and font is for facilitate attention and readability of educational material.¹⁴

It is pointed out that the understanding of an educational manual is often neglected during production, and many end up being difficult to understand. It is therefore necessary to take into account the educational level of the intended audience of the material.¹⁴

Regarding the illustrations and drawings chosen for the manual, it is noted that there were new creations by the design responsible for the illustrations, and only some drawings were adapted from other sources. Illustrations of educational material should be appropriate and adjusted according to what you want to convey, making the text clear and understandable to the intended audience.¹⁴

The nurse needs to identify, during hospitalization and discharge preparation, the <https://periodicos.ufpe.br/revistas/revistaenfermagem/index>

needs of patients and their families, in order to prepare them for home care, with a view to effective care, reducing existing anxieties and doubts and preventing possible complications that may lead to readmissions. The nurse will be performing, by developing caring educating, humanized care to patients and families, promoting more tranquility and less wear and tear in the situation in which they find themselves.¹²⁻³

Health education is considered an alternative to promote the health of the elderly, and ET-mediated strategies, not only with older people, but also with families, can lead to empowerment with regard to health care and better health control of the life of these people.¹⁵

It is understood that ET are instruments that contribute to both the educational work of nursing and the subject-care; the caring subject will be provided with guidance and information even when at home; Nursing staff can organize their actions and systematize their care to respond to the care needs of patients and their families.¹⁶

Nursing has used devices aimed at health education, and it is emphasized that such devices are for the care, self-care and self-care for patients in different illness conditions and / or to strengthen health-seeking behaviors.¹⁷

It is recognized that having access to an educational and instructional material facilitates and standardizes the guidelines to be made, with a view to health care, which greatly helps in the recovery of the patient, as well as also helps family members to understand the health-disease process to walk the road to recovery.¹⁸ In this sense, patients and families are considered interdependent and each becomes an active subject, as an originator of human acts and, therefore, care will not be an exclusive practice of the Nursing team and there will be the participation and interaction of those involved in the care process.¹⁹

It is inferred that, to inform about care through ET to elderly patients or their families, the nurse needs specific knowledge and experience about care in the area of orientation and thus needs training in Gerontology, which is indispensable today in hospital, outpatient or home care.²⁰

It is believed that the experience of the researcher in daily monitoring of elderly people with neurological disease or trauma, who need surgical intervention, was what enabled a close look at the specific needs that patients present during hospitalization, as well as after hospital discharge,²¹ This contributed to the choice of the route and the production and validation of the manual.

CONCLUSION

The manual was validated in content and appearance as educational technology to support

relatives of elderly people undergoing brain surgery and mediate the educational work of the multidisciplinary team, especially the nurse, and may positively impact post-discharge care.

It is recommended to apply the manual during the hospital discharge process so that the nurse stimulates elderly and family patients, as well as provide necessary subsidies for home care, as the guidelines, if clear and in accessible language, can be followed and thus, will be a guide for help after hospital discharge.

Through this study, it is possible to encourage the production and validation of new ET about care in the area of gerontology, in order to promote health, reduce spending on readmissions and prevent health problems in the elderly population.

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Submission: 2019/10/21

Accepted: 2019/10/23

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