

CONCEPTIONS ON CARE AND EDUCATION TECHNOLOGIES IN THE PRACTICES OF THE HOSPITAL NURSE

Concepções sobre tecnologias do cuidar e educar na práxis do enfermeiro hospitalar

Concepciones sobre tecnologías del cuidado y educar en la práxis del enfermero hospitalario

Cléton Salbego^{1*}; Elisabeta Albertina Nietzsche²; Tierle Kosloski Ramos³; Nara Marilene Oliveira Girardon-Perlini⁴; Maria Ribeiro Lacerda⁵; Tamiris Ferreira⁶

How to quote this article:

Salbego C, Nietzsche EA, Ramos TK, *et al.* CONCEPTIONS ON CARE AND EDUCATION TECHNOLOGIES IN THE PRACTICES OF THE HOSPITAL NURSE. *Rev Fun Care Online*.2021. Jan./Dec.; 13:150-157. DOI: <http://dx.doi.org/10.9789/2175-5361.rpcfo.v13.8669>

ABSTRACT

Objective: To analyze the conception (s) of nurses who work in the hospital scenario on care and education technologies. **Method:** qualitative, descriptive-exploratory research, based on the philosophical reference of human praxis. Developed with 21 nurses from a public hospital in the South of Brazil. Data were collected through a semistructured interview and observation. For the analysis, the thematic content analysis technique was used. **Result:** two categories emerged: care technologies: from the use of ways to use and manage; and technologies of education: approaches with the praxis of educating-caring and caring-educating. **Conclusion:** analyzing and reflecting on concepts of care and education technologies has demonstrated that nurses need to evolve their knowledge about these definitions in order to apply them in decision making, thus raising the quality of care outcomes.

Descriptors: Technology, Nursing, Nursing care, Hospital care, Concept formation.

¹ Nurse graduated from the *Universidade Regional Integrada do Alto Uruguai e das Missões, Campus Santiago-RS*. Master's and Doctoral student in Nursing from the Federal University of Santa Maria-RS. Nurse at São Francisco de Assis Hospital, Santa Maria-RS.

² Nurse graduated from the *Nossa Senhora Medianeira College, Santa Maria-RS*. PhD in Nursing from the Federal University of Santa Catarina-SC. Full Professor of the Nursing Department of the Federal University of Santa Maria-RS.

³ Nurse graduated from the Federal University of Santa Maria-RS. Master's and Doctoral student in Nursing from the Federal University of Santa Maria-RS.

⁴ Nurse graduated from the Federal University of Santa Maria-RS. PhD in Nursing from the University of São Paulo. Associate Professor of the Nursing Department at the Federal University of Santa Maria-RS.

⁵ Nurse graduated from the State University of Londrina. PhD in Nursing from the Federal University of Santa Catarina. Permanent Professor of the Post-Graduation Program in Nursing at the Federal University of Paraná. Visiting Professor of the Post-Graduate Nursing Program of the Federal University of Santa Maria-RS.

⁶ Nurse graduated from the Federal University of Santa Maria-RS. Master's and Doctoral student in Nursing from the Federal University of Santa Maria-RS.

RESUMO

Objetivo: Analisar a(s) concepção(ões) de enfermeiras que atuam no cenário hospitalar sobre tecnologias do cuidar e educar. **Métodos:** pesquisa qualitativa, descritiva-exploratória, fundamentada pelo referencial filosófico da práxis humana. Desenvolvida com 21 enfermeiras de um Hospital público do Sul do Brasil. A coleta dos dados ocorreu por meio de entrevista semiestruturada e observação. Para análise, utilizou-se a técnica de análise de conteúdo temática. **Resultados:** emergiram duas categorias: tecnologias do cuidar: da utilização em si às maneiras de se utilizar e gerenciar; e tecnologias do educar: aproximações com a práxis do educar-cuidando e cuidar-educando. **Conclusão:** analisar e refletir sobre conceitos de tecnologias do cuidado e educação demonstrou que os enfermeiros necessitam evoluir seus conhecimentos sobre essas definições, no intuito de aplicá-las na/para tomada de decisões, elevando assim, a qualidade dos resultados assistenciais.

Descritores: Tecnologia, Enfermagem, Cuidados de enfermagem, Assistência hospitalar, Formação de conceito.

RESUMEN

Objetivo: Analizar la (s) concepción (es) de enfermeras que actúan en el escenario hospitalario sobre tecnologías del cuidar y educar. **Método:** investigación cualitativa, descriptiva-exploratoria, fundamentada por el referencial filosófico de la praxis humana. Desarrollada con 21 enfermeras de un Hospital público del sur de Brasil. La recolección de los datos ocurrió por medio de entrevista semiestructurada y observación. Para el análisis, se utilizó la técnica de análisis de contenido temático. **Resultado:** surgieron dos categorías: tecnologías del cuidado: de la utilización en sí a las maneras de utilizar y administrar; y tecnologías del educar: acercamientos con la praxis del educar-cuidando y cuidar-educando. **Conclusión:** analizar y reflexionar sobre conceptos de tecnologías del cuidado y educación demostró que los enfermeros necesitan evolucionar sus conocimientos sobre esas definiciones, con el fin de aplicarlas en la toma de decisiones, elevando así la calidad de los resultados asistenciales.

Descriptores: Tecnología, Enfermería, Atención de enfermeira, Atención hospitalaria, Formación de concepto.

INTRODUCTION

The process of caring and educating represents the essence of nursing, transcending technical practices. For an expanded conception, we need to consider the attitudinal and relational dimensions, such as responsibility, competence, sensitivity, kindness, attention, affection, respect, interaction and dialogue.¹⁻²

Nursing as a profession stands out in the hospital context, assuming the care of patients and family members through various strategies, among them the technologies of caring and educating. Caring Technologies (TC) are characterized by technical and scientific knowledge and practices built from investigations, the application of theories and the daily experience of professionals and clients. Thus, they constitute a systematic set of procedural and instrumental actions aimed at qualified assistance to human beings in all their dimensions of life. The Educating Technologies (TE), on the other hand, constitute a body of knowledge that is strengthened by the action / interaction of / with man. These transcend the concept of construction and use

of artifacts or equipment, that is, they are consolidated as a systematic process of application of scientific knowledge with a view to planning, execution, control and individual and / or collective monitoring during educational practices, whether formal or informal.³

In the meantime, we must (re) think about how these technologies are being inserted into the praxis of professionals. In the midst of globalization and development, social, economic, political and technological, it is necessary to evaluate how technologies are being conceived / used, in order to reflect on the humanist character of their insertion in the practice of caring and educating in hospital nursing, with a view to minimizing the effects of a mechanized and materialistic work process.⁴⁻⁵

This praxis requires the individual to act / reflect / act or reflect / act / reflect in order to reach levels of thought that enable the professional to carry out practices that transcend the mere transformation of the environment in an objective way, but also, in a subjective way.⁶ In this study, it is based on the premise that praxis is a link between the well-being of individuals inserted in the context of the health area with the care-educating process, because it is through actions and reflections that the professional, during the relationship with the client, sees the possibility of exercising both educating and caring for the promotion of comprehensive care geared to the needs of each individual and collective.

In view of the above, the question is: what is the conception of nurses who work in the hospital scenario about technologies of care and education? To this end, the objective was to analyze the conception (s) of nurses who work in the hospital setting on technologies of care and education.

METHODS

Qualitative, descriptive-exploratory research, based on the theoretical-philosophical framework of human praxis developed in a University Hospital, in the State of *Rio Grande do Sul*. Initially, a situational diagnosis was carried out by the researchers, which estimated a sample of 28 participants considering the number of units / services that had at least one nurse professional on their staff. Of the sample, 21 nurses met the inclusion criteria: working in the hospital for a period equal to or greater than one year, and being active during the period intended for the study. Five refused to participate, and two worked in the service for less than a year. In the services/units where there was a refusal, a new selection was not carried out, as the other nurses worked with less time than established by the research.

Data collection was carried out from March to December 2015 through non-participant observation and semi-structured interview. The observations allowed to capture the nurses' daily life with apprehension of the practices involved in the process of creating and / or using

technologies of care and education. Important aspects / elements about the conception attributed to technological typologies were also captured. A field diary was used to describe the data, counting 256 hours. The observations were made in different shifts, according to the participants' work schedules. The hours of observation performed in each unit / service varied between 10 and 15 hours.

Subsequently, individual and semi-structured interviews were conducted, with the help of a script covering socio-demographic data; hospital practices; understanding of the terms care and education in nursing care; conception and insertions of care and education technology; and their contributions to the nurse's praxis. These were recorded and transcribed by the researchers.

Finally, content analysis was carried out.⁷ Units / phenomena expressed in the texts were selected from the coding and the units were grouped into two categories representative of the data corpus, which allowed for discussion in the light of the literature.

The research was approved by the Ethics Committee of the Federal University of Santa Maria - RS under opinion 932.520 / 2015. The participants signed the Free and Informed Consent Form. In order to guarantee confidentiality and anonymity, capital letters were used: O (observation), E (interview), Nurse (nurse), followed by the numerical identification corresponding to the order in which the collection took place (for example, OEnf 1 ...; EEnf 1 ...).

RESULTS AND DISCUSSION

21 nurses participated in the research, between 29 and 60 years old. Regarding marital status, 10 were single, eight were married, one was in a stable relationship, one was a widow and one was divorced. The training varied, with 13 being up to 20 years old and eight over 20 years old. Regarding the length of experience, 14 had up to 10 years of work and seven more than 20 years. The length of service at that institution varied, with 11 having worked for up to 10 years and 10 above the time spent at the hospital.

Regarding the training institution, 13 were graduates from private institutions and eight from public institutions. As for improvement, 14 had specialization and seven master's degrees in nursing.

The data were organized from two analytical categories, namely: Care technologies: from the use itself to the ways of using and managing it; Technologies of educating: approaches with the praxis of educating-caring and caring-educating.

Care technologies: from use itself to ways of using and managing

The participants conceive of CT based on "technical-procedural use" and "ways of using" a technology. Based

on this, nurses interrelate "techniques and procedures", understanding that one (co) exists from the other.

[...] all these devices that I use to manage patient care, be it technologies that do not involve equipment, guidance, even those that involve equipment, a puncture or a dressing guidance (NUR 14).

A venipuncture, or passing a PICC (Peripherally Inserted Central Catheter) [...] first I choose the vein, technology (laughs). [...] then you do asepsis [...] to do this procedure I follow a protocol (OEnf 21, 06/08/2015, from 2 pm to 7 pm).

In contrast to the above, regarding the ways to use CT, it was observed that:

Care technologies are not only the equipment, in itself, that we have as a technological, the computer, the respirator, but the ways to use these technologies to improve your work, to improve nursing care (OEnf 09, 25 / 04/2015, from 10 am to 1 pm).

CT is understood not only as the mechanical and inflexible use of products. The "ways of using" a technology, is seen as a praxis rich in reflective awareness about the practical process, called reflexive praxis.⁵

It is considered that the use of tools, during the praxis of care, involves a process of action (the act of operating a machine) and reflection (moment of encounter between theory and practice for resolving the action). It is believed that the work of nurses in the midst of the vast availability of technological resources, must be conducted in an insightful way, so that they do not become alienated or hostage to a product.

[...] it goes from the dressing, the puncture you perform, to health education, when it strengthens a family / patient. [...] care, food is very [...] wide, bathing are ways of caring, everything that can promote the health and development of the patient [...] all the knowledge and actions used to make this effective can be determined as technologies (EEnf 03).

The technology of care would be the technical procedures that I perform, but trying to have a comprehensive view of this patient, trying not to use only the operational, but having my scientific knowledge to know how to do it (EEnf 06).

It appears that the conception of CT is not centered only on the machines and the professional's knowledge, but also on the execution of systematic, procedural and instrumental actions.

[...] new dressings that used to be (m) at the base of the

ointment, and now we have vacuum dressings that make it easier to protect the patient; new beds that the patient himself has the controls at the head. In the past, there was a crank there to raise or lower the headboard [...] (OEnf 08, 15/09/2015, from 10 am to 1 pm).

[...] the use of Nursing Care Systematization is a care technology. The Braden and Morse scales are technologies of care that, we are able to pay greater attention to the patient, to identify situations that can prevent adverse events, falls, pressure ulcers (NFe 12).

Nurses also related CT to care management, highlighting the planning / quality control of the care actions and guidelines developed. It is evident in the statements that these practices have direct implications for the care provided by nurses aimed at patients, companions or the multidisciplinary team itself.

[...] I do the check-list, which is routine [...] I do a simple routine of checking in order to see if our product is suitable, if our technique is adequate, with the possibility of guidance from the to see what can be improved, to facilitate the service and to speed up the release of areas and beds (EEnf 11).

[...] they are guidelines that you can help with care, try to improve care (OEnf 19, 04/25/2015, from 10 am to 1 pm).

Technologies of educating: conceptions and approaches with the praxis of educating-caring and caring-educating. From a conceptual perspective, it was possible to identify conceptions and purposes for ET in the hospital, ranging from technological tools (computers, computers, books, dolls etc.), to promote the search for knowledge and enable changes in a given context, to the use of folders, to provide the necessary information for the (self) care of the patient and family.

[...] are all the means and materials used, computers, books to seek knowledge, it will provide us with more knowledge. All these means that were created to transmit teaching, both for the professional and for the patient, family. [...] we have our informative folders that were created to inform the patient and their family members (EEnf 02).

[...] tools used for you to do health education with the patient and their family members [...] we have a breast, built to demonstrate anatomical and physiological changes, give guidance [...] we have the health education room where there are dolls with all kinds of surgeries. [...] they have drains, a tube, everything to do this part of orientation with the patient, to understand how he will

come [post-surgery]. [...] we have folders [...] [contribution of the folders] we get the woman to understand, that she is interested in her self-care [...] (OEnf 15, 12/03/2015, from 8 am to 1 pm).

Tools were mentioned to guide patients, companions, or even, to carry out educational processes with professionals. These aim to minimize doubts and / or concerns that arise.

[...] the way in which I approach the patient for a consultation, how I approach an employee during training (EEnf 04).

[...] they are the different ways of developing education, where each one has a methodology to follow, for example, health education, permanent and continuous (EEnf 05).

The teaching resources you use to do in-service education. [...] a video, television, a folder. [...] something that has been elaborated, a serial album for example (EEnf 08).

Considering that the nurses' knowledge is characterized as technology, interwoven with hospital praxis, the participants revealed:

[...] TE, it is at the moment that I am going to educate, I have to read, for me to pass on knowledge I have to be safe in what I am going to do (EEnf 11).

[...] it is using your knowledge, everything you know, it is transmitting knowledge to educate [...] (EEnf 13).

Thinking about technology, evaluating the relationships between man and machine in order to contemplate the universe of insertion of these, is inserted in the praxis of nurses from a perspective that transcends reductionism to the machine. This conception emerges in order to emphasize that a technological product cannot be opposed to human contact, but rather, be an agent and object of this encounter.^{3,8-10}

Thus, the machine must be conceived as an extension of the human being himself who, even without being part of his essence, determines his own existence. Thus, care and technology come together and interrelate, allowing that during the nurse's performance, they turn to the development of care from a humanistic perspective, with a view to providing comfort and well-being, contributing to the recovery of health.^{1,5,11}

Nursing must be sensitized and understand that care relationships cannot be fragmented and / or replaced, but strengthened by technological resources. The data of this research pointed to a conception of technology associated with the use of machines and equipment.

It is noticed that the way nurses see CT, in the hospital

environment, is not dissociated from its historical and cultural conception, that is, reductionism to machines, computerization and industrialization, among others. CT in nursing are conceived as “interactional dimensions allowing professionals (us) to use their senses to choose and carry out assistance, allowing (re) finding sensitivity, solidarity, love, ethics and respect for themselves and on the other (clientele). The purpose of CT is to support, maintain and promote the life process of people in situations of health and illness”^{12: 346}

Based on this way of visualizing the technology, it is proposed to reflect: do these products operate, alone, without human intervention? Don't need follow-up? Is “artificial intelligence” so extraordinary, being able to freely lead one or more stages of the care and education process, without the help of man? These and countless other questions must be asked by professionals, so that they do not become hostages to globalization / capital, or even reduced, merely to “machines”, as a simple “gearing process”, but constituted of musculature, bones, skin, blood, brain and pulsating heart and not as beings with alienated and mechanized minds.

At that moment, the technologies (products) are used from an existing practical process, in a finished way, prior to that process and the product, that is, it uses a certain object that already has its predetermined action process, determining “what to do”, “what one wants to do”, and “how to do it”. Thus, the presence of “reiterative or imitative” praxis is perceived, as the professional does not express his creative and transforming potential in his professional practice as a nurse, that is, he only uses existing technologies and / or in use.⁶ In view of these proposed questions and discussions, it is necessary that nurses (re) think about the impact of technologies in their daily practice.

It is noticed that caring for the nurse adds several interfaces, whether in performing procedures, using techniques, even simple actions, such as feeding, cleaning, which, in the context of care, are extremely relevant. This allows the professional to know the human being, careful about their specificities and needs, strengths and weaknesses.

It is perceived that the conception of CT is related to the performance of technical procedures aimed at the patient, such as dressing wounds and the products / materials used for this specific care. Nursing is responsible for performing dressings, with the nurse being the manager of this team and patient care. For this, you need to know the products intended for this purpose and, then, choose the one that best suits the characteristics of the patient's wound and the economic reality of him and the institution where he is hospitalized or at home.¹³

It is noticed that the CTs transcend a machine concept, being seen from the perspective of organization, management and orientation of the actions / behaviors emerging in the unfolding of care by the nurse, directly or

indirectly to the patient. This allows inserting the nurse's management strategies, planned and applied in care. In view of this, the check-list, SAE and Braden scale were mentioned, as valid and effective technologies, which follow organized and systematized protocols for monitoring the conducts / techniques used by professionals; planning and systematizing patient care, as well as organizing, guiding and standardizing the work of nurses and other team members.

From the perspective of praxis, in relation to their levels of consciousness that were presented in the “doing and knowing how to do” of human beings. It is noticed that the participants used different levels of consciousness in their professional daily lives, and a reflective praxis can be visualized.^{3,6}

During the guidance given to patients, companions or the nursing team, the nurse was able to formulate ideas / thoughts anchored in his scientific knowledge, to instrumentalize these subjects in order to provide changes in the context in which they found themselves, be it health, social or professional. At this moment, praxis was able to manifest itself largely imbued with a critical / reflexive awareness capable of not merely providing changes, but rather transforming its reality.

As for TE, they are defined as “those that point out the means of helping to form an awareness for healthy life”^{14: 223} To apply a TE process or product, it is necessary that the educator (health professional) is a facilitator of the teaching-learning process, and the student (clientele) a participant in this process in which both use creative awareness, sensitivity and creativity in the pursuit of personal and professional growth.¹²

The NT were seen as tools, means, forms and materials used by nurses in the search for their own technical and scientific knowledge, aiming to strengthen their skills and the quality of care provided. Therefore, TE is understood based on a potentializing concept of educating-caring for the different social actors involved in the health-disease process of hospitalization.

Computer science and information systems were referred to as fundamental instruments for the search for knowledge, as they allowed easy and real-time access to all types of information, providing the resolution of facts, adversities, minimizing doubts and concerns arising from practice clinical and daily nursing practice.

Society has been following the technical-scientific advance that not only allowed commercial, economic and social expansion, but also opened up possibilities to encourage the creation of equipment and innovations, popularly called technologies. In the health field, this advance introduced information technology in the context of professionals' work, as well as modern medical and surgical devices, which brought numerous benefits and speed to care. The internet in hospital environments provides the expansion of health communication networks,

changing both the profile of the professional and the population with regard to access to information.^{3-4,12,15}

The insertion of ET was seen by the participants as a way for knowledge to be “transmitted” more quickly and efficiently. Still, according to them, they provide possibilities to develop, above all, in addition to educating-caring, managing-educating-caring, since one depends on the other for the systematization and implementation of this process to occur in the hospital. It is understood that the resoluteness of care and education developed will only occur, based on good, coherent and continuous planning of actions and strategies to be carried out in the course of the praxis of hospital nurses. From the perspective of philosophical praxis, the consciousness involved (or that should be involved), at the interfaces of the management-care-education triad, results in a “practical conscience”.

Health education was characterized as an important strategy used by nurses. Some difficulties were noted, with emphasis on the scarcity of physical, human, structural and material resources. Starting from this gap, the development and use of educational strategies, such as teaching materials, have stimulated / enhanced the activities of Health Education in the hospital. This premise implies that the use of educational technology is a facilitator / mediator resource for teaching and learning. Thus, it is perceived, as a reflex, the strengthening of nursing practices aimed at the different social actors involved in the hospitalization process.^{3,16}

In this perspective, the process of guiding can reveal numerous possibilities, one of which can result in the subject's education. In terms of caring-educating and educating-caring for the nurse. The execution of this strategy, characterized as Health Education, appears to promote and strengthen people's (self) care in the face of their uniqueness, whether clinical or surgical. They also assist companions by instrumentalizing them in the formation of an empowered subject to assist the patient, in the course of his (re) establishing biological, psychological, sociological and spiritual during and after his hospitalization.

The knowledge of the nurse is revealed as a support and support to educate and care. This process that involves theoretical (knowledge) and technical (conduct / actions/practices) aspects is intertwined with the scientificity (science) of professional doing. It is emphasized that this knowledge, when used, in a planned and systematized way, makes it possible to observe and feel this real client and to look at that person in their relationships, in their work environment, in their interactions, thus improving the quality of the assistance provided.^{3,15, 17-18}

CONCLUSIONS

The nurses' conceptions ranged from a reductionist view to the machine, to a systematic process that involves

the interrelationships between human beings and between them and the environment in which they are inserted.

From the reflection and critical positioning about their work context, the terms, technology of education and technology of care emerged. This process meets the need for nursing, which, over the years, has faced changes in the demands of health care. In view of this, nurses need to evolve and build their knowledge about these concepts, in order to apply them in / for decision-making, thus raising the quality of the results in their care.

The development of this research has implications for the practice of hospital nursing, the possibility for professionals to understand and identify that their products and processes produced to intervene in daily demands, can be conceived as technologies of care and education. This if the construction process followed a systematic script and based on scientific precepts. Validating nursing productions, becomes a viable and modern alternative to consolidate the discipline as a producer of knowledge applied to your clinical practice.

REFERENCES

1. Waldow VR. Cuidado colaborativo em instituições de saúde: a enfermeira como integradora. *Texto Contexto Enferm.* 2014;23(4):145-52. Acesso em: 10 dez. 2018. Disponível em: http://www.scielo.br/pdf/tce/v23n4/pt_0104-0707-tce-23-04-01145.pdf.
2. Salbego C, Nietzsche EA, Teixeira E, Girardon-Perlini NMO, Wild CF, Ilha S. Care-educational technologies: an emerging concept of the praxis of nurses in a hospital context. *Rev Bras Enferm.* 2018;71(Suppl 6):2666-74. Acesso em: 10 dez. 2018. Disponível em: http://www.scielo.br/pdf/reben/v71s6/pt_0034-7167-reben-71-s6-2666.pdf.
3. Whelton BJB. Being human in a global age of technology. *Nursing Philosophy.* 2016;17:28-35. Acesso em: 02 nov. 2018. Disponível em: <https://onlinelibrary.wiley.com/doi/abs/10.1111/nup.12109>
4. Waldow VR. Cuidado humano: La vulnerabilidad del ser enfermo y su dimensión de trascendencia. *Index de Enfermería.* 2014;23(4):234-238. Acesso em: 11 dez. 2018. Disponível em: <http://www.index-f.com/index-enfermeria/v23n4/9478.php>.
5. Vázquez AS. *Filosofia da práxis.* 2th ed. São Paulo (SP): Expressão Popular. 2011.
6. Bardin L. *Análise de conteúdo: edição revista e ampliada.* São Paulo: Edições 70, 2016.
7. Dantas CN, Santos VEP, Tourinho FSV. A consulta de enfermagem como tecnologia do cuidado à luz dos pensamentos de Bacon e Galimberti. *Texto Contexto Enferm.* 2016;25(1):e2800014. Acesso em: 20 mar. 2019. Disponível em: <http://www.scielo.br/pdf/tce/v25n1/0104-0707-tce-25-01-2800014.pdf>.
8. Vêscovi SJ, Primo CC, Sant' Anna HC, Bringuete ME, Rohr RV, Prado TN, et al. Aplicativo móvel para avaliação dos pés de pessoas com diabetes mellitus. *Acta Paul Enferm.* 2017;30(6):607-13. Acesso em: 20 mar. 2019. Disponível em: <http://www.scielo.br/pdf/ape/v30n6/0103-2100-ape-30-06-0607.pdf>.
9. Santos TS; Brito TA; Filho FSY; Guimarães LA; Souto CS; Souza SJN; et al. Desenvolvimento de aplicativo para dispositivos móveis voltado para identificação do fenótipo de fragilidade em idosos. *Rev Bras Geriatr Gerontol.* Rio de Janeiro, 2017; 20(1): 70-76. Acesso em: 20 ago. 2019. Disponível em: http://www.scielo.br/pdf/rbgg/v21n4/pt_1809-9823-rbgg-21-04-00408.pdf.
10. Landeiro MJL, Freire RMA, Martins MM, Martins TV, Peres HHC. Tecnologia educacional na gestão de cuidados: perfil tecnológico de enfermeiros de hospitais portugueses. *Rev Esc Enferm USP.* 2015; 49(Esp2):150-155. Acesso em: 20 ago. 2019. Disponível em: <http://www.scielo.br/pdf/reeusp/v49nsp2/1980-220X-reeusp-49-spe2-0150.pdf>.

11. Nietzsche EA, Backes VMS, Colomé CLM, Ceratti RN, Ferraz F. Tecnologias educacionais, assistenciais e gerenciais: uma reflexão a partir da concepção dos docentes de enfermagem. *Rev Latino-Am Enfermagem*. 2005;13(3):344-53. Acesso em: 10 mai. 2018. Disponível em: <http://www.scielo.br/pdf/rlae/v13n3/v13n3a09.pdf>.
12. Babu A, Madhavan K, Singhal M, Sagar S, Ranjan P. Pressure ulcer surveillance in neurotrauma patients at a level one trauma centre in India. *Oman Med J*. 2015;30(6):441-6. Acesso em: 10 jul. 2018. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4678450/>.
13. Nietzsche EA. Tecnologia emancipatória: possibilidade ou impossibilidade para a práxis em enfermagem? Editora Unijuí. 2000.
14. Nietzsche AE, Lima MGR, Rodrigues MGS, Teixeira JA, Oliveira BNB, Motta CA, et al. Tecnologias inovadoras do cuidado em enfermagem. *Rev Enferm UFSM*. 2012;2(1):182-189. Acesso em: 10 mai. 2018. Disponível em: <https://periodicos.ufsm.br/reufsm/article/view/3591/3144>.
15. Lima ACMACC, Bezerra KC, Sousa DMN, Vasconcelos CTM, Coutinho JFV, Oriá MOB. Tecnologias e práticas educativas para prevenção da transmissão vertical do HIV. *Rev Bras Enferm*. 2018;71(suppl 4):1862-71. Acesso em: 20 ago. 2019. Disponível em: http://www.scielo.br/pdf/reben/v71s4/pt_0034-7167-reben-71-s4-1759.pdf.
16. Bousso RS, Poles K, Cruz DALM. Conceitos e Teorias na Enfermagem. *Rev. Esc Enferm. USP*. 2014;48(1):144-8. Acesso em: 10 mai. 2018. Disponível em: http://www.scielo.br/pdf/reeusp/v48n1/pt_0080-6234-reeusp-48-01-141.pdf.
17. Zoffmann V, Kirkevold M. Realizing empowerment in difficult diabetes care: a guided selfdetermination intervention. *Qual Health Res*. 2012;22(1):103-18. Acesso em: 10 mai. 2018. Disponível em: <http://journals.sagepub.com/doi/pdf/10.1177/1049732311420735>.

Received on: 13/04/2019
Required Reviews: 23/08/2019
Approved on: 30/08/2019
Published on: 09/03/2021

***Corresponding Author:**

Cléton Salbego
Rua/Av. João Luiz Pozzobon, nº 1490
KM Três, Santa Maria, Rio Grande do Sul, Brasil
E-mail: cletonsalbego@hotmail.com
Telephone: +55 (55) 9 9922-1825
CEP: 97.095-465

The authors claim to have no conflict of interest.