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CONSTRUCTION OF AN EDUCATIONAL BOOKLET ABOUT PERIPHERAL VENIPUNCTURE

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ABSTRACT

The purpose of this study was to construct an educational booklet to help nursing students about peripheral venipuncture. This is a methodological research, developed from March to May 2017. The booklet, entitled "Peripheral Venipuncture. Learn More!", was organized with easy-to-understand information comprised by 23 informative and illustrated pages. The information included in the booklet intends to clarify doubts regarding the Peripheral Venipuncture procedure (PVP), from the preparation of the material used to the procedure itself. Considering this perspective, the study is of great importance to improve the understanding of nurses' capacity to act and develop educational strategies. Addressing PVP with college students will favor the empowerment capacity to perform the procedure.

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INTRODUCTION

The changes observed in university education pass through learning and teaching ways, so that teaching methods adopted in graduate courses have an immense diversity of strategies (Armindo et al., 2011).

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Given the changes that are occurring, the student must realize that science and technology should be together, and, in this sense, the adherence of educational technologies by universities stands out, since it already occurs in the international scope with greater fluidity (Frota et al., 2014). The Nursing curriculum has the content of intravenous therapy, which involves performing the Peripheral Venipuncture technique (PVP) (Frota et al., 2015).

Peripheral venipuncture is considered one of the greatest advances in the health area, becoming a routine procedure carried out by nursing staff, for infusion of fluids, medications, blood, its components and derivatives, directly into venous mesh, through a peripheral venous catheter, providing immediate effect (Friedrich *et al.*, 2010). However, despite technological advances in the nursing area, some procedures, such as the Peripheral Venipuncture (PVP), cause anxiety and insecurity to students, which alert to the need of creating new teaching strategies that allow students to exercise their activities successfully and safely, since PVP is a routine procedure in the nursing staff's practical activities (Frota *et al.*, 2014). Professionals shall receive scientific and technical training for implementing this procedure, enabling safe and efficient access (Galvão and Püschel, 2012). Implementing intravenous therapy through the peripheral vascular access is a routine action of a health institution and, when well executed, relates to clinical improvement (Gleason *et al.*, 2011).

Thus, this procedure requires professionals' scientific training, due to the high level of technical complexity, which requires knowledge, competence and psychomotor skills. Untrained professionals may lead to failures in this process, which, in turn, can generate various diseases related to client recovery conditions (Gleason *et al.*, 2011). Therefore, professors from health area, especially nursing, are responsible for providing different types of teaching so that the student can meet and choose different educational tools, as well as identify the various ways to improve the teaching-learning process (Leonello and Oliveira, 2014). Thus, using a booklet is an important educational tool for working the teaching content interactively and in a contextualized way. In this case, the nurse can act focusing on health promotion, on the use of educational technologies that seek students' empowerment, based on clarification and support so that they assume greater control over the knowledge and technique of peripheral venipuncture.

The use of educational materials facilitates understanding and makes the appropriate knowledge accessible to the intended population. The development of this work focuses on the student's training, in order to facilitate and assist nursing practice, collaborating with the teaching-learning process and providing opportunities for future nurses to be able to seek and use new knowledge for developing professional practice. The professor should use tools that go beyond simply passing knowledge on, arousing a critical conscience in the student, which will possibly help build a new nursing, as well as insert students in the center of the educational process.

Given these considerations, this study becomes relevant, with the following guiding question: will the construction of an educational booklet for nursing students about peripheral puncture promote learning? The interest in preparing this work resulted from the researchers' approach to the theme, and from the identification, during activities of curricular internship, of the importance of building an educational material that promotes the students' learning in relation to peripheral venipuncture through educational technologies. Students' difficulty concerning the venipuncture is one of the main problems faced during the practice, for being the first invasive contact with the patient, representing a great challenge. The present study aimed to build an educational booklet to assist nursing students about peripheral venipuncture.

METHODS

This is a methodological research, focusing on the development, evaluation and improvement of an instrument or a strategy that can enhance a methodology (Polit and Beck, 2011). For this study, the developed instrument will be an educational booklet about Peripheral Venipuncture. To ensure and/or enable the creation of a quality artifact based on pedagogical principles, a specific methodology shall be followed, as well as ergonomic standards shall be observed. Among the various methodologies for preparing educational materials, this study used Echer's methodology (Echer, 2005), which clarifies the steps of the process of constructing teaching materials for health care. Several studies related to the construction of educational materials followed these assumptions (Barros, 2015; Costa *et al.*, 2013). For this study, we used the following steps: bibliographic survey and preparation of educational materials.

Data collection used databases tools: Scientific Electronic Library Online (SciELO); Medline (Medical Literature Analysis and Retrieval System online); Science Direct; and Lilacs (Latin American and Caribbean Literature in Health Sciences). The search in these databases aims at widening the scope of the research and minimizing possible biases. The used descriptors were: nursing, educational technologies, peripheral catheterization. Inclusion criteria were complete articles, in English, Spanish and Portuguese, published in the period from 2010 to 2017 and related to the subject. Exclusion criteria were researches related to reviews, dissertations, theses, even those addressing the study theme. The construction of the booklet occurred in the period from March to May 2017, divided as follows: development of the printed educational technology, content, and language, illustration and layout. The built booklet has a proper name, attractive and interactive for students. Corel Draw Essentials was used to draw the avatar, and Adobe Photoshop, to color it, in addition to pictures made by the researchers. As the booklet acquired shape and structure, the researchers carried out the necessary modifications. The layout and configuration occurred through the Adobe Indesign program. The booklet construction followed the assumptions that describe the aspects of language, illustration and layout so that they are legible, understandable, effective and relevant (Moreira, Nóbrega and Silva, 2003).

RESULTS

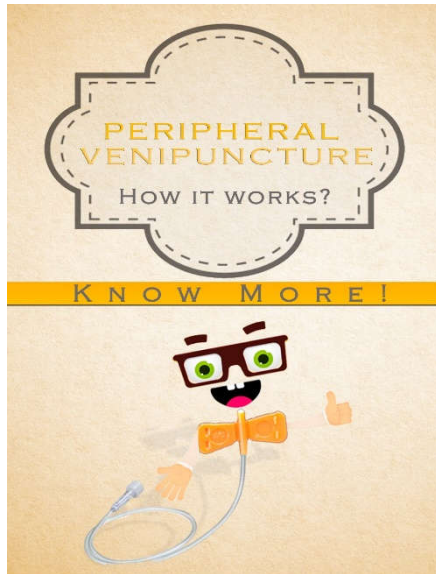
The booklet, entitled "Peripheral Venipuncture. Learn More!", was organized with easy-to-understand information comprised by 23 informative and illustrated pages. The information included in the booklet intends to clarify doubts concerning the Peripheral Venipuncture procedure (PVP), from the preparation of the used material to the procedure itself. A tool to strengthen knowledge was used, named "Scalpelito". This avatar is a dynamic tool in order to provide a dynamic communication with the target audience. After presenting the booklet, students have access to the rest of the information, organized through six topics: 1. What is Peripheral Venipuncture? (PVP); 2. Materials used for PVP; 3. Venous mesh and main access locations; 4. PVP procedure; 5. Post-procedure care; 6. Nursing registration. Regarding the examination itself, figure 3 shows the initial presentation of the venipuncture procedure, to show, then, the remaining steps.

Table 1. Description of the contents by the booklet's topics. Fortaleza, CE, 2017

Domains	Contents description
What is Peripheral Venipuncture? (PVP)	Addressed the main theme, describing the concept of Peripheral Venipuncture.
Materials used for PVP	Regarding the material used in the puncture, it aimed to inform basic materials for performing the access, in addition to illustrating each one.
Venous mesh and main access locations	It explains the venous mesh and the main sites used for access.
PVP procedure	Describes the procedure itself, from material preparation to finalization.
Post-procedure care	Describes the post-procedure care.
Nursing registration	Describes what is important to register, since the noted information shall be consistent, objective, clear, real and complete.

This booklet used an idea at a time, showing the steps in a logical scheme, covering only the information necessary for the reader's perception, by means of short texts, containing a few technical terms and avoiding jargon.

illustrations are able to explain better than reading for many people. Technical and scientific terms, abbreviations and acronyms are avoided, but when necessary, they are properly explained. The booklet uses short words and sentences, with each theme fully developed to address the next topic.



*Adapted from Frota et al. 2013.

Figure 1. Shows the booklet's cover



Figure 2 – Image of the Educational Object: “Scalpelito”. Fortaleza, Ceará, 2017

The booklet also used a style that facilitates reading and understanding. Simple and self-explanatory pictures were selected to facilitate the understanding and interest of the reader, as well as colors and attractive texts, which allows the best capture of the message by the illustration, since



Figure 3 – Peripheral Venipuncture procedure. Fortaleza, Ceará, 2017.

Illustrations were used to help explain and/or emphasize points and important ideas of the text, in order to avoid abstract and only decorative illustrations. The illustrations were appropriate to the target public, without juvenile aspect, with good quality and high definition. The illustrations were arranged for the reader's comprehension, as well as next to the texts to which they refer. The booklet's layout used Arial 12, because the material focuses on students, being titles' letter ten points bigger than the text. It did not use stylized fonts, for they are difficult to read. Colors were used with sensitivity and caution not to color too much, provoking a visual pollution, being the black print on light background easier to read. For printing, matte paper and ink were used because they reduce glare and improve readability. The cover contains attractive images, colors and texts, presenting the main message and target audience, allowing the reader to capture the main message only by seeing it. The key words or ideas are complete per page, avoiding breaking the message for the next page.

DISCUSSION

The nurse, when part of the health team, carries out various functions, covering various levels of care and health care, besides being supervised by other members of the team. Analyzing this perspective, the importance of professional skills during academic stage, being one of the professionals responsible for the procedure developed by the team, including, in this context, the peripheral venipuncture, which, according to experts, is a seemingly simple activity, but, if not carried out properly, can result in risks to the patient (Armando, Diniz and Schall, 2011). The activities developed by nurses express actions directed to care, humanized assistance to the subject, requiring the use of methodologies, based on technical and scientific knowledge, to obtain good results (Dodt, Ximenes e Oriá, 2012). The nursing professional needs to have technical skills, among other abilities, in addition to constantly seeking new knowledge (Freitas and Rezende Filho, 2011).

Therefore, in order to play his/her role well, beyond education, this professional must seek resources for a continuous learning. For that, several features are currently available so that these professionals can interact and improve their skills, such as educational technologies. In this context, technological educational resources stand out, which present cultural and thinking changes, modifying the daily action in the classroom, because the new generation has the ability to develop and render more information than previous generations, albeit differently, but that focuses on a wide variety of information stimuli. Given this reality, the use of booklets stands out, which aims to complement academic training, enabling an approximation of this student with the reality, thus contributing to the expansion of knowledge, in addition to providing knowledge to overcome his/her insecurities. One example is the development of a hypermedia for nursing students available in the UFC, which has complemented students' theoretical content (Frota *et al.*, 2015). To complement the teaching methodology and expand the knowledge of nursing students, the proposal of this study was an educational booklet that can be used as a pedagogical tool in order to increase both the quality as the effectiveness of teaching. This feature is actually a way to view the new teaching associated with the teaching-learning reality, as well as a way to overcome problems identified in the educational system, that is, to point out ways to answer educational problems (Grippio and Fracolli, 2014). The content, the structure, as well as the internal organization applied in each area of knowledge, as well as its particular logic, presents itself as one of the ways to structure the didactic method, which, however, is not unique.

Thus, while creating an educational booklet, a participatory, communicative and collective approach should be adopted, since its viability suggests putting new shares and behaviors into practice (Freitas and Rezende Filho, 2011). Preparing a booklet requires an easy-to-understand language, in order to contribute to nursing teaching learning and practice. Therefore, the booklet is seen as an educational material aimed at health promotion, focusing on passing on information clearly and objectively and on allowing its readers to absorb its knowledge, thus allowing these professionals to develop attitudes for the patient's better recovery and quality of life (Armando, Diniz and Schall, 2011). Thus, the educational booklet shall be conceived, written and produced based on the

level and style of the target audience, so that they can feel free to learn and, at the same time, able to take responsibility of care and assistance for health promotion (Dodt, Ximenes and Oriá, 2012). Since it is a health-oriented material, other health professionals shall evaluate and validate its text, since the ability to read is not enough to ensure the actual transmission and understanding of the information. Clarity, quality and complexity of the information presented in the material are equally important to create the booklet. Easy reading comprehension of the content ensures the legitimacy of a text. Therefore, tests can be applied to evaluate the content (Freitas and Rezende Filho, 2011).

Another point is the fact that, even a literate person can have difficulties understanding it, for being a health-oriented material, related to skills, techniques and abilities of this area (Grippio and Fracolli, 2014). The use of some type of resource to complement classroom learning should not be perceived only as a novelty; it should be seen as a tool that has emerged in order to provide professors and students the possibility to deepen the critical, constructive thinking, in addition to being able to build their own knowledge. In this context, an educational booklet about PVP offers the chance to understand routine actions, because, although it is a daily practice of the nurse, the technique should be well conducted, otherwise it may result in serious harm to patients. The educational booklet about PVP uses a simple methodology, but, at the same time, clear and objective and it is a tool that can be used in any environment. Thus, constructing knowledge results in significant learning, where students begin to build their own identity, designing their life plan, thus becoming citizens that are able to perform and produce their own concepts.

The educational booklet can be used as an innovative tool, in which students are primarily responsible for constructing their own knowledge.

Final Thoughts

The construction of the booklet aims to expand and assist academic knowledge by applying the educational material. The use of educational technologies becomes attractive, as it provides a dynamic and different learning. Nursing acts in assistance and education, standing out as a profession of important proximity with the patient and also responsible for disseminating knowledge, making the future professional's good preparation relevant regarding graduation, in order to contribute to the development of skills, from educational objects directed to a skilled nursing care. Therefore, the booklet can be used as a tool for health education with future nurses, because PVP is a team responsibility, requiring professionals' basic and scientific knowledge on the theme. Considering this perspective, the study is of great importance to improve the understanding of nurses' capacity to act and develop educational strategies. Addressing PVP with college students will favor the empowerment capacity to perform the procedure. A limitation of this study was not validating the booklet with experts in nursing and informatics. The intention is to validate it posteriorly in order to make it available for nursing students to perform necessary adjustments and updates through scientific and technological advancement.

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