Development and validation of software for teaching nursing diagnoses applied to preterm newborns

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Introduction: In Brazil, many graduate programs are using educational software, and since half of the 80’s, has introduced the use of this technology as a strategy for teaching in undergraduate nursing courses, and disciplines of information technology in health. In an attempt to ensure a more efficient learning, education has gone through constant reforms, improving technologies, a relationship gradually motivating educational and interactive. Education, currently, must go along with the computerization, as are many resources available for this technology.

Objective: This study, part of an ongoing doctoral dissertation, aims to develop an educational software about clinical reasoning to work out nursing diagnoses (ND) of preterm newborns and to validate the content and appearance of this software with experts from informatics, audiovisual and nursing areas.

Methodology: Non-controlled experimental study. The system is developed with authoring software Macromedia Authorware Professional 7.0, allowing the creation of applications in the Windows environment and migration of content to the format web. The multimedia system is composed of full use of interactivity, sensitive to context, media in mp3 format, jpg andmpeg. To use the interactive
The user must have a PC with DVD-R drive, Microsoft Windows operating system, compatible processor with Pentium IV 3.0 Ghz, 512 Mb of RAM and hard disk with 50 MB of available space. The use of computer-assisted education was chosen to develop software aiming to support the teaching-learning process of nurses’ training and permanent education on nursing diagnoses. Bernardo’s software development methodology was used for the software’s development, divided in four stages: survey of medical records of preterm newborns hospitalized at a neonatal intermediate care unit (NICU) for defining most frequent ND; content validation of the clinical cases to be included in the software; production of the education software; validation of software’s appearance by experts in informatics, audiovisual and nursing. In the first stage, review of 122 medical records of premature newborns assisted at the NICU during 2007 was done. Data were registered on a form with newborns’ identification data and a list of ND according to a guide used at the NICU. All diagnoses presented by newborns during hospitalization period were registered. From these results, most frequent diagnoses were selected to be included in the software that will be developed in the next stage. We found these diagnoses: sleep disorder (82,8%); risk of infection (77,0%); altered family processes (75,4%); risk of impaired skin integrity (63,1%); acute pain (61,5%). Currently the validation of clinical reasoning to work out nursing diagnoses to be included in the software is being carried out. Validation is being done by 15 neonatal nursing and/or nursing diagnoses experts. In the third stage the software will be constructed, We are building the first module of the software which presents presentation, justification and objectives and the theoretical content on the nursing process, nursing diagnosis, North American Nursing Diagnosis Association and type of diagnostic Risner. The software is structured to allow the student to access any content without having to study the previous contents and return as often as you feel necessary for their learning. It will be built in Internet environment as we believe it is a communication mean that allows group and people worldwide information exchange. Interactive resources will be used, and it will present links, pictures, references and technical information. Software validation will be done regarding its appearance by three informatics experts, three audiovisual technicians and twelve nurses (professors and care nurses). At the end of all items and topics/subjects evaluated there will be space for comments and suggestions. The instruments will also include the summative method, known as Likert-type Scale. The development of this didactic instrument will allow for an innovative teaching about ND applied to preterm newborns in neonatal units, using informatics resources and active methodologies that favour the teaching-learning process and individualize learning. After the validation of the software it will be possible to provide teaching and care institutions, through CD-ROM or Internet, an instrument with interactive multimedia resources and simulations with easy interaction between users and system, thus increasing access to a high number of information (texts, graphs, sounds and images) that favour ND learning.
Keywords: Computer-Assisted Education, Internet, Nursing diagnosis

References


