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Nursing professionals' barriers for the use of educational technologies: an integrative literature review

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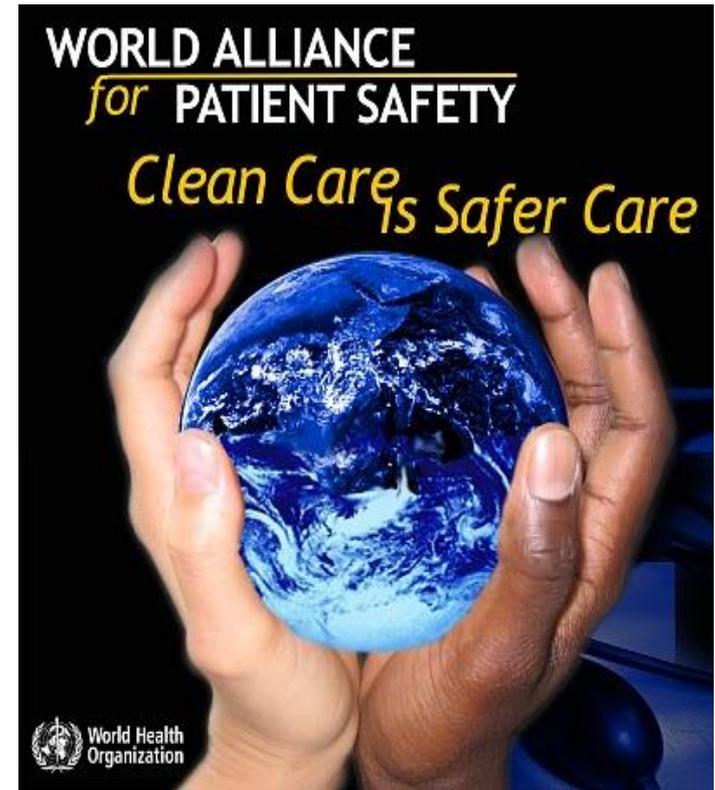
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The use of educational technology in health directed to nursing workers is important and necessary not only to update knowledge and provide continuing education, but also to provide safe and quality care, as well as to encourage communication between professionals and patients.



- Nursing workers benefit in their learning processes from the use of educational technologies.
- The hand-held mobile technology emerged as an effective clinical tool.
- However, professionals face many obstacles in the use of these technologies which hinders their adherence to it within their work routine.



OBJECTIVES



To identify in the literature those barriers that hinder the access of nursing workers to educational technologies.

METHOD:

- ✓ Integrative literature review.
- ✓ Databases searched: Web of Science, Bireme (Medline and Lilacs) and Scopus.
- ✓ Descriptors used: barriers, educational technology and nursing professionals.



METHOD:

❖ Inclusion criteria were:

✓ Full-text papers published between 2001 and 2011 in English, Portuguese or Spanish



RESULTS

35 papers were found
 23 did not meet the inclusion criteria
 12 papers were evaluated

IF	0,761 a	1,785	(66,7%)
		3,008	(8,3%)
			(25%)

2011 (16,7%)

91,6% ----- Level of evidence = 4

Table 1. Content of papers concerning objectives, results and conclusions. Ribeirão Preto, SP, Brazil, 2011.

PUBLICATIONS/IF/METHOD	STUDY'S OBJECTIVE	RESULTS	CONCLUSION/LEVEL OF EVIDENCE
<p><i>LIN, J.S.; LIN, K.C; JIANG, W.W; LEE, T.T.</i> Journal of Nursing Research, 2007. FI: 1.785 Descriptive-exploratory, cross-sectional.</p>	<p>To investigate the relationship between nurses' computer skills and their satisfaction with the educational network, and explore related factors.</p>	<p>The nurses who attended computer training more than 4 hours/week and those who had their own computer became more satisfied with the online education program than those who attended less than 3 hours of training per week. The barriers described by the authors concerning the use of technology included: lack of knowledge and ability to use computers, to operate different kinds of software, and to search for data on the internet.</p>	<p>Health facilities should improve their computer infrastructure and encourage nurses to become interested in the subject for them to learn and apply such skills in clinical practice. Level of evidence = 4</p>
<p><i>KING, G.; RICHARDS, H; GODDEN D.</i> Journal of Telemedicine and Telecare, 2007 FI: 1.274 Qualitative study.</p>	<p>To examine the attitude of primary health care workers toward the use of telemedicine.</p>	<p>Many barriers impeding the adoption of telemedicine were identified. One of them is related to the fact that videoconferences may reduce the quality of communication in educational and clinical contexts. There are factors that hinder telemedicine from being implemented in the organizational routine of health facilities.</p>	<p>There is a need for technical support and appropriate training to be provided to professionals for them to implement telemedicine in their practice. Level of evidence = 4</p>

PUBLICATIONS/IF/METHOD	STUDY'S OBJECTIVE	RESULTS	CONCLUSION/LEVEL OF EVIDENCE
<p><i>ANDERSON, A.S.; KLEMM, P.</i> Clinical Journal of Oncology Nursing, 2007. FI: 1.208 Reflective study.</p>	<p>To reflect on whether nurses who care for cancer patients are prepared to help them to find, evaluate, and use self-care information available on the internet.</p>	<p>A lack of nurse training in teaching cancer patients to use the content available on the internet, a limitation of time, and inappropriate administrative support were barriers reported by the authors.</p>	<p>Nurses should understand how the internet has influenced the way patients learn how to deal with their diseases and should be responsible for supporting them in choosing appropriate content from the internet so they can safely use such content.</p> <p>Nurses are the best-suited professionals to guide and educate patients in supporting the use of online resources. For that, professionals are required to have previous computer knowledge to enable an integration of online resources into the services provided to patients.</p> <p>Level of evidence = 5</p>

PUBLICATIONS/IF/METHOD	STUDY'S OBJECTIVE	RESULTS	CONCLUSION/LEVEL OF EVIDENCE
<p><i>TURCATO, N.; ROBERSON, C.; COVERT, K.</i> AANA JOURNAL, 2008. FI: 3.008 Reflective.</p>	<p>To present an overview of the current state-of-the-art simulation-based training.</p>	<p>Simulation-based training can help educators and professionals to overcome the challenges faced in the training of nurse anesthetists. Simulations permit replicating not only the interaction among the patient's physiology, anesthetics and equipment but with the clinical and dynamic environment in which professionals will eventually work.</p> <p>The creation of and collaboration in partnerships can help overcome barriers to the use of simulation-based education.</p>	<p>Simulations offer professionals a unique and important learning experience. This valuable tool should be applied in the teaching of nursing students and specialized professionals.</p> <p>Level of evidence = 5</p>

PUBLICATIONS/IF/METH OD	STUDY'S OBJECTIVE	RESULTS	CONCLUSION/LEVEL OF EVIDENCE
<p><i>Miller, L.C.; Devaney, S.D.; Kelly, G.L.; Kuehn, A.F.</i> Journal of Continuing Educational Nursing, 2008. FI:1.039 Descriptive.</p>	<p>To develop the “Long distance” learning project to teach public health.</p>	<p>Nursing students and professionals used an online program called “E-mentoring” to learn about public health issues. For more than three years, 38 students participated in the project and reported they valued the experience and the guidance provided by the professionals. Professionals in turn gained confidence in their teaching practices and skills. Some of the barriers reported were: a lack of involvement of some professionals, of feedback, and the physical distance.</p>	<p>“E-mentoring” is a viable strategy to connect nurses to a learning environment, overcoming the obstacles of distance, isolation and work schedules.</p> <p>Level of evidence = 4</p>

PUBLICATIONS/IF/METHOD	STUDY'S OBJECTIVE	RESULTS	CONCLUSION/LEVEL OF EVIDENCE
<p><i>BERGQUIST-BERINGER, S.; DAVIDSON, J.; AGOSTO, C.; LINDE, N.K.; ABEL, M.; SPURLING, K.; DUNTON, N.; CHRISTOPHER, A.</i></p> <p>The Journal Continuing Educational in Nursing, 2009.</p> <p>IF: not found.</p> <p>Descriptive.</p>	<p>To describe the evaluation of a training program developed by NDNQI (National Data Base Of Nursing Quality Indicators) addressing pressure ulcers.</p>	<p>The program was developed with online modules and a CD to teach nurses to identify the stages of pressure ulcers, discriminate ulcers acquired at the hospital from those in the community, and collect data concerning the subject.</p> <p>The identified barriers were: technological problems, lack of content clarity and in the conception of the program, which led to the training program being reviewed.</p>	<p>The NDNQI program was developed to improve the precision and reliability of nursing in identifying pressure ulcers.</p> <p>The final evaluation indicated that the program is efficient in teaching nurses on the subject.</p> <p>Level of evidence = 4</p>

PUBLICATIONS/IF/METHOD	STUDY'S OBJECTIVE	RESULTS	CONCLUSION/LEVEL OF EVIDENCE
<p><i>JARVIS-SELINGER, S.; BATES, J.; ARAKI, Y.; LEAR, S.A.</i> International Journal of Telemedicine and Applications, 2011. IF: not found. Descriptive Qualitative.</p>	<p>To describe how the use of an internet platform can favor collaboration between professionals and patients and improve behavioral changes in patients.</p>	<p>The use of telehealth overcomes geographic barriers and can improve the access of professionals during care provided to patients through the exchange of health-related information with effective communication among health services. However, a lack of experience with internet-based platforms is a significant barrier to the development of useful and innovative platforms.</p>	<p>The development and implementation of programs for the internet are important in order to shorten distances and create ties of trust between professionals and patients. There is a limited view concerning the potential of technology to change service delivery, especially for patients living in rural areas. Level of evidence = 4</p>
<p><i>GUISEI, V.; CHAMBERS, M.; VÄLIMÄK, V.</i> Journal of Psychiatric and Mental Health Nursing, 2011. FI: 1.025 Descriptive.</p>	<p>To discuss the use of simulations in nursing education, including potential benefits and obstacles to their use.</p>	<p>The study reports an example of the implementation of simulations in psychiatric nursing and mental health education. A lack of a broader theoretical framework to support and guide the use of simulations was a barrier identified by the authors, as well as a lack of tools to develop and/or maintain a simulation scenario, which hinders its use on a large scale, as does a preference for traditional teaching methods.</p>	<p>The continuous development, implementation and evaluation of virtual simulations of patients through a diversity of care actions could be an educational tool.</p>

Reasons that constitute barriers to nurse's adherence to educational technologies:

- ✓ Lack of knowledge
- ✓ Time
- ✓ Skills
- ✓ Technical support
- ✓ Training for using computers

CONCLUSION

We conclude that further studies focusing on this subject are very important since there is a need for professionals to overcome such barriers because the use of educational technologies enables improvements that reflect on the quality of care provided to patients.

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