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Evaluation of Competency-Based Online Learning Modules for Nurses in Emergency Planning and Response

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Abstract and objective

Several grants have been received to develop an online curriculum for nurses in emergency preparedness using the competencies developed by the International Nursing Coalition for Mass Casualty Education (INCMCE). Another unique aspect of the development of these modules is that they reflect the "How People Learn Cycle" (HPL). This presentation will provide data to determine the effectiveness of learning programs designed to educate nurses volunteering for service in the US.

Educational informatics provides a model for learning that is based on resources that augment what the learner already knows. Using this more customized approach, learners can then integrate new knowledge within the context of their practice. The long term objective of this study is to provide quality educational materials for volunteer nurses.

Content validity was determined and design principles upheld for HPL. 953 learners were drawn from 33 Medical Reserve Units and from six states hosting volunteer nursing Registries. Data were collected after the third module was completed in the online series. Paired t-tests of pre-course and post-course total confidence scale scores indicated a significant increase in mean ratings, with the first 10 items being significant (p < .05). Overall mean scores for technology integration demonstrated a positive experience using the online approach.

Keywords:

disaster response, emergency preparedness

Introduction

A survey of US nursing schools validated the fact that the curriculum was lacking in content related to emergency planning and response [1]. In addition, faculty were not prepared to teach this content One of the highest rated requests was for the development of an online curriculum that would meet the competencies as developed by the INCMCE. Beginning development efforts were the result of a think tank of nursing experts in emergency planning and response.

Methods

The modules were developed in conjunction with the multimedia developers from Little Planet Learning, Inc. based in Nashville, TN. Data were not collected until the third case (which was a biological case) was completed. 953 learners were drawn from 33 Medical Reserve units and from six states hosting volunteer nursing registries. The study was a pre and post-test design allowing for data collection in the areas of self-rated confidence of skills (based on defined competencies) and assessment of technology use in delivery of the content (assessed via use of the Flashlight evaluation tool). Demographic data from the users was also collected. During module development, content validity was determined along with an assessment by experts that the design had upheld the principles of "How People Learn" (HPL).

Results

Paired t-tests of pre-course and post-course total confidence scale scores indicated a significant increase in mean ratings ($p < .01$). The first ten items indicated a significant increase in confidence scores ($p < .01$), with the remaining items showing no or limited increases. Given that the total set of modules were not completed by the subjects, these findings are not surprising. The first 10 items are basic competencies, while the remaining 6 are considered more intermediate level skills that require additional content in order to be met After the learning experience, subjects completed a survey that was designed from items using the Flashlight Evaluation Tool comparing this online experience with other non-online experiences. Ratings were based on a five point Likert scale from 1-5 with 5 responses being considered positive. Overall mean scores for the 10 item questionnaire were 4.2, falling between agree and strongly agree.

References

[1] Weiner E, Irwin M, Trangenstein P, and Gordon, J. Emergency preparedness curriculum in US nursing schools. Nsg Ed Perspectives 2005: 26(6), 334-339.