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Computer assisted Learning to understand hemodynamics in congenital heart defect

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Background:

Computer assisted learning has shown to be an approved and cost effective strategy to improve knowledge and skills in various nursing objectives. So far, no studies have published results regarding e-learning as a tool to understand congenital heart defect and well-judged nursing decisions.

We developed an e-learning course with six modules regarding; normal circulation, transition from fetal circulation, hemodynamics in congenital heart defect and nursing actions. We tested whether students and nurses could learn and understand the theory of hemodynamics and nursing, related to congenital heart defect, when taught using computer-assisted learning and compared with conventional teaching in a classroom.

Method:

A group of 30 nurses and neonatal nurse specialist students was random distributed into two groups. The intervention group used the interactive, self-directed computer-assisted learning modules. An experienced lecturer in an auditorium taught the control group. Both groups received the same content and illustrations within the framework of the modules. All participants answered a knowledge test in advance of their lecture. Straight after the lecture, all participants answered a questionnaire about their perception of the learning method they participated in. After one week a second knowledge test was completed.

Results:

Preliminary results shows that knowledge scores increased significantly from baseline in both groups and no significant differences were detected between the scores of the two groups. There was a significant difference in former experience with caring for infants with congenital heart disease and this reflected slightly higher knowledge in the e-learning group in both pre and post-tests. The e-learning group used significantly less time to study than the lecture group. The participants in the lecture group perceived the lecture method to be significant more positive than the e-learning group.

Conclusion:

The six modules of computer-assisted learning was an effective strategy for teaching both theory of hemodynamics and nursing to infants with congenital heart defects. Further analyzes may reveal complementary results of interests but are not yet completed.