

Evaluation of an evidence-based education model for students and nurses in a neonatal unit caring for children with congenital heart disease

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Object of the study

In Norway 550-600 children are born with congenital heart disease (CHD) each year. The purpose of this project was to evaluate a evidence-based education model for special educated intensive care students and nurses working in a neonatal intensive care unit (NICU). The model includes a Theoretical introduction (lectures, provide literature, self study) and Clinical implementation (clinical supervision, reflection with a supervisor, structured guidance). This model emphasizes nurses' knowledge, observations and assessments regarding newborn with CHD.

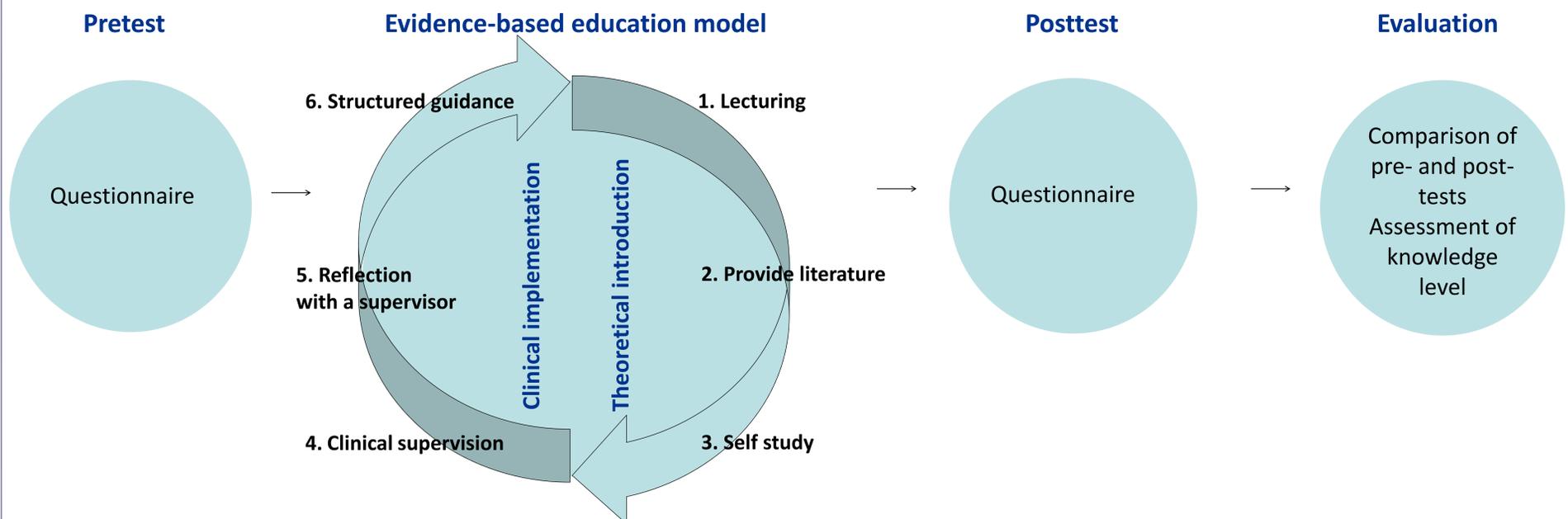
The research questions were:

1. Did the intensive care students and NICU nurses' perceived skills of assessing clinical observations of the child and the physiological factors (monitored physiological parameters, laboratory report) change after participation in an evidence-based educational programme?
2. What level of cognitive learning do the intensive care students and NICU-nurses evaluate their own performance of assessing clinical observations and physiological factors after the programme?



Method

An evaluation study, pre- and post-test design with the use of a questionnaire where the participants' self-reported their attention of skills related to 13 physiological and 11 clinical observations was used in assessments of nursing care to newborns with CHD. The response alternatives for all the items ranged from 1 (almost never) to 5 (almost always). One opened ended question asked the respondents what was the most satisfying component in the educational programme.



Results

The sample consisted of 19 intensive care students and 21 nurses working at the NICU. Our study showed positive changes in use of clinical observations and physiological factors after participating in educational programme. Both groups also reported more frequently observations of clinical observations as periphery circulation ($p=0.04$), fluid balance ($p=0.03$), urine production ($p=0.01$), digestive ($p=0.01$) in patients after participation in the educational programme. Regarding observations of the physiological factors, the participants reported that they more often used pre- and postductal oxygen saturation ($p=0.03$) and platelets ($p=0.04$). Furthermore, the post-test showed that the intensive care students reported higher learning outcomes than the NICU-nurses regarding the knowledge level using clinical observations (see Figure 1). Regarding the changed level of knowledge using physiological factors, the groups reported relatively similar outcomes (see Figure 2). The NICU-nurses and the intensive care students evaluated both the literature and structural guidance in clinic as especially useful for learning.

Conclusions

Intensive care students and NICU-nurses paid more attention to performing clinical observations and assessing physical factors after the programme than before. This model may be transferable to other groups of patients and different clinical setting.

Fig 1: Changes in level of knowledge in using clinical observations after education

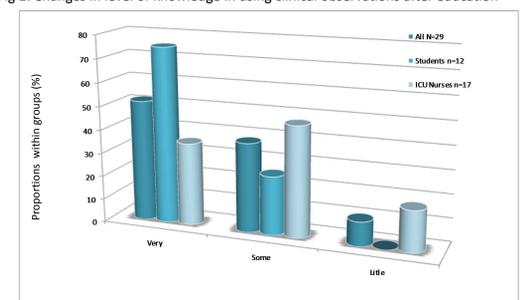


Fig 2: Changes in level of knowledge in using physiological factors after education

