

Management of fever and hyperthermia: impact of lecture-based interactive workshops on training of nurses

Fever and hyperthermia is a common encounter in hospitalized patients and can cause morbidity and mortality in critically ill patients (1–3). Fever and hyperthermia management is an integral aspect of nursing care. For its consistent rational management, nurses must have appropriate knowledge regarding this important subject (4–6). However, a number of studies have reported that their knowledge about the subject is insufficient (7–10). This study was undertaken to assess the effect of training given to the nurses on knowledge and practice in management of fever and hyperthermia.

We have performed a pre–post test quasi-experimental descriptive study in Medicana hospital in Ankara, Turkey, during September 2009. The study was conducted by a sample of convenience. Nurses working in different departments in the hospital participated in a teaching workshop organized as part of in-service training program. Participants attended an interactive lecture-based 3 h workshop on fever and hyperthermia. A multiple choice question (MCQ) test was completed by trainees before and after the interactive lecture. Participants' consent was obtained to use their answers for the purpose of this study. Statistical analysis was performed using the SPSS (SPSS for Windows, version 12.0). The Student paired *t*-test was used and the *p*-value of <0.001 is considered to be significant.

A total of 30 nurses participated in the workshop. There was a statistically significant improvement in test scores after the lecture (mean 6.5, SD 2.1, CI 5.6–9.3) when compared with pre-lecture scores (mean 14.2, SD 1.6, CI 13.5–14.8); paired sample test (two-tailed) *p* < 0.001. This study showed that nurses' knowledge on fever management is low in comparison with what Walsh et al. (7) reported on the pediatric nurses (mean 12.4, SD 2.18 on 20 items). However, a more didactic form of teaching with explanation of the underlying concepts is required to improve knowledge and application of best practice technique for the management of fever and hyperthermia, as indicated by the significant improvement in post-lecture test scores. These findings are similar to other studies (8–10).

Overall, nurses acknowledged the importance and relevance of the subject and felt that the workshop was

worthwhile. One of the limitations of this study was the less number of nurses in this study (30 nurses), although they represented 40% of the nurses invited to attend this session. This study tested immediate recall of knowledge and remains to be seen whether the knowledge gained as a result of the event will be retained by the nurses and whether their habit in fever and hyperthermia management will be altered as a result. It would be useful to examine nurses' knowledge base and application for the management of fever and hyperthermia habits sometime after such an event to determine the need for continued and repeated training in this important subject. In addition, the improvement in the MCQ score could be at least partially attributed to an 'order effect.' It is possible that improvement in post-lecture scores could have happened without the structured workshop, simply because the nurses had an opportunity to think about the questions again and give a more considered answer. This could have been avoided if participants subjected to the MCQ test were randomized to no intervention and to structured learning groups.

Keeping in mind the above-mentioned limitations, this study showed nurses' knowledge in relation to the management of fever and hyperthermia was poor and lecture-based workshop on knowledge and management of fever and hyperthermia helps improve their knowledge. However, whether this will change the nurses' practice remains to be seen.

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References

1. Badjatia N. Hyperthermia and fever control in brain injury. *Crit Care Med.* 2009; 37: S250–7.
 2. Wang CX, Stroink A, Casto JM, Kattner K. Hyperthermia exacerbates ischaemic brain injury. *Int J Stroke.* 2009; 4: 274–84.
 3. Walid MS, Woodall MN, Nutter JP, Ajjan M, Robinson JS. Causes and risk factors for postoperative fever in spine surgery patients. *South Med J.* 2009; 102: 283–6.
 4. Beard RM, Day MW. Fever and hyperthermia: learn to beat the heat. *Nursing* 2008; 38: 28–31.
 5. Sund-Levander M, Grodzinsky E. What is the evidence base for the assessment and evaluation of body temperature? *Nurs Times* 2010; 106: 10–3.
 6. Walsh AM, Edwards HE, Courtney MD, Wilson JE, Monaghan SJ. Fever management: paediatric nurses' knowledge, attitudes and influencing factors. *J Adv Nurs.* 2005; 49: 453–64.
 7. Walsh AM, Edwards HE, Courtney MD, Wilson JE, Monaghan SJ. Paediatric fever management: continuing education for clinical nurses. *Nurse Educ Today* 2006; 26: 71–7.
 8. Edwards H, Walsh A, Courtney M, Monaghan S, Wilson J, Young J. Improving paediatric nurses' knowledge and attitudes in childhood fever management. *J Adv Nurs.* 2007; 57: 257–69.
 9. Considine J, Brennan D. Effect of an evidence-based paediatric fever education program on emergency nurses' knowledge. *Accid Emerg Nurs.* 2007; 15: 10–9.
 10. Khalifa MI. Impact of an educational program based on evidence related to fever management. *J Egypt Public Health Assoc.* 2007; 82: 419–35.
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