

The effectiveness of health care professionals using online pain resources: A systematic review of educational intervention studies

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Background (150 words)

The development of new and innovative technologies in the provision of e-learning is growing exponentially and e-learning can facilitate the three domains of health care education i.e., knowledge, skills and attitudes. Online learning enables adult learners to tailor their learning according to their unique needs, providing autonomy over their learning and increasing intrinsic motivation, while facilitating the adoption of a reflective approach promoting enhanced learning. Although the amount of on-line instruction for health professionals has increased dramatically overall, and in the field of pain more recently, its effectiveness has not been rigorously evaluated. In fact, evaluation of on-line learning has been characterized as in its infancy.

Aims (50 words)

The aim of this review is to provide a synthesis of educational intervention studies exploring the effectiveness of e-learning pain-related resources for health-care professionals on knowledge, attitudes, and skills.

Methods (150 words)

The following databases were searched between 1st January 1995 and 1st November 2015: PsycINFO, CINAHL, MEDLINE, ERIC, Web of Science, Scopus, Cochrane Library and PUBMED databases. Initial search terms included three concept blocks: (i) Type of intervention; *online education, computer-based, e-learning, web-based, and internet-based* intersected with (ii) Population; *pediatrician, physician, nurse, psychologist, and medical* intersected with (iii) Outcome; *pain**.

Results (150 words)

33 eligible studies were identified and included in this review. Overall, the literature suggests pretest knowledge of pain management was low across many domains,

particularly in more complex areas of pain treatment such as palliative care. Knowledge was the most commonly adopted outcome variable, which for the majority of studies improved following training. Improvements in attitudes towards pain management and competence were also reported by some studies and, when assessed, acceptance of online interventions was generally high. Fewer studies explored the impact of training on patient outcomes, although one reported a significant increase in non-pharmacological interventions prescribed for nursing home residents by physicians, while another reported significant decreases in paediatric pain intensity.

Conclusion (100 words)

Online pain education benefits health-care professionals particularly in terms of knowledge, attitudes and to a lesser extent skills. Further research needs to be conducted exploring the potential clinical benefits to patients, which are rarely assessed in the existing literature. The variations among instructional methods and the rapid advancement of technology make it difficult to determine which elements contribute to an effective online learning environment and further research is required in that area.