



Enhancing computer literacy and information retrieval skills: A rural and remote nursing and midwifery workforce study

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Received 8 March 2013; received in revised form 3 February 2014; accepted 7 February 2014

KEYWORDS

Australian rural nurses and midwives;
Health care informatics;
Continuing professional development;
Currency of practice

Summary Nurses and midwives collectively, represent the largest workforce category in rural and remote areas of Australia. Maintaining currency of practice and attaining annual licensure with the Australian Health Practitioners Regulatory Authority (AHPRA) present challenges for individual nurses and midwives and for their health service managers. Engagement with information and communication technologies, in order for geographically isolated clinicians to access ongoing education and training, is considered a useful strategy to address such challenges.

This paper presents a pre- and post-test study design. It examines the impact of an online continuing professional development (CPD) program on Australian rural nurses and midwives. The aims of the program were to increase basic skill acquisition in the utilisation of common computer software, the use of the Internet and the enhancement of email communication.

Findings from the study demonstrate that participants who complete a relevant CPD program gain confidence in the use of information and communication technologies. Further, increased confidence leads to increased access to contemporary, reliable and important health care information on the Internet, in addition to clinicians adopting email as a regular method of communication.

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Health care employers commonly assume employees are skilled users of information and communication technologies. However, findings from this study contradict such assumptions. It is argued in the recommendations that health care employees should be given regular access to CPD programs designed to introduce them to information and communication technologies. Developing knowledge and skills in this area has the potential to improve staff productivity, raise health care standards and improve patient outcomes.

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Introduction

The context of rural practice is characteristically human, fiscal and infrastructure resource poor, relying heavily on nurses and midwives to advance their scope of practice to meet community needs (Francis & Mills, 2011; Mills, Birks, & Hegney, 2010; Pront, Kelton, Munt, & Hutton, 2013). A challenge for health service managers in rural and remote areas of Australia is to ensure their largest workforce group (Australian Institute of Health and Welfare, 2012) maintains currency of practice. This often requires geographically isolated clinicians to engage with information and communication technologies in order to receive education and training. Further, the Australian Health Practitioners Regulatory Authority (AHPRA) demands that regulated health professionals, including nurses and midwives, annually attest to currency of practice when reapplying for licensure (Nurses and Midwives Board of Australia, 2012). Each clinician must therefore demonstrate competence in evidence-based practice. The first step in the process of applying evidence to practice (Mills, Field, & Cant, 2011) involves accessing research findings in the workplace, usually in the form of journal articles, evidence summaries or clinical practice guidelines (Nagy, Mills, Waters, & Birks, 2010). These resources are available via database searches or through dedicated websites. They are usually subscribed to by health care organisations and include the Joanna Briggs Institute (2008), the Cochrane Collaboration (Graham, Tetroe, & KT Theories Research Group, 2007), or alternatively the Australian Government's open access *Clinical Practice Guidelines Portal* (NHMRC, 2012). Rural and remote nurses may also engage in other activities to maintain currency of practice, including reading hard copy literature and attending continuing professional development (CPD) programs. Face-to-face presentations, external study, or fully online CPD programs are the usual modes of delivery (Australian College of Nursing, 2012; Lu, Lin, & Li, 2009).

Information and communication technologies, while important to the development of knowledge and skills in the rural nursing and midwifery workforce, have broader implications. Typically, information systems are used to manage administrative, financial and human resources, and professional development processes. The utilisation of these technologies allows workplaces to advance efficiency by improving access to information and reducing the amount of time needed to complete activities (Chaudhry et al., 2006; Eley, Fallon, Soar, Buikstra, & Hegney, 2008; Fetter, 2009). Within health care environments computerised information systems underpin work activities (Haux, 2006; McBride,

2005), including the throughput of clients/patients, allocation of workloads, cost assignment and recovery, clinical care, diagnostic testing, communication between service providers, and administration and funding sources. It is essential therefore, for all health care professionals to be computer literate, having the capacity to harness the advantages that computers in the workplace provide (McNeil, Elfrink, Beyea, Pierce, & Bickford, 2006; Pruitt & Epping-Jordan, 2005).

Increasingly, health care environments are investing in computer infrastructure (Huryk, 2010). This is based on a belief that most staff will have the necessary skills to accommodate the inclusion of new technologies in their work practices. Computer literacy is often taken for granted, but there are still people in the broader community and within the health care environment, who need education and support in the use of contemporary computer technologies (Booth, 2006; Lium, Laerum, Schulz, & Faxvaag, 2006; McNeil et al., 2006). In this paper the authors present the outcomes of an online CPD program, which was offered to Australian rural nurses and midwives. The research study was supported by an Australian Government Department of Health and Ageing RHSET Grant, secured by the Association for Australian Rural Nurses and Midwives (ARNM). Following the merger of ARNM and Royal College of Nursing Australia (RCNA) in 2009, the national online CPD program was managed and facilitated by RCNA's Rural Nursing and Midwifery Faculty. Since the original pilot of the program, as reported in this manuscript, over 600 rural nurses and midwives successfully participated in this ongoing initiative.

Aim

The aim of this study was to explore the effect of an online CPD program on Australian rural nurses and midwives' attitudes, confidence, knowledge and skills in using information and communication technologies. The hypothesis was that by developing the knowledge and skills of nurses and midwives, those with limited or no previous experience with information and communication technologies, would increase the use of these tools in their work environments.

Methods

An experimental pre- and post-test design was used to evaluate the effectiveness of the online CPD program. Before and after the program participants completed self-report questionnaires that included a 12-item attitude scale and

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