Developing an Evidence-Based Curriculum Designed to Help Psychiatric Nurses Learn to Use Computers and the Internet

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This article describes the systematic process in which an evidence-based approach was used to develop a curriculum designed to support the computer and Internet skills of nurses in psychiatric hospitals in Finland. The pressure on organizations to have skilled and motivated nurses who use modern information and communication technology in health care organizations has increased due to rapid technology development at the international and national levels. However, less frequently has the development of those computer education curricula been based on evidence-based knowledge. First, we identified psychiatric nurses' learning experiences and barriers to computer use by examining written essays. Second, nurses' computer skills were surveyed. Last, evidence from the literature was scrutinized to find effective methods that can be used to teach and learn computer use in health care. This information was integrated and used for the development process of an education curriculum designed to support nurses' computer and Internet skills. (Keywords: Evidence-based education; Computer; Internet; Psychiatric nursing) J Prof Nurs 24:302–14, 2008.

THE PRESSURE ON organizations to have skilled and motivated health care staff who use modern information and communication technology (Downing, 2001; Farrel & McKinnon, 2003; Garg & Turtle, 2003; Smedley, 2005) has increased due to rapid technology development at the international and national levels (European Commission, 2005). Effective educational curricula have an important role in supporting nurses' computer and information literacy skills, which influence how well data systems are used by individuals within an organization (Barnard, Nash, & O'Brien, 2005; Torkzadeh & Lee, 2003) or productivity in health care settings (Fox, Dolman, Lane, O-Rourke, & Roberts, 1999; Vivekananda-Schmidt, Hassel, & McLean, 2004).

However, developing effective curricula to teach computer use is a challenge because there is variation in the computer skills of nurses in clinical practice (Honey, 2004; Saranto et al., 2002; Schmitt, Titler, Herr, & Ardery, 2004; Shorten, Wallace, & Crookes, 2001). Nurses belong to several generational cohorts, and they have different attitudes toward computers (Schmitt et al., 2004; Shorten et al., 2001). A number of nurses also dislike computers (Hillan, McGuire, & Cooper, 1998), or they may even have negative attitudes toward them (Marasovic, Kenney, & Elliot, 1997; Yang, Yu, Lin, & Hsu, 2004). This may result in poor learning outcomes in computer use (Bozionelos, 2001).

There is a variety of conceptions on the most important content areas about which nurses should learn during their professional education (Staggers, Gassert, & Curran, 2002): for example, basic competencies in using computers (Jiang, Chen, & Chen, 2004; McCannon & O'Neal, 2003; Saranto & Leino-Kilpi, 1997),

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particularly Windows operating systems (McCannon & O'Neal, 2003); the use of the World Wide Web to search for information and to communicate (Graveley, Lust, & Fullerton, 1999; Jiang et al., 2004; McCannon & O'Neal, 2003); or word processing software (Jiang et al., 2004; Marini, 2000).

Training and education have been identified as important concerns in computer use in health care (Lee, 2004). In the Finnish health care system, there are a number of nurses who have not received computer education as part of their nursing education because systematic computer education has been included in the nursing curriculum only since the beginning of the 1990s (Saranto et al., 2002; Saranto & Leino-Kilpi, 1997). In addition, the computer education offered as part of nurses' continuing vocational education in health care organizations varies. As yet, little is known about learners' experiences of computer education and barriers, particularly when courses are accessed from the nursing practice setting. To enhance nurses' information technology (IT) knowledge and skills, education should constitute a systematic and well-evaluated approach (McAlpine, Lockerbie, Ramsay, & Beaman, 2002; Wynd, 2002). In this article, we will describe a process in which an evidence-based approach was used to develop a systematic curriculum designed to support the computer and Internet skills of nurses in psychiatric hospitals in Finland.

This report is part of a multicenter study where an interactive multiple-service portal application (Mieli. Net; Mental.Net) was developed with patients and professionals. The Mieli.Net portal is to be integrated as part of systematic patient education in psychiatric hospitals. The content of the portal focuses on adult patients diagnosed with schizophrenia and related psychosis (F20–29, *International Classification of Diseases, Tenth Revision*) (World Health Organization, 1994). It offers: (1) patient-centered tailored information with multimedia material (text, voices, figures, and photos); (2) a channel for peer support (discussion room, chat room, and open Internet diary); and (3) an eSupport tool for counseling and support between patients and staff (question–answer column).

In this study, 183 nurses (registered nurses, mental health nurses, and practical nurses) in nine study wards comprised the study population. After the exclusion of ward managers (n = 9), the contact persons of each ward (n = 18), and nurses who only work at night (n = 7), 149 nurses were randomly allocated to the intervention group or the comparison group. Nurses who were allocated to the intervention group (N = 76) used the portal during their systematic educational sessions with patients. They could also use the information in the portal to update their knowledge on serious mental problems and their treatment. Nurses in the comparison group (N = 73) educated patients in systematic educational sessions using leaflets. To ensure that the nurses were skilled enough in using the portal as part of patient education, it was important to develop a curriculum, including a sufficient training period before the implementation of the application (Lee, 2004; Sleutel & Guinn, 1999). This study will concentrate on the development process of a curriculum designed to help psychiatric nurses learn to use computers and the Internet.

Purpose and Design

This article describes the systematic development process of an evidence-based curriculum designed to support nurses' computer and Internet skills in daily psychiatric nursing care. This was achieved by:

1. Identifying different ways of learning computer use among psychiatric nurses and exploring learning barriers to nurses' computer use
2. Evaluating nurses' computer skills
3. Performing a literature search
4. Reflecting the findings of Phases 1 and 2 against a literature search on the most effective approaches to teaching and learning computer skills, and integrating knowledge into the curriculum developed for psychiatric hospitals.

Method

To develop a curriculum designed to help psychiatric nurses learn to use computers and the Internet in daily psychiatric care, a combination of qualitative and quantitative methods was used. The study consisted of four phases. First, an explorative study with qualitative methods was used to identify different ways to learn computer use and to identify possible barriers to the learning process among psychiatric nurses. Second, nursing staff's computer skills were surveyed using quantitative methods. Third, a literature search was conducted to find the most effective approaches to teaching and learning computer skills in health care. Last, knowledge was integrated to develop a curriculum for computer and Internet use. The phases of the curriculum-development process are illustrated in Figure 1.

Phases and Instruments

In this study, multiple approaches with four phases were used. The study design is illustrated in Table 1.

Phase 1: Nurses' Prior Experience and Learning Background. The first phase is a qualitative study focused on nurses' learning experiences with, and possible learning barriers to, computer use. To ensure nurses' anonymity during data collection and for them to avoid feeling embarrassed in relation to their descriptions of learning experiences and problems related to IT (Yan & Fischer, 2004), essays were used as a data collection method. Nurses were asked to write in their own words their main learning experiences with computer use. Background information on nurses, such as age, gender, professional education, and qualifying year, was elicited.

Phase 2: Evaluation of Nurses' Computer Skills. A small-scale survey was conducted to measure nurses' computer skills using the Finnish version of the European