

Research Article

Continuing Distance Education in Nursing

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Abstract: Introduction: Continuing Education consists of a major priority in the field of education. Information and communications technology (ICT) pave the way for new innovative methods of providing education throughout life. Distance learning via a computer is a rapidly developing type of education and a new way of providing education in general. **Purpose:** The purpose of this review study is to investigate the nurses' attitudes towards lifelong learning as well as both its advantages and its usefulness towards nursing in practice. **Materials and Methods:** A scrutinized review of the Greek and international literature was carried out. The material of the study was manuscripts on the subject found in Greek and international electronic databases such as: Google Scholar, Mednet, Pubmed and the Association of Hellenic Academic libraries (HEAL-Link). **Results:** Health care professionals need constant education to maintain their qualifications and ability. Distance learning increases both the accessibility and flexibility of continuous training for nurses. The Obstacles of distance and time preventing nurses from participating in continuing vocational training courses are fallen down. **Conclusions:** The evolution of nursing science on a daily basis lead nurses globally to confront with ever greater challenges. It is vital nurses be adequately and continuously educated in order to cope with the challenges of their profession.

Keywords: nurses, continuing nursing education, distance learning.

INTRODUCTION

Continuing Education consists of a major priority in the field of education. Information and communications technology (ICT) pave the way for new innovative methods of providing education throughout life. Distance learning via a computer is a rapidly developing type of education and a new way of providing education in general. (Commission of the European Communities, 2001). Distance education is also applied to the health sector as well as the Net while the World Wide Web has expanded opportunities for flexible, convenient and interactive education for healthcare professionals (Cook et al., 2008) Computer-based distance education is described as a dynamic, innovative and successful way of providing learning opportunities. Learners can access a classroom through a website and participate in real-time lectures and group discussions. Education may also be provided asynchronously; in other words, the site learner can attend lectures and complete his projects based on his

own personal timetable (Simpson, 2003)It is essential nurses be provided with the opportunity for continuing education using appropriate methods so as to provide the patient with adequate and safe healthcare.

Several studies have focused on the efficacy of distance learning, revealing positive results from distance learning interventions compared to non-interventions (Cook et al., 2008 & Wuton et al., 2004) Interaction, practice exercises, repeatability, and feedback seemed to be associated with improved learning outcomes (Cook et al., 2010a).

The **purpose** of this review study is to delve into nurses' attitudes towards Lifelong Distance Learning, its benefits and its utility in nursing practice.

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METHODOLOGY

Greek and international bibliography was reviewed, focusing on views on continuing nursing education and distance education for nurses. The material of the study consisted of articles on the topic found in Greek and international electronic databases such as: Google Scholar, Mednet, Pubmed, Medline and the Hellenic Academic Libraries Association (HEAL-Link), using the keywords: nurses, continuing nursing education, distance education. The exclusion criteria for the articles were language, except for Greek and English. Manuscripts and studies accessible to authors were mostly used.

DISTANCE EDUCATION IN NURSING

Quality health care and quality assurance are concepts that have been enacted for many years. In a "never-ending quest for the highest quality at the lowest cost", a number of new methods and tools have been developed and used by healthcare professionals. (Tsaloglidou, 2009) Health professionals need ongoing education to maintain their qualifications and competence. **Distance learning** increases both the accessibility and flexibility of continuous training for nurses. As a result, the Obstacles of distance and time preventing nurses from participating in continuing vocational training courses are fallen down (Yu, 2006).

Distance learning is an open learning environment with ample sources of information providing learners with a myriad of texts, images, videos and plenty of audio material online. Billings *et al.*, (2001) described distance education as a learning environment where the instructor and learner are in a different place and time. Such a learning environment may be an opportunity for continuing nursing education (Billings *et al.*, 2001).

Distance education provides educational opportunities to individuals who have limited time through the combination of systematic teaching and computer technology. Learners are able to flexibly choose the appropriate time and place for them as well as methods for learning through interaction with the instructor and classmates. The trainee is considered to be the key person in distance education; and therefore, several researches have been conducted to investigate the attitude of nurses towards distance education (Billings *et al.*, 2001).

In a study carried out by Xing *et al.*, (2018), it has been found that nurses are willing to adopt distance education as the main method of continuing education. The location of the hospital, the use of computers and Internet access in their workplace were significantly correlated with nurses' attitude. Nurses working in provincial hospitals showed a more positive attitude and

a greater need for distance education compared to their colleagues working in hospitals in large urban centers (Xing *et al.*, 2018).

Similar results are found in another study conducted in Taiwan. Nurses working in health centers in the province who had access to a computer and Internet connection had a more positive attitude towards continuing distance education. In addition, nurses who were more able to use the computer showed a more positive attitude (Yu, 2006).

Those results were also confirmed by the research of Liang *et al.*, (2011) who studied the relationship between nurses' ability to use computers and the Internet and their attitude toward continuing education. Another finding of this research was the negative correlation between nurses' age and their attitude towards distance education. To put it briefly, older and more experienced nurses appeared to be less willing to attend and participate in online learning (Liang *et al.*, 2011).

Antithetically, Karaman's (2011) research revealed that age and occupational experience did not appear to influence nurses' perceptions over distance education. In this study, nurses stated that distance education fits their working conditions and needs owing to the flexibility it offers, enabling them to learn at their own pace and at the time that suits them (Karaman, 2011).

Moreover, Uslu *et al.*, (2014) revealed in their study that the majority of participants seemed particularly eager to participate in continuing education distance learning programs. However, a significant 26.9% found that this was unnecessary (Uslu *et al.*, 2014).

Factors Affecting Nurses' Participation in Distance Education Programs

It has been reported that role models can positively influence the adoption of innovative technologies by users. Thus, potential users can be encouraged when those who have adopted this type of learning are welcomed and rewarded. In addition, head nurses can act as role models and persuade their staff to use online continuing nursing education (Gong *et al.*, 2009).

In other words, the influence of colleagues and supervisors on users of continuing education online should be taken into account. Encouragement from colleagues and supervisors such as verbal persuasion can convey effective information so as to gain expectations and confidence in the use of e-learning (Lam *et al.*, 2006).

Furthermore, a positive organizational climate for online learning is proposed to be created so as to promote positive attitude of nurses. Thus, the nursing staff are encouraged to communicate and share positive experiences with one another (Chiu *et al.*, 2014) It is necessary the health care team have good communication with each other in order for the nursing role to be effective (Tsaloglidou *et al.*, 2007).

Chiu *et al.*, (2013) looked into the association of the work environment with nurses' attitudes towards distance nursing education. (Chiu *et al.*, 2013) Working environment can be characterized by combinations of the occupational characteristics; in other words, the combination of requirements and the control of the job to meet those prerequisites (Hausser *et al.*, 2010).

The combinations of job requirements and job control distinguish work in four types: active work (high requirements / high control), high work stress (high demands / low control), passive work (low requirements / low control) and low work stress (low requirements / high control). This model has been extended to link the characteristics of work with both stressful outcomes and active learning (Hausser *et al.*, 2010).

Karasek and Theorell (1990) hypothesized that decision-making regarding work processes would reduce an employee's stress but increase learning, while job demands would increase both learning and stress (Karasek *et al.*, 1990).

Nevertheless, job requirements are often associated with a lack of control and are not associated with increased learning (Karasek *et al.*, 1990). When high job control is achieved in combination with high job requirements, but they are not overwhelming, learning and development are the predictable results. This is known as active learning (Hausser *et al.*, 2010)

According to the results of the research of Chiu *et al.*, (2013), irrespective of whether job requirements were high or low, job control was positively associated with nurses' attitudes toward distance continuing nursing education. However, when the level of requirements was low, the relation of control to the nurses' attitude was stronger than when the level of requirements was high. The group of nurses adopted the most negative attitude was nurses with low work requirements and low control. Nurses whose type of work was characterized as active (high demands / high control) had the most positive attitude towards continuing distance nursing education (Chiu *et al.*, 2013).

In the systematic review of Bloomfield *et al.*, (2008), it was claimed that the trainees' satisfaction was statistically higher than distance education compared to traditional teaching methods in most of the surveys included in it (Bloomfield *et al.*, 20080).

In another systematic review of 11 studies, in which 2491 nurses and student nurses took part, revealed that computer-based education provided greater improvement in knowledge and a greater impact on clinical skills than traditional methods. However, these differences were not statistically significant (Lahti *et al.*, 2014).

The benefits arising from continuing distance education appear to be significant in terms of trainee satisfaction and acquiring more knowledge. However, the benefits regarding health professionals' behaviour and patients' outcomes remain uncertain (Militello *et al.*, 2014)

➤ **Factors favoring distance education**

Nurses consider the ease of access and the possibility of repetitive access to a distance learning educational environment as a very positive element. Conversely, systems that have difficulty accessing or navigating and that their design does not contain feedback mechanisms for users negatively affect their intention to use and participate in continuing education programs (Riley, 2016).

Redesigning e-learning systems to increase not only user's satisfaction and engagement but also increase in learning outcomes could reinforce the nurses' intention to take part in continuing education distance learning programs (Karaman, 2011).

Providing a feedback mechanism so that participants interact with their colleagues in real time could increase the validity of this way of continuing professional development, reduce the feeling of isolation and increase satisfaction, participation and learning outcomes (Riley, 2016).

➤ **Factors impeding distance education**

Barriers to nurses' participation in continuing education programs include lack of time, the noisy nature of the workplace, the reliability of technology, organizational support so that courses take place during working time, access to computers and content and online course design (Karaman, 2011).

Additionally, as it has already been mentioned, the discretion of computer use, the ability to work at their own pace and own interactive features can also affect nurses' satisfaction, and thus, their

willingness to participate in continuing education programs (Beavis *et al.*, 2012).

Increased levels of stress when using computers and lack of skills affect learning processes as they are presented as negative aspects of e-learning. Furthermore, negative aspects are considered the disappointment due to unreliable computer systems, lack of technical support, and time wasted when applications do not function as expected (Button *et al.*, 2014).

Chong *et al.*, (2016) found in their study that the majority of participating nurses had access to a computer both at home and at work, but the time dedicated to using it was limited. Only 17% of all participants had taken part in a distance education program. The most important reasons for their participation were increased knowledge and skills, improved attitudes towards nursing care, and improved nursing performance and competence. Regarding the type of distance education, most participants preferred modern education where learners receive guidance and feedback directly from their trainers and less participants showed a preference to asynchronous education where it is less interactive and completely self-directed (Chong *et al.*, 2016).

In 2014, Chiu and Tsai confirmed, through their research, the important role of social factors and the effectiveness of nurses in using the Internet to predict their attitudes towards continuing distance education. Facilitating working conditions such as organizational support and social influence have a positive effect on self-efficacy and attitudes toward distance education. When the social environment encourages nurses to take on such learning activities, they will be more confident and more positive about their use (Chiu, 2014).

Teaching Methods in Distance Learning Education Programs In Nursing

Cook *et al.*, (2010b) attempted to describe the variation in the formats, teaching methods and presentation forms of online learning. According to their findings, in terms of teaching methods, the vast majority of courses (89%) were presented, at least occasionally, with static written text. Online chat (via email) or video conferencing was also used. Multimedia was also used in more than half of the courses (55%). E-mail, chat, or videoconferencing was used in 32% of the courses. A small percentage of courses were delivered live (modern) (Cook *et al.*, 2010b). Other specialized teaching methods have been used on online courses, in addition to the text only in order to improve the learning process. The most common methods were

patient cases, self-assessment questions, and feedback. About one third of the courses had high levels of interaction (cognitive engagement), but the second third had low levels of interaction. A small percentage of courses (7%) shared learning materials to enhance learning (Lam *et al.*, 2006). There was a similar variation in the way the courses were presented. This included using audio to replace chat text in online forums, using animations rather than static images, and reducing the size of an email message by providing hyperlinks to information rather than incorporating the information itself into the text mail (Liang *et al.*, 2011).

The first publication on computer training for healthcare professionals was in 1996 by Mars and McLean in which a multimedia lesson on eye histology was presented to medical students. The first four lessons included digitized color photographs accompanied by written text and narrative. Clicking on keywords in the text provided the ability to tag an area of the photo, obtain additional information or link to a self-assessment question. The last part included a 43 question test. The program was set up on a local computer network that included 13 computers in the library area (Xing *et al.*, 2018).

The interaction between the learner and the system can be defined as the degree to which the learner perceives the control of the content, timing and sequence of communication through the e-learning system, the naturalness of web navigation and the responsiveness of the system. Essentially, if trainees are allowed to control and access the content of the site and the needs can be met immediately, then, this will make them believe that the e-learning system can be a useful learning tool and realize that such a system is useful because of its interactive function (Pituch, 2006). If healthcare professionals feel sufficient, they can play an important role in ensuring the quality of health services provided (Pantelidou *et al.*, 2016).

Practically, if the screen layout of the e-learning system is well structured and the instructions are clear, trainees will be able to navigate its content, and, what's more, the information they seek will be easier to be found (Cho *et al.*, 2009). The user-friendly design of the e-learning system will make learners feel more comfortable and find it easier to use (Liu *et al.*, 2010).

In the context of e-learning, individuals' interactions can be divided into two types: the interaction between the trainer and the learner and the interaction between the learners. All in all, new trainees can easily contact the trainer and receive prompt and courteous feedback through various communication tools (e.g., email, chat or forum). In the context of the e-

learning system, they may perceive that such a system is useful and may find it easy to use (Pituch, 2006).

Therefore, if trainees can establish effective personal communication with other trainees, learn easily in groups and quickly exchange knowledge with other trainees through various communication tools (e.g. e-mail, chat or forums) within the e-learning system, then, the system will be considered as being useful and an easy-to-use tool (Paechter *et al.*, 2010).

CONCLUSIONS

The development of Nursing science poses more and more challenges for nurses around the world on a daily basis. Lifelong professional education is considered a quality indicator in the health sector, for it can improve the knowledge and skills of health professionals as well as nursing care.

E-learning has many advantages as the trainee is not required to move; it is flexible and accessible, it can be cost effective and allows trainees to learn at their own pace and from the place of their choice. In addition, e-learning can provide customized content and teaching methods based on the individual needs of learners. A variety of multimedia such as text, sound and even motion can be used to support the acquisition of knowledge and skills.

An e-learning system where educators use interactive teaching methods to explain and assist participants and enable them to communicate through the tools suggested by nurses may influence nurses' intention to use the system. Interaction between trainees can also encourage nurses to continue learning through e-learning.

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