Impacts of E-learning in Nursing Education: In the Light of Recent Studies

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Abstract—Information and Communication Technologies (ICT) has changed our life and learn. ICT bares doors to new innovative methods to deliver education. E-learning is a part of ICT and has been endorsed as a tool for developing "21st century skills" in higher education. The aim of this review is to establish the impacts of e-learning in undergraduate nursing education. A systematic literature review was conducted to assess the impacts of e-learning in nursing education by using Akdeniz University electronic databases. According to results, we can decelerate that the nursing faculties cannot treat e-learning methods as a single tool. E-learning should be used with a good understanding of learners' needs.

Keywords—E-learning, nursing education, systematic literature review.

I. INTRODUCTION

RAPID growth in Information and Communication Technologies (ICT) has changed the way we live, work, and learn. ICT opens doors to new innovative methods to deliver education across the lifespan. In higher education, e-learning as a part of ICT has been endorsed as a tool for developing '21st century skills' [1]. E-learning has been described as a dynamic, innovative and rich way to provide learning opportunities. Students can access a class through a website and participate in lectures and group discussion in real time. Materials may also be provided asynchronously; students access the website, follow lectures or complete assignments according to their own schedules. Furthermore, it can help students gain knowledge and skills faster than traditional instructor-led methods [2].

Nursing competencies is vital to patient care quality. With the complexity of clinical situations, traditional didactic education is limited in providing real experiences and opportunities for student, clinician, and patient interaction. Knowledge and skills acquired through clinical practice are fundamental and critical to professional learning for students in nursing discipline [1]-[3]. In healthcare education, also e-learning has been positioned s a 'revolution in education' for healthcare professionals; a tool essential for developing the skills needed for future practitioners; and an excellent method for facilitating lifelong learning [4]. Also, because of the complexity of clinical situations, traditional didactic education is limited in providing opportunity for nursing student-patient interaction due to limited clinical hours and placements, unpredictable availability of patients with specific illness, and

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the uniqueness of each patient and his or her support system [5]. E-learning can enhance learners' knowledge and associated abilities through a variety of activities. Nursing students who interact with virtual patients in designed situations may avoid unnecessary risks and encounters with real patients. E-learning uses technology and services to provide training or learning material including tutorials, simulations, case-based, and game-based, learning modules [7].

Globally, e-learning has been introduced to nursing curricula in a number of Western countries including Australia, Canada, Greece, Ireland, New Zealand, United Kingdom and America. The use of e-learning is rapidly increasing in nursing education [8]. However, the effectiveness of e-learning is still inconsistent and a lack of evidence about the impact of e-learning methods in nursing education.

There is a lack of systematically conducted randomized controlled trials (RCT) comparing the effects of e-learning and traditional learning methods in nursing education. E-learning is not superior to traditional learning method but can be used as an alternative method in nursing education in nursing education. E-Learning should be used with a good understanding of learners' needs.

II. AIM

The aim of this review is to determine the impacts of e-learning in undergraduate nursing education.

III. METHODS

A. Design

We conducted a systematic literature review to assess the impacts of e-learning in nursing education.

B. Data Sources and Searches

We electronically searched Akdeniz University center electronic databases including MEDLINE, CINAHL, OVID, and PUBMED. In this study, key words used within the search were *"e-learning", "nursing" and "nursing education"*. The international literature from the last five years within studies published in English has been examined.

C. Inclusion Criteria

1. Meta-analysis, RCT's and exploratory descriptive studies evaluating the effectiveness of e-learning among nurses were included in this review.
2. The intervention included a situated e-learning program that involved the design of an interactive computer-

assisted program to place learners in a specific situated context, such as simulation situation scenario or case materials.

3. Study subjects were students in the nursing professions.

D. Data Analysis

In this review, there are three systematic reviews and five qualitative studies were detected.

IV. RESULTS

In the recent literature review, there are three systematic reviews of research on e-learning in nursing education. One meta-analysis showed that e-learning can increase students' own control over the content, place and time of learning. Furthermore, it can help students gain knowledge and skills faster than traditional instructor-led methods [9].

Another systematic review demonstrates situated e-learning programs significantly improved nursing students', but not clinicians, clinical performance [8].

The last systematic review identified 11 randomized controlled trials including a total of 2491 nurses and student nurses. They found that the random effect size for four studies showed some improvement associated with e-learning compared to traditional techniques on knowledge, but the difference was not statistically significant [10].

From qualitative perspective, despite some challenges, five studies found that e-learning has been a useful learning tool. One study showed that student's main engagement with e-learning was at an instructive level and as a support to existing face-to-face modes of delivery, and limited computer access, computing skills, technical issues and poor peer commitment was affected use [11].

On the contrary one study indicated that the perception of e-learning was positively influenced by its flexibility in time management, pace of learning, self direction and widening access to information [12].

Other study was determined that students were viewed e-learning as a resource in the same way as a lecture. Specific learning goals were found to be useful. Gender and age, depending on the teaching approach used, were significant in determining the results of the test, the same were the number of sources used in preparing for the test [13].

Next study was found that e-learning does not suit the needs of all learners from experiences and perceptions of nursing students. In another study, students felt that e-learning 'is here to stay' and wanted to 'embrace the concept [1].'

E-learning was generally welcomed however students suggested that it should be 'supplementary' to face-to-face learning. In order to incorporate e-learning ethically in low resource settings, resources should be sustainable, for example CDROMs and DVDs which are not dependant on internet access [1].

V. DISCUSSION

This systematic literature review aimed to investigate the impact of e-learning on knowledge, skills and satisfaction among nurses education compared to traditional education methods. Educators should carefully consider the needs of their students when deciding whether to use ICT [4]. Those electing to use e-learning should consider a broad range of methods before choosing a specific approach [9]. Whether e-learning methods are good or bad based on the authors' best understanding, these methods should be used with full awareness of students.

The some study's results showed that there were not significant differences in individual study time between the e-learning and lecture, but the lecture group used significantly more sources in their preparation compared to the e-learning group. The students who had used the most sources had significantly better results in the multiple methods than those who had used the least. A teacher can influence students both by setting expectations about the level of knowledge required and by encouraging interest in the subject so that the students want to broaden their learning zone [6].

In generally, younger and female students achieved higher scores than older and male students. This can be viewed in the context of the value placed on different learning styles. This has been attributed to the lecturers employing teaching methods that favored females. There has been concern that ICT may create social divisions between those who are technologically proficient and those who are not and therefore increase the differences between female and male. A symbolic identity has been created between technology and masculinity [10]. Males seem to have an enthusiastic and comfortable relationship with technology which gives them an important competency. Females however seem to have a higher regard for caring which unfortunately hinders their engagement with ICT as it appears masculine.

There are concerns about the use of new technology for nursing education; it is possible that new forms of computer based learning and teaching carry with them the possibility of surveillance and control of students. This form of surveillance is inappropriate to the underlying values of nursing education. New technology may not necessarily have to be used in this way and can be part of a liberating pedagogy [4]. A better understanding of e-learning adoption responses by nurse educators is becoming increasingly important. Nursing faculties are responsible for developing, delivering and monitoring educational programs, and assessing competence and fitness for practice.

Interactive methods are essential for students to engage actively in e-learning. According to authors e-learning is mainly at an instructive level whereby students do not play a proactive role and information is provided by the teacher for them to access [6]. Developments should be made to encourage a constructivist level of learning that is student focused.

VI. CONCLUSION

Although e-learning is not superior to traditional learning method because of the impacts of e-learning on the improvement of cognitive ability is limited when compared to traditional learning, it is an effective method to improve novice learners' performance and can be used as an alternative

method in nursing education. According to the results of this review we can said that the educators and researchers cannot treat e-learning methods as a single entity. E-learning should be used with a good understanding of learners' needs.

In the Turkey, nurse educators will need to develop a new curriculum able to prepare nursing students for their evolving role while carefully considering the role e-learning will play.

Lecturing gave good coverage of the syllabus and a good understanding about priorities. The e-learning program received good feedback regarding content and design and the students found the test program motivating. Should the college utilize e-learning to a greater extent it will need to invest in more computers and wireless access in several areas of the college. Specific learning goals were considered useful and worthwhile by the students in preparation for the test as they highlighted the most important points as well as the pitfalls. The teacher also gave positive feedback in terms of preparation for teaching based on defined goals.

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