ORIGINAL RESEARCH

Analysis of selected nursing transcripts for E-health/E-nursing education

Rasmeh Al-Huneiti[1], Mohammed Al Masarweh[2], Ziad Hunaiti[1], Ebrahim Mansour[2], Wamadeva Balachanrdan[1]

1. Brunel University, London, United Kingdom. 2. The Hashemite University, Zarqa, Jordan.

Correspondence: Rasmeh Al-Huneiti. Address: School of Engineering and Design, Brunel University, London, United Kingdom. Email: Rasmehalhuneiti@yahoo.com

Abstract

This paper reports on research concerning the establishment of an E-learning framework to impart E-health education to nurses in developing countries. Nursing and midwifery academic transcripts from several schools of nursing in different developing countries were analysed to evaluate their contents with regard to Information Communication Technology (ICT) and E-health/E-nursing courses. Content analysis mechanism revealed that there was no evidence of the introduction of the concept of E-health/E-nursing as such in any of the transcripts studied; only basic computer and fundamental courses were included.

Key words

E-health, E-nursing, E-learning, Nursing education, Developing countries, Human factors, Content analysis

1 Introduction

Technology applications in healthcare services are required to improve all aspects of nursing and patient care, and they have increasingly been extended to the academic and pedagogical fields of nursing practice, affecting nurses' approaches to acquiring knowledge. If nurses are not proactive in using and adopting technology in their practice, business and other healthcare providers may attempt to find a way to use those technologies *instead* of nurses, whereas their incorporation into existing nursing care would provide the most comprehensive and positive care for patients [1]. Therefore, the context and roles of nursing practice must be developed to allow nurses to optimise new and developing ICT systems to prepare themselves and the care environment, and ultimately to improve patient outcomes.

Based on the components of the nursing education system, a new model of nursing practice and healthcare service must be devised, to ensure that nurses have the required competencies in informatics, E-nursing, E-learning and E-health. Nowadays, health sectors are adapting to include E-health as a mainstream application. This is important for students, who need to add formal training in E-health and informatics as part of their education, in addition to developing their skills and experience in this specialist field. Additionally, qualified nurses, particularly advanced nursing practitioners, must keep abreast of new technological developments and innovations in care as part of continuous education in order to fulfil their role [1].

However, successful implementation of E-learning strategy to support nurses' education as well as their profession hinges in part on the readiness of nurses and the healthcare sector to adopt ICTs and utilize them on an on-going basis. Readiness involves both having access to ICTs and the essential competencies to use the technologies.

According to Booth RG [1], the lack of informatics content in nursing curricula is related to the lack of preparation on the part of nursing educators to teach informatics. Moreover, they are still not in an agreement about the significance and relevance of E-health on the quality of nursing care. The lack of specific strategies, ambiguous and complicated information technology infrastructure, and cultural and educational problems in relation to training and practice in information are major obstacles to the establishment of E-health in developing countries [2]. In any industry the adoption of new technology is complex and requires change management; in healthcare, a high-pressure sector (particularly in the context of developing countries), it is easy for such potentially important innovations to be de-prioritized [1].

This paper is part of a research project that aims to establish an E-learning model to be integrated into the nursing curriculum as a prerequisite for registration to practice nursing in developing countries in order to promote E-health implementation within the nursing community. The goal of this study is to investigate the concept of E-health with regard to nursing and midwifery academic programmes in order to establish the need for integrating an E-leaning for E-health platform into nursing education. In addition, comparison is made between different nursing and midwifery programmes in different countries. Furthermore, the study assesses the quality of these programmes with regard to E-health inclusion with reference to related literature concerning E-health adoption in nursing, and highlights the need for the introduction of E-health and E-nursing in these programmes to keep nurses (who constitute the largest part of healthcare system in terms of number and services they provide) on track with the internationalization and advancement in healthcare information technology [3].

In this paper, Eysenbach's model [4] of E-health is adopted: "an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies". E-health strategy analysis is achieved by examination of the entire E-health strategy documents for inclusion and vision of E-health education for nurses.

2 Research design and methodology

Content analysis was conducted for 24 academic transcripts of undergraduate nurses (general nursing and midwifery) for nursing staff who graduated between 2005 and 2009. The steps shown in Figure 1 were followed:
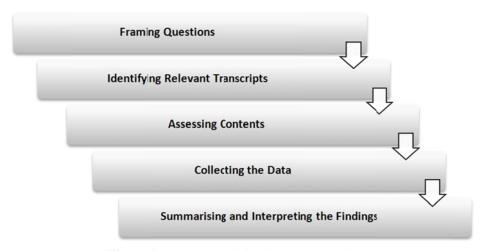

Figure 1. Content Analysis Flowchart Procedures

Before carrying out the research, the researchers acted as a committee to identify the main questions related to this study, as explained below.

2.1 Research questions

The main stage was to frame the research questions, which are summarised as follows:

1) Are any ICT-related courses listed in the transcript?

2) Are any courses involving E-health/E-nursing listed in the transcript?

Following that, 24 transcripts were selected for this study. Transcript records were obtained from different schools of nursing, mainly in India and the Philippines, from which countries the vast majority of nurses in the Qatar and Jordan (the case studies for the main research) are recruited. A number of transcripts from other pertinent countries were also included, such as Pakistan, Jordan, Indonesia, Qatar, Lebanon and Syria. The motive of the investigation is to benchmark these transcripts against the recommendations of the literature concerning E-health and E-nursing.

2.2 Analysis and data collection protocol

Content analysis method was used to collect the data and assess its quality [5]. This type of method requires pre-identification of certain criteria according to the research questions, to be accomplished through an in-depth investigation of the available resources (i.e. contents). To answer the research questions the content analysis mechanism illustrated in Figure 2 was followed, and the results are presented in the subsequent sections.

Figure 2. Data Collection and Analysis Protocol

3 Findings

A total of 24 transcripts from several schools of nursing from eight developing countries were analysed for different years of graduation of the holders of transcripts. The transcripts all belong to nurses currently working in Jordan and Gulf Cooperation Countries (GCC). The descriptive details are shown in Table 1.

Table 1. Content analysis of nursing graduates transcripts of study

S.N	Country & year of graduation	Length of program (yrs)	E-health/ E-nursing modules	ICT/computer-related modules description
1	India, 2005	3	No	None
2	India, 2005	3	No	None
3	Philippines, 2006	4	No	Introduction to electronic data processing (EDP) concepts
4	India, 2006	3	No	Basic computer programming
5	Indonesia, 2006	4	No	Basic knowledge of information & computer
6	Philippines, 2007	4	No	Computer concepts/ computer society
7	Philippines, 2007	4	No	Computer I & II
8	Philippines, 2007	4	No	Computer concepts and fundamentals IT presentation
9	Philippines, 2007	4	No	None
10	Philippines, 2007	4	No	Basic computer programming
11	Philippines, 2007	4	No	Info, Tech Word processing spread sheets & other applications. Basic concepts of computer. Multimedia presentation with internet navigation & PowerPoint presentation
12	India, 2007	3	No	Basic computer education
13	India, 2007	3	No	None
14	Qatar, 2007	4	No	Introduction to Computers
15	Philippines, 2008	4	No	IT fundamentals
16	Philippines, 2008	4	No	Computer concepts/computer society
17	Philippines, 2008	4	No	IT
18	India, 2008	3	No	Computer (elective)
19	Pakistan, 2008	4	No	Computer skills
20	Syria, 2008	4		Computer and its applications in health field
21	Lebanon, 2008	3	No	Informatics
22	Jordan, 2008	4	No	Computer skills I &II
23	India, 2009	3	No	None
24	India, 2009	3	No	Computer education

3.1 Country of graduation

From the transcripts studied (n = 24, 100%), basic percentage calculations using the data presented in Table 1 show that the Philippines constituted the most prevalent country of graduation (41.67%) followed by India (33.33%).

3.2 Length of the programme

Regarding the length of programme, 75% of the programmes are four years long; only India and Lebanon have programmes that are three years long. As shown in Table 1, neither the four-year or the three-year nursing programmes included specialist education on E-health, which severely disadvantages nurses expected to provide E-health care competently in a technology-driven healthcare environment, therefore nursing educationalists and leaders are in a unique position within the healthcare industry to take the lead in leveraging health information technology to enhance the quality of patient care by keeping nurses abreast of developments, or they risk finding themselves being left behind and removed from current working practice [1].

3.3 ICT/computer-related modules

The analysis of the transcripts revealed that the vast majority (87%) of programmes had some kind of ICT- or computer-related modules, mostly concerning basic computer skills and IT fundamentals. Computer illiteracy is a real barrier to the utilization of E-health applications in practice. Nurses who lack computer skills are at risk of frustration and the development of hostile attitudes towards E-health applications; this is exacerbated for practicing nurses who struggle to find time for specialist ICT education [1, 6-8].

3.4 E-health/E-nursing modules

The analysis of the transcripts revealed that there is no single module related to E-health/E-nursing in any of the curricula studied; if any regard was given to ICT in curriculum design, it was limited to basic computer courses.

4 Discussion

The goal of this study was to investigate nursing and midwifery curricula for the concept of E-health in order to establish the need for integrating an E-leaning for E-health platform into nursing curricula in order to keep nurses, who constitute the largest part of healthcare system in terms of numbers and the services they provide, on track with the internationalization and advancement in healthcare information technology. Since the graduation years were 2005 and onwards, we predicted that E-health education is included in some of the transcripts studied. Unexpectedly, the analysis of the transcripts revealed that there is no module related to E-health/E-nursing in any of the curricula studied, although the majority of programmes had some kind of basic ICT or computer-related modules (that were not directly related to nursing education). This makes it extremely challenging for nurses to support professional practice with ICT in a formal, structured manner; ad hoc approaches based on effectively general ICT skills are inadequate for the task of modern nursing practice in technology-driven healthcare systems.

E-health is still relatively new in nursing education literature. Prior to the late 2000s there were very few E-health subjects incorporated into the undergraduate health programmes. This results in a lack of awareness and knowledge with regard to E-health among the nursing community. The nursing curriculum can be a key channel to encourage change as well as to increase the focus on innovations involved within healthcare; it is essentially the source of future nursing practice and healthcare provision. Whilst there is a slow flow of content in nursing education, health innovations can provide a platform that will enable healthcare professionals to be educated and informed; this in turn will enable the motivation of such innovations as well as improving the healthcare system in general, based on the consensus that the introduction of E-health education in undergraduate nursing curricula improves patient and healthcare system outcomes. While health systems worldwide invest in technological solutions, this technology is rendered useless without skilled health practitioners who are able to apply the new patient care methodology [1, 9]. Further research work is recommended including more recent graduates (who have generally more exposure to ICT but who do not necessarily have more experience of ability in terms of E-nursing) and transcripts from other countries to enforce findings and to enable drawing rigorous conclusions.

5 Conclusion

The lack of a systematic education in E-health and E-nursing makes it hard for nurses, the largest group in the health workforce, to support professional practice with ICT in a formal, structured manner. Since the healthcare information technology landscape is changing rapidly and health information courses are not routinely included in the nursing curriculum, it is incumbent on nursing leaders to foster an environment among clinical staff to support new and innovative uses of information technology. Nursing curricula must be infused with meaningful E-health contents to ensure that future nurses are well prepared to work in a technologically-driven healthcare system and to drive technology-based improvements in patient care, becoming change agents in E-health initiatives. The findings of this study support the

introduction of an online E-health/E-nursing learning module integrated in nursing curricula for national nursing institutions, and familiarity with it should be a prerequisite for the registration of general scope nurses.

References

[1] Booth RG. Educating the future eHealth professional nurse. International Journal of Nursing Education Scholarship. 2006; 3: Article 13. PMid:16646940 http://dx.doi.org/10.2202/1548-923X.1187

[2] Nasiripour A, Rahmani H, Radfar R, Najafbeigi R. Effective elements on e-health deployment in Iran. African Journal of Business Management. 2012; 6(16): 5543-5550.

[3] Aladwani AM. Key Internet characteristics and e-commerce issues in Arab countries. Information Technology & People. 2003; 16(1): 9-20. http://dx.doi.org/10.1108/09593840310462998

[4] Eysenbach G. What is e-health? Journal of Medical Internet Research. 2001; 3(2): e20. PMid:11720962 http://dx.doi.org/10.2196/jmir.3.2.e20

[5] Neuendorf KA. The Content Analysis Guidebook. 2nd edition. Thousand Oaks, Cal.: Sage, 2011.

[6] Shorbaji, N. WHO EMRO's approach for supporting e-health in the Eastern Mediterranean Region. Eastern Mediterranean health journal 12, 2006: S238.

[7] Mars M. Building the capacity to build capacity in e-health in sub-Saharan Africa: the KwaZulu-Natal experience. Telemedicine and e-Health. 2012; 18(1): 32-37. PMid:22150714 http://dx.doi.org/10.1089/tmj.2011.0146

[8] Sandars J. Cost-effective e-learning in medical education. In Walsh K (Ed.) Cost Effectiveness in Medical Education: 40-47. Oxford: Radcliffe Publishing, 2010.

[9] Edirippulige S, Smith AC, Beattie H, Davies E, Wootton R. Preregistration nurses: an investigation of knowledge, experience and comprehension of e-health. Australian Journal of Advanced Nursing. 2007; 25(2): 78-83.