



Nursing informatics and its scope

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Abstract

In today's dynamic health systems, technology plays an important role in education and nursing work. So it seems necessary to study the role of nurses and highlight the need for appropriate information technology educational programs to integrate with the ever-increasing pace of technology. A review accompanied by an extensive literature search in databases and a library search focused on the keywords were used. The criteria used for selecting studies primarily focused on nursing informatics and the importance of expertise in the effective use of information technology in all aspects of the nursing profession. In a critical assessment of emerging technologies, the key elements of nursing informatics implementation were considered as healthcare promotion, advanced systems, internet and network. In view of the nature and the development of the information age, it is required to receive necessary IT (Information Technology) training for all categories of nurses. Due to the fast development of technology, in order to effectively take advantage of information technology in nursing outcome and quality of health care and to empower nurses; educational arrangement is recommended to set short-term and long-term specialized courses focusing on four target groups: studying, working, graduate, senior undergraduate, and graduate doctoral.

Keywords: nursing informatics, scope

Introduction

Nursing Informatics is a phrase that evolved from the French word "informatique" which referred to the field of applied computer science concerned with the processing of information such as nursing information. The computer was seen as a tool that could be used in many environments. In the early 1960s, the computer was introduced into healthcare facilities for the processing of basic administrative tasks. Thus the computer revolution in healthcare began and led to today's healthcare information technology (HIT) and/or electronic health record (EHR) systems. Many aspects such as data recovery, ethics, patient care, decision support systems, human-computer interaction, information systems, imaging informatics, computer science, information science, security, electronic patient records, intelligent systems, e-learning and telenursing have been added to the field. The American Nurses Association (ANA) published its aim and standards in 1994-1995 and presented the Nursing Informatics as a specialty that integrates nursing science, computer and information science to provide data communication management, knowledge and nursing work in 2001. Now most of nursing professionals believe that it is defined as the integration of information technology and all aspects of nursing such as clinical nursing, management, research or education

What is Informatics?

Informatics is the study of computational systems, especially those for data storage and retrieval. According to ACM Europe and Informatics Europe, informatics is synonymous with computer science and computing as a profession, in which the central notion is transformation of information.

What is nursing Informatics?

According to the American Nursing Association, "Nursing informatics (NI) is the specialty that integrates nursing science with multiple information management and analytical sciences to identify, define, manage, and communicate data, information, knowledge, and wisdom in nursing practice. NI supports nurses, consumers, patients, the inter professional healthcare team, and other stakeholders in their decision-making in all roles and settings to achieve desired outcomes. This support is accomplished through the use of information structures, information processes, and information technology" (ANA, 2015).

Hana has defined Nursing Informatics as the application of IT in the nursing duties including education, management & practice in integration of information science, computer science and nursing science to support nursing practice and knowledge management.

Nursing informatics refers to the practice and science of integrating nursing information and knowledge with technology to manage and integrate health information. The goal of nursing informatics is to improve the health of people and communities while reducing costs.

Components of nursing informatics

- The Components of Nursing Informatics are nursing science, computer science, and information science to manage and communicate data, information, knowledge, and wisdom into the nursing practice.
- Nursing science is a branch of science that deals with the principles and applications of nursing and related services.
- Computer science is the study of computation, automation, and information. Computer science spans theoretical disciplines to practical disciplines. Computer science is generally considered an area of academic research and distinct from computer programming.
- Information science (also known as information studies) is an academic field which is primarily concerned with analysis, collection, classification, manipulation, storage, retrieval, movement, dissemination, and protection of information.
- Integration of these three components forms nursing informatics.

Scope of Nursing Informatics

From the era of advancement in technology and science the Nursing Informatics spreads its roots deeper in clinical as well as academic side of nursing. The scope of nursing informatics can be summed up as following;

1. Health care promotion

Nursing care is an industry service and its product is patient care. Today, the subjects of clinical nursing information systems, decision support systems and medical diagnostic systems are associated with collecting patient information, storing this information and then retrieving the same information with the help of nursing informatics. Regarding the technology-rich environment, health care and hospital information systems developers, the quality of care is improving. Nursing informatics helps increasing patient safety and it's leading to an evidence-based nursing.

2. Advance systems

To minimize the potential errors happening either due to lack of time or resources advance systems are given by nursing informatics. Advance systems create decision support systems that have been defined to assist physicians to solve problems that require specific decisions since 30 years ago. It is replacing the role of human knowledge by formulating the knowledge in the system. Expert systems and artificial intelligence are the most valuable types of clinical decision support systems and have applications in show notes, diagnostic support, critical treatment plans, decision support, prescriptions, recovery and the identification and the interpretation of pictures, however, as stand-alone tools, are not able to replace human expertise.

3. Worldwide Nursing Network

In the World Wide Web, it is possible to have a common network for nursing organizations and develop a forum to discuss nursing issues and design online meetings. The other aspects of nursing practice potential in the new decade are offering services from distance through telemedicine or telenursing. In this regard, easy remote diagnostic software and hardware are designed to facilitate E-health services. Tele-nurses can provide various services such as education, patient monitoring and counseling through Internet facilities. Telenurse are satisfied with their role. They care remotely using special skills and knowledge. It can cover nurse shortages and the global demand for nurses. In a telenursing Survey most of nurses believed that it is better to design educational programs for nurses to be able to work as telenurse. Using online library resources and outreach programs would be beneficial and produce positive outcomes for nurses. Information and communication technology progress provided the possibility of improving health through e-education irrespective of time and place.

Conclusion

Nursing Informatics is revolutionary as well as challenging. It solves many problems like collecting huge amount of patient data, storing it and data can be retrieved back when needed. Nursing informatics helps in advancing systems with artificial intelligence and expert systems but can cause serious threat to critical thinking of nurses in practice. Nursing informatics is need of the hour in hospitals, clinics, community settings as well as educational fields. The proper use of this science should be included in educational programmes and time to time updates must be given to nursing professionals about the same.

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