



## EFFECTIVENESS OF WEB BASED TRAINING ON NURSING INFORMATICS COMPETENCIES AMONG STAFF NURSES AT SELECTED HOSPITALS.

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### ABSTRACT

The increasing use of technology is drastically changing health care organizations. Nursing informatics is an exciting nursing specialty, informatization the need of knowledge in the nursing field has significantly grown in this century. Utilization of nursing informatics has demonstrated positive outcomes for better quality patient care. Nursing informatics: nurses must possess the ability to obtain, store, retrieve, and communicate data, information, knowledge, and wisdom, which is essential to nursing practice. Nurses must be educated and competent enough in nursing informatics in order to exhibit safe and effective nursing practice.

**Aim:** The aim of the study is to evaluate the effectiveness of web based training on nursing informatics competencies which increase the technical competencies skills among the staff nurses

**Objectives:** To assess the level of nursing informatics competencies among staff nurses. To determine the effectiveness of web based training on nursing informatics competencies among staff nurses.

**Methodology:** A total of 60 samples were selected by simple random sampling and were assigned to two groups, namely, control and experimental groups. The experimental group received web based training for 3 days and the control group received normal training. Their competencies were assessed by informatics competency tool before as well as after the intervention in both groups. Data were analyzed by using descriptive and inferential statistics.

**Result:** Out of 30 samples in experimental group, 20(67%) are mild competent (Leaner level) and 10(33%) are moderately competent (awareness level). In control group 15 (46%) moderately competent (awareness level) are and 16(54%) are mild competent (Leaner level) The pre-test mean value of experimental group was 4.1 with 1.4 SD and the post-test mean value was 7.3 with 1.1 S.D. The paired-t test reveals that there is effectiveness of web based training on nursing informatics on increasing the level of competencies among the staff nurses at the level of  $P < 0.05$

**KEYWORDS :** web based training, nursing informatics, Nursing Competencies

### 1. INTRODUCTION

Informatics competencies are essential for nursing practice, and are critical to providing safe and effective patient care. It is estimated that approximately 3,000,000 nurses are working in the nursing informatics ( Hayes Greer 2014) where communication using information systems is expected. Profession that depends on the use of technology, the need for appropriate collegiate and continuing education programs in nursing with a focus on informatics competency is crucial to the development and maintenance of effective practice.

Nursing practice is continuously changing, and the need for appropriate competencies to address specific areas of nursing are essential to the provision of safe and effective care. Among the most important components of patient care are communication, clinical decision making, and patient safety. The practice of nursing is based on the collection, storage, retrieval and use of data, information, and knowledge. Nurses must be competent in these areas in order to provide safe and effective patient care. Technologies are used in practice to help with the management of information and clinical decision making.

The development, implementation, and use of technology are integral to the practice of nursing. However, the use of technology in practice creates new educational needs for nurses in regards to possessing knowledge, behavior, and skills for practice. It is important that nursing professionals and other healthcare providers are educated and competent in the proper use of technology as applies to the various disciplines in healthcare. To be competent is to possess specific behaviors, knowledge, skills, and capacity within defined areas. Nurses, especially, must possess competence in nursing practice to provide safe and effective patient care (Merriam Webster, 2012)

### NEED FOR THE STUDY

The rapid development of computer technology has driven the growth of the Internet, which has made access to daily services more timely and convenient. Nursing practice encompasses a health care discipline derived from the concept that nurses are care providers who design, manage, and coordinate care. Nursing practice, founded on the concepts of knowledge, theory, and research, is progressively evolving, focused on promoting health and wellness, providing health care, and reducing risks for adverse health outcomes (American Association of Colleges of Nursing, 2012).

As a profession, the practice of nursing is based upon specific standards of care, where care is addressed through the nursing process: assessment, diagnosis, planning, implementation, and evaluation. Nurses are required to collect, store, and retrieve data and information, in order to synthesize knowledge and use wisdom to guide nursing care. Critically important to handling data and information, effective communication must be exercised at the professional level in order to achieve safe patient care. The need for study is to show the effectiveness of web based training on nursing informatics which increases the competency level among the staff nurses. Nursing informatics helps the nurses to provide better quality care, it also helps to reduce the burden of paper work, electronic patient record systems and CPR (Computerized Patient Record System) prevents the medication errors, and maintains the confidentiality and promotes the speedy sharing of the patient information in health care team.

**Webster (2010)** states that the nursing informatics framework guides how data, information, knowledge, and wisdom are stored, retrieved, and utilized in nursing practice. Nurses must obtain data, convert it into contextualized information, which is interpreted using knowledge, and then must use wisdom to make decisions

based on this knowledge and process.

**Nagelsmith, (2011)** explained that application of nursing informatics in to nursing practice is built upon specific set standards of care, the way that nursing care is provided is ever changing, primarily through the development and integration of technology it will reduce the work burden of the nursing staffs.

**Vawdrey, (2012).** Conducted the study to determine the information that is communicated electronically in the hospital setting is immense, and provides relevance to the importance of effective communication. study conducted on two hospital campuses, an average of approximately 65,000 notes were communicated electronically each week. This amount of communicated notes gives substance to just how important communication is in a setting that relies so heavily on the process and transfer of electronic information. Through the emergence of electronic forms 10 of communication in healthcare, transferring patient information and data has become more efficient, with increased potential for accuracy and validity of information. A prime example is the development of the Electronic Health Record (EHR).

**Carter, (2014)** states that the use of many types of technologies in healthcare, and specifically in nursing, has become a key component to providing patient care. As an integral element to health care, technology used within the nursing profession varies widely, and requires numerous skills for the utilization of specific technologies. Technology used daily by nursing personnel may include, but is not limited to, IV pumps, blood pressure machines, ventilators, naso/oropharyngeal suction devices, wound vacs, bladder scanners, ultrasound machines, glucose monitoring kits, barcode scanners, and computerized provider order entry systems (CPOE) and the EHR. Bedside monitors also assist nurses in the process of data collection, with input into the EHR.

**Casey & Wallis, (2015)** conducted a study on Acquiring informatics skills and demonstrating those competencies facilitates among the among 100 nurses to practice using informatics knowledge. Experimental research design was used. He concluded that Nurses must understand how to access the right information at the right time: how to retrieve, store, and utilize information in order to make the correct decisions. Fundamentally, this is the core of communication of nursing informatics.

**Bakken et al, (2013),** conducted study on competence in nursing informatics is linked to safe patient care. One group pre test and post test designed was adopted. The development of informatics competence by healthcare professionals is elemental to reducing or preventing medical errors, providing a safer environment for patients in need of care. In a pre- and post- implementation study focused on competencies in nursing informatics, it was found that increased competence ultimately resulted in increased in quality and effectiveness of communication and patient care

#### Statement of the Problem

Effectiveness of web based training on nursing informatics competencies among Staff Nurses at selected hospital

#### Objectives

To assess the level of nursing informatics competencies among staff nurses.

To determine the effectiveness of web based training on nursing informatics competencies among staff nurses.

To associate post level competencies with selected demographic variables among staff nurses.

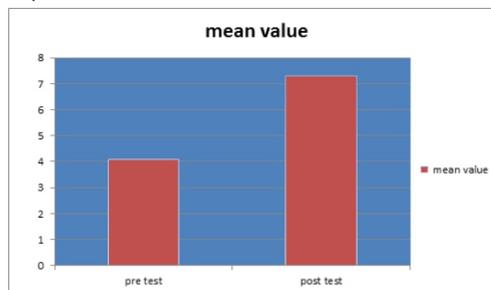
**Hypothesis** There is a significant increase in the level of competencies after receiving the web based training on nursing informatics among staff nurses in experimental group than control

group

#### Methods and Materials Used.

The research approach used in the study was quantitative approach by using true-experimental research design. The study was conducted at selected hospital with 60 samples. Out of which 30 samples in experimental group and 30 samples in control group and the samples were selected by using simple random sampling technique. The tool used for the study was demographic variable and nursing informatics competency based check list to assess the level of informatics competency. Explained the study to the samples and got the consent from the samples. Demographic variables and competency level were assessed for both experimental and control group. Web based training on nursing informatics was given for 3 days for the experimental group. Post test was done by using the same tool. The data were analyzed by using descriptive and inferential statistics.

**Result:** Out of 30 samples in experimental group, 20(67%) are mild competent (Learner level) and 10(33%) are moderately competent (awareness level). In control group 15 (46%) moderately competent (awareness level) are and 16(54%) are mild competent (Learner level) the pre-test mean value of experimental group was 4.1 with 1.4 SD and the post-test mean value was 7.3 with 1.1 S.D.



The paired-t test reveals that there is effectiveness of web based training on nursing informatics on increasing the level of competencies among the staff nurses at the level of  $P < 0.05$

#### Conclusion

The study concludes that the web based training is used for improving the nursing informatics competencies skills the Information technology is not a panacea, but it will provide the profession with unprecedented capacity more rapidly, generate and disseminate new knowledge. The brief training about the competencies will support nursing practice introduced several of the information tools used by nurses to complete their work rapidly developing mode health service delivery in which nurses can expect to play a key role.

#### Recommendations

The similar study can be done on the larger scale.

The similar study can be done in different settings such as community, collages.

Comparative studies can be done between nursing and other health care professional.

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