Registered Nurses' Attitudes Toward Working With Computers/ Ayala Gonen

Abstract

Introduction & Background: The last two decades have witnessed a revolution in health care services thanks to computer technology. Integrating the use of computers into nursing activities is a true innovation within the nurse's milieu. Nurses are not characteristically keen to change longtime habits and implement this technology into their workplace, and their reactions and those of health care professionals to these innovations are varied. The success of adopting computer technology depends upon gaining their support, and identifying and understanding the human factor can achieve that goal.

Research question: The purpose of this study is to determine the attitudes of practicing registered nurses (RNs) towards the use of computers in the hospital setting as a predictor of their future behavior, and to find the connection between theses attitudes and selected sociological, professional and personal factors.

Theoretical framework: The study was based on the theory of Planned Behavior (Ajzen, 1991), and an attempt was made to examine the possibility of expanding the Planned Behavior theory by adding some components, such as Threat and Challenge (Folkman & Lazarus, 1980), Innovativeness (Agarwal & Prasad, 1998), and factors which are related to the individual and to the man-computer interaction.

Methodology

1. **Subjects:** A random sample of 411 RNs was selected from a single large medical center. The specialized nursing areas in the sample included critical care, pediatrics, internal medicine, surgery, maternity, ambulatory care, and management.

2. **Instrumentation:** The study tool was a 4-part Likert style questionnaire: **A.** examining the Planned Behavior theory and innovativeness; **B.** examining the Nurses Attitude Toward the Use of Computers (NATC) questionnaire based on a questionnaire by Stronge & Brodt (1985); **C.**

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examining the Threat and Challenge component; **D.** examining individual demographic and professional background.

3. **Establishing validity and reliability:** All the questionnaires successfully met validity and reliability requirements.

4. **Data collection:** 35 wards were chosen to represent the entire RN population in the medical center. 441 of the 502 questionnaires that were handed out were returned (82% response).

Analysis: Data were analyzed by statistical tests as appropriate: descriptive statistics, Pearson correlations, MANOVA tests, and the Lisrel path analysis.

Findings and Discussion: Overall, the results of the study corresponded with the working hypothesis. Significant positive correlations were found between the **nurse's level of support** (from the head nurse and the staff) and with attitudes towards computers and intentional behavior. Positive correlations were also found between the **organizational and departmental climate** and these attitudes. The well-recognized importnace of creating an appropriate atmosphere, i.e., a comfortable working environment, which enables a nurse's feeling of growth and empowerment for providing the best quality nursing care to the patient, was confirmed. Moreover, the significant positive correlations between previous use of computers and current attitudes supported the findings of others. Strong significant positive correlations were found between the **RN's attitudes, self-efficacy, innovativeness and intentions to use computers**. Another significant correlation was found between **the threat and challenge, self-efficacy, and innovativeness**. The less the threat by the computer, and the higher the challenge, the higher the self-efficacy, and innovativeness will be. In addition, relatively significant correlations were found between the feeling of **threat and challenge and the intention of using a computer**, As the threat is smaller and the challenge is higher, the nurse's intention to use computer is higher. According to the study's hypothesis, the relations between the variables represent a research model in which the **exogenous variables** include the subjective norms, man-computer interaction and the individual's characteristics, while the **endogenous variables** include the nurses' attitudes, self-efficacy, innovativeness and intentions behavior to use computers.

This study demonstrated that the threat and challenge variables are very important mediator variables to the understanding of the process of predicting attitudes and intentions toward using computers. It was also found that the sum of the various

studied measurements explains 45% of the nursing attitudes and 49% of the intention behavior. These findings explain the quality of the prediction, which testify to the powerful effect of attitudes and intention behavior.

The study's results contribute valuable information in three dimensions: Theoretical, Implemental and Methodical.

The Theoretical contribution of the study is by means of introducing a theoretical model in which the feelings of threat and challenge become mediator variables between the exogenous and the endogenous variables. **The Implemental contribution** is seen in applying the study model to improve the ability to predict attitudes and the planned behavior of the RN. The study's findings can supply additional information for identifying various factors that support of refute the attitudes and the planned behavior of the nurse's intention of using a computer. **The Methodical contribution** is found in the study's questionnaire which can provide a resource for many future studies that relate to the nursing profession nationwide since this research tool was adapted to Israeli conditions and underwent validation and reliability tests.

Recommendations: To design and build a suitable interventional program for the group of RNs with the highest level of computer anxiety and the same for the RNs with the highest levels of self-efficacy, and innovativeness. In addition, the positive significant correlations that were found between previous use of computers and attitudes makes it incumbent upon executives and policy-makers to provide numerous opportunities for the RNs to improve their computer skills and to expose the RNs to the advantages of using a computer as a tool for advancing the quality of the nursing care. All these measures in combination will contribute to their enjoying the use of computers, to their having greater satisfaction at the workplace and to less frustration among the nursing staff who are initially reluctant to use computers.

In conclusion, this study has demonstrated the importance of examining the human factor in investigating and understanding the RN's attitudes toward the use of computers. Undertaking this analysis is an essential step in assuring greater success in the implementation of computers in their workplace.

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