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USE OF DECISION SUPPORT SYSTEMS IN NURSING FIELD: TURKEY PROFILE

Abstract:

This systematic review assesses decision support systems used in nursing area in Turkey and effect of these systems on nursing care. This study was conducted using scientific search engines such as Ulakbim Medical Data Base, Turkish Medline Data Base, National Thesis Center, Turkish Citation Index, Turkish Psychiatry Index, Academic Index. As determined, keywords were searched in several combinations. A total of two theses that met the inclusion criteria were involved in the evaluation. This systematic review shows that the studies on this issue are very limited in terms of quantitative perspective but the results are positive. In this context, it is suggested that the number studies which are evaluating the effectiveness of the nursing care with clinical decision support systems are increased and similar studies are planned with various nursing practices.

Keywords:

Decision support systems, nursing, care, Turkey

Introduction

Decision support systems (DSS) are computer technologies supporting decision making and problem solving (Shim et al, 2002) and providing integration into health care system (Berner, La Lande 2007) Health care is an endeavor maintained with a variety of profession member (clinician, nurse, pharmacist, other occupations and auxiliary staff). Hence, computer systems should facilitate this endeavor (Payne, 2000). Clinic decision support systems (CDSS), individual-specific assessment with data coming from research evidences, guidelines and many sources, and help nurses directly in clinic decision-making (Sim et al, 2001; Fossum et al, 2011; Bright et al, 2012). These systems are supportive regarding to care and medications and stimulant for protective health services and some critical values. Moreover, it is helpful in solution of problems regarding to care (Garg et al, 2005).

In light of this information, it was aimed in this study to determine decision support systems used in nursing field in Turkey and effect of these systems on nursing care. In light of this aim, research question was formed as "What are decision support systems used in nursing field in Turkey and effects of these systems on care?"

Methods

This systematic review was conducted based on the "*Centre for Reviews and Dissemination 2006*" Guide developed by the National Health Research Institute of York University (Dixon-Woods et al, 2006). The present study was conducted through searches using Ulakbim Medical Data Base, Turkish Medline Data Base, National Thesis Center, Turkish Citation Index, Turkish Psychiatry Index, Academic Index. Compliance of key words are assessed in Turkish Scientific Terms. As determined, keywords were searched in several combinations (Decision support systems, Decision support systems and Nursing, Decision support systems and Nurse, Clinic decision support systems, Clinic decision support systems and Nursing, Clinic decision support systems and Nurse), and the final search was conducted on September 2015. To the study, studies in which epidemiological study methods written in Turkish and English conducted by nurses in Turkey were included.

Scans were conducted in six databases. Relevant titles/abstracts were reviewed (n=441). Among studies, those proper for the aim of the study were determined (n=6). Repeating studies were detected and deleted (n=4). Potential studies were selected in accordance with inclusion criteria (n=2).

Results

In this study, two study articles were reviewed. Articles were written in Turkish. Both studies were published as doctorate dissertations. Results obtained from these studies were presented under titles "sample, intervention, effect of nursing care on DSS".

Sample

The first article that was assessed was study of **Yilmaz** (2014). Sample of this study consisted of 14 nurses working in Gynecology-Oncology Service. Having conducted the study in three stages **Sucu** (2012) examined 212 stool samples. The second stage was conducted with 72 patients in experiment and control group and the third stage with 19 nurses providing care to patients having enteral nutrition.

Intervention

Aim of study of the study of **Yilmaz** (2014) was to assess opinions and attitudes for computer use of nurses, to constitute CDSS for care of cancer patients and to review experiences relating to use of the system. In line with this aim, the study was conducted in four stages. In the first stage of the study, features of using computer by nurses, attitudes towards computer use and computer-supported care plan were assessed. In the second stage, education given to nursing process was assessed. In the third stage, CDSS was formed within the scope of nursing process for care of cancer patients. In the fourth stage, experiences relating to use of clinic decision support system.

Aim of the study of **Sucu** (2012) is to test validity and reliability of a scale for nutrition, to examine effect of enteral nutrition-contented DSS and to reveal experiences of nurses. In line with this aim, in methodological phase of the study, validity-reliability study was conducted. In semi-experimental stage, a DSS was constituted within the scope of "Evidence-Dependent Enteral Nutrition Administration Protocol" for intensive care patients. In qualitative stage, experiences relating to DSS use of nurses were revealed.

Effect of decision support system on nursing care

In the study of **Yilmaz** (2014), nurses stated that quality of CDSS care improved. **Sucu** (2012) revealed that DSS enhanced patient care quality. It was expressed that DSS had many positive effects along with its effects on decision-making, disease management, diagnosis and treatment (Özata, Aslan, 2004). Results of these studies examined in this review support this view.

Discussion

Use of CDSS in medical diagnosis and treatment, medication administrations, protective interventions and individual-specific care provision has increased (Fossum et al, 2011; Sim et al, 2001; Berlin, Sorani, Sim, 2006). Furthermore, it decreases medical errors and costs and increases health care quality and efficacy (Fossum et al, 2011; Bright et al, 2012; Sim et al, 2001; Berlin, Sorani, Sim, 2006). According to results of this systematic review, DSS improves patient results, and provides positive effect in medical treatment process, protective measures and medication administrations (Garg et al, 2005). Despite these benefits of CDSS, evidences supporting its use are limited (Fossum et al, 2011; Bright et al, 2012). Similarly, despite positive effects of CDSS use, it was detected that the examined study numbers was limited to two. Difficulties relating to use of CDSS, and absence of long term use concerns researchers and medical IT specialists (Kaplan, 2001).

Attitudes of nurses towards DSS use exhibit variability (Andre et al, 2008). Nurses having inadequate knowledge and experiences relating to technology use adopt negative attitude relating to DSS use (Randella, Dowding, 2010). In contrast, reasons such as its helping in critical thinking and decision making, increase of individual-specific care quality and improvement of health processes make nurses believe the requirement of DSS (Aydin, 2011; [17] Gebru et al, 2015). Results obtained in this study show similarity with literature.

Results of this systematic reveal the increase of the use of CDSS in nursing area and requirement of assessment of effect of these systems on nursing care with similar studies having high evidence level.

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