SPECIAL PAPER

Registering Nursing Interventions in Electronic Environments in Accordance with Nursing Process: an Example from Turkey

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Abstract

Background: As being a professional occupation, development of nursing is affected by technological advancements in other fields. Aim of nursing is offering a safe, efficient and quality care. In general, lots of data, both quantitive and qualitative, is registered by nurses to the system of health records. Also usage of care plans adapted to computer environment has the benefits like eased risk management and analysis, standardization of given care, establishment of the communication between multi-discipliner care members, eased reading of documents.

Aim: To determine the characteristics of electronic records to be able to employ nursing process successfully, a computer software which takes into account and reflects both the thinking process and condition of working places needs to be developed.

Results: While computer and care plan usage have many positive ways, generally in Turkey it's observed that usage of both are not at a desired level in nursing services. The computer software which is used to improve patient care quality must have qualities like being systematic, permanent, enabling diagnosises to be analyzed via discussions and to be systematically assessed, and giving guidance to nursing applications.

Conclusion: Electronic patient registration system used by nurses should make time-saving possible, be easily used with easy menus, save all applications exactly, have warning and alarm systems, display necessary interventions at appropriate times, be a guide for patient care.

Key Words: Electronic medical record, nursing, nursing records, medical informatics, health information technology

Introduction

Computer technologies are used more and more in organizational schemes of the healthcare system and this caused an evident increase in quality and promptness of patient registration documents, job satisfaction of health care professionals and patient satisfaction (Ting-Ting & Pi-Chen, 2004). One of the major elements in health record system is the process-integrated decision support through current medical knowledge, and comprehensive use of patient data for research and health care reporting (Haux, Ammenwerth, Herzog, Knaup, 2002). As being a professional occupation, the development of nursing is affected by technological advancements in other fields. Hospital automation systems change the way in which health services are offered and managed together with nursing care itself and the way it is offered and managed. Electronic record systems were intended to support health care professionals, mainly physicians, nurses and administrative staff (Likourezos et al, 2004).

The aim of nursing is to offer a safe, efficient and quality care. In general, lots of data, both quantitative and qualitative, is registered by nurses to the system of health records. These data support nursing applications and not only used for the advancement of nursing information systems but it rather creates a base for other hospital information systems. The lack of connection between nursing records and the other records kept by other healthcare professionals is a big obstacle for sharing the nursing records effectively. Too many informative systems users' existence; inflexible systems; systems not being in accordance with the institution rules it has been employed in; patient records' over complexity are the other reasons which makes hard using electronic health care records (Anderson, 2007; Safran & Goldberg, 2000). Researches indicate another great barrier which is that a long time and effort must be devoted to learn these systems (Anderson, 2007). If system is not designed accordingly to suit work-flow, recreation of information and changes on already present information may cause some problems (Safran & Goldberg, 2000). Since nursing records is not written in a systematic way and composed of clinical information which is largely a repetition of laboratory results, other healthcare professionals does not consider them as a reliable source of information (Cho & Park, 2003).

Care plans adapted to computer environment makes it possible to enter a wide and ready database; saves all the health care records by health care teams; decreases the time used to write on papers (Ting-Ting & Pi-Chen, 2004; Ay (a), 2008). Also usage of care plans adapted to computer environment has the benefits like eased risk management and analysis, standardization of given care, establishment of the communication between multi-discipliner care members, eased reading of documents (Ting-Ting & Pi-Chen, 2004; Thoroddsen & Thorsteinsson, 2012). When computerized and traditional paper-based patient records compared, it has been understood that computerized records are correct, simple and timely reachable and on the other hand paper-based records include data loses, errors and limit the usage of the data at hand due to discrepancies between data (Ay (a), 2008).

If health care related data are not recorded in relatively and complementarily to each other or if data loses occurs, the continuity of the service is blocked. Both finances and health care quality are affected by fragmented and unregistered data (Anderson, 2007).

According to Schoeffel (2001) the paper record represents massive fragmentation of clinical information (Erdil, Uğurbaş, Albayrak, 2010). The retrieval and access is much easier from electronic records than from hard copy records stored in the archives of care providing institutions (Erdil, Uğurbaş, Albayrak, 2010).

Although computer software specially designed for nursing are existed abroad, these are not suitable for the cultural constructure of Turkish society and health care system (Ay (a), 2008; Savaşçı, 2001). Specially starting from the beginning of 2000s, in Turkey, initiatives towards nursing diagnosis and the importance of classification of health care results started to be discussed. While computer and care plan usage have many positive ways, generally in Turkey it's observed that usage of both are not at a desired level in nursing services (Uçar, 1993).

Although computer systems heavily used in medicine, in our nursing services it's almost not used at all. The core reason regarding this matter is the commonly used "nursing service" model in Turkey. In literature, Ulker, Platin et al. evidently shows in their research (Uçar, 1993):

1. Nurses heavily work job-centered and at this they usually carry out routine tasks.
2. Habit of records keeping is not at a desired level and the kept records are not sufficient to understand the patient and his/her issues.
3. Activities which can let the patient acquire comprehensive care such as systematic assessement and data collection do not exist.
4. Usually doctors think and decide to what a nurse should do.

Electronic Registration System Complying With Nursing Process

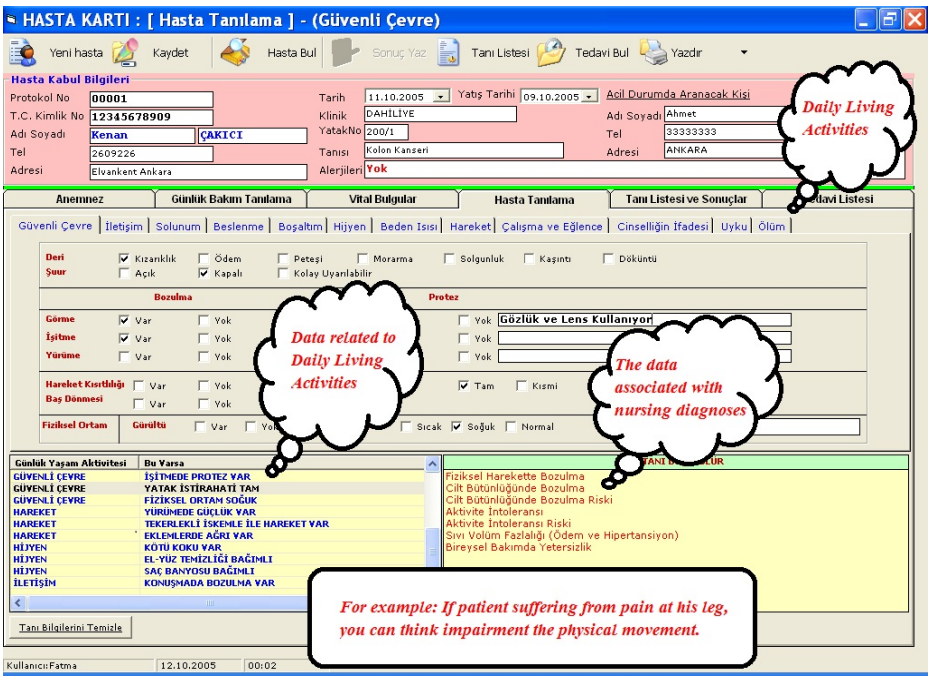
Nursing process is a registration system through which planned and applied basic patient care is systematically registered. Nursing gains a professional identity through dynamic nature of nursing process which requires a scientific

approach to thinking, researching and can be planned specifically for individuals or families (Ting-Ting & Pi-Chen, 2004; Ay (a), 2008; Uçar, 1993). To be able to employ nursing process successfully, a computer software which takes into account and reflects both the thinking process and condition of working places needs to be developed.

An ideal registration system eases reading, foldering and reaching information, registers quickly, is in accordance with the standards of the institution which uses it and the aim of health professionals, lets the patients be registered in physical, psychological, sociocultural ways (Ay (a), 2008; Mengel, 1989).

In Turkey, nursing education is given at different levels (high school, bachelor's degree, master's degree) but after graduation the job description and statue of all nurses are same. Consequently this causes an obligation to standardization of nursing practices. Since nurses knowledge level for nursing process is not equal, patient records are not kept steadily and extensively, this also causes a data loss of nursing applications. So, an electronic nursing registration system which will be used in Turkey should give guidance on identification of patient issues and assessment of them. (Fig 1)

Fig 1: Data acquisition form in line with Daily Living Activities*



* Pictures are taken from the computer software developed by Assistant Professor Fatma (Akça) Ay in consultancy by Prof. Dr. Şule Ecevit Alpar.

Altun (1998) states that with a rate of 39.6%, nurses experience most difficulties in the diagnosis stage. Foremost problems for application of nursing process are the time losses of registering patient issues every day and the nonexistence of a common language for nursing diagnosis.

One of the common aims of internationally recognized nursing diagnosis and classification systems is nurses' usage and development of computerized forms (Ay (b), 2008). In Turkey, nonexistence of a nursing diagnosis list in national level, educational differences between nurses, unsuitableness of registration forms to reflect patient care are some reasons which make nurses reluctant and knowledgeless on identification of patient problems and comprising a diagnosis accordingly to data at hand. Because of these, a registration system which will be used in Turkey must be able to help nurses to comprise diagnoses. (Fig 2)

Fig 2: Patient problem list comprised using NANDA diagnosises

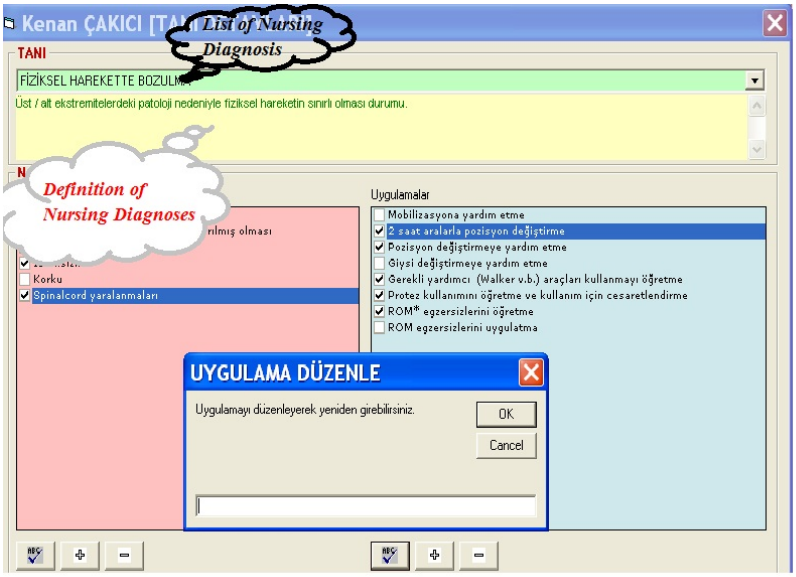


Fig 3: Identification of nursing initiatives screen

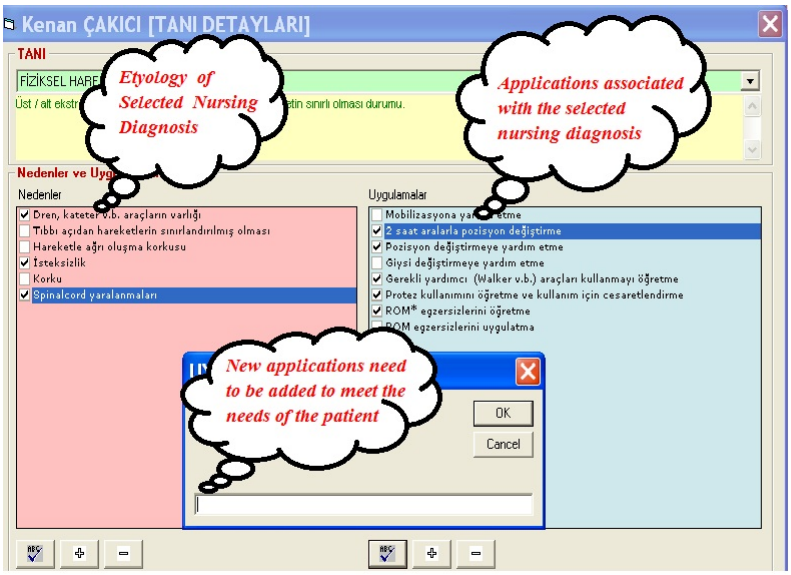
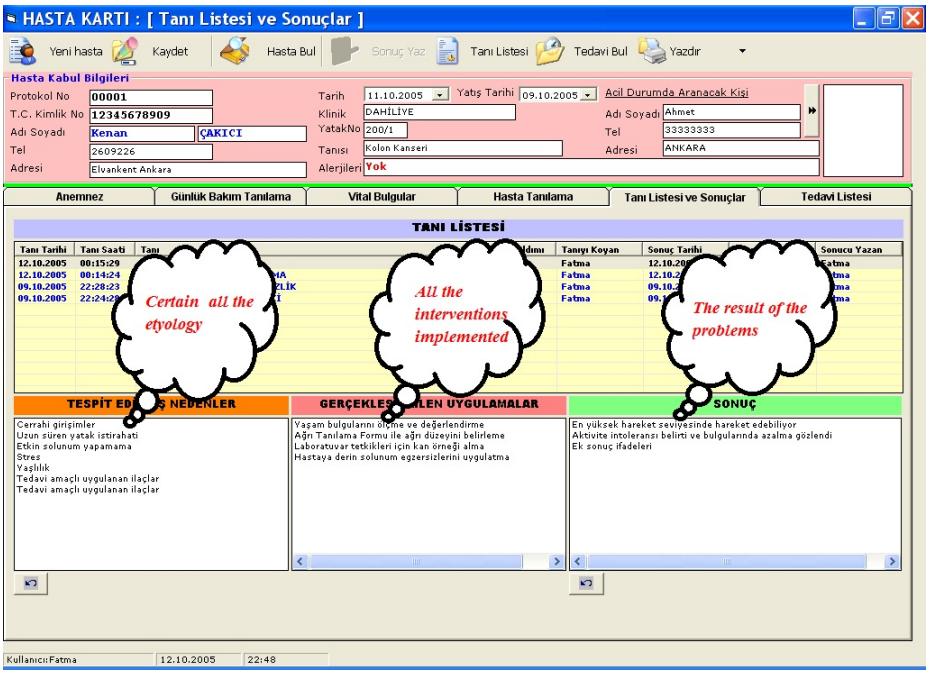


Fig 4: Results screen



Although in pain management nonpharmacological procedures are as effective as pharmacological ones, the research conducted by Ay and Alpar (2010) decides that nurses usually prefers pharmacological procedures to alleviate or eradicate patients' pain. For this reason, "the computer software for nursing applications" should include all applications a nurse can utilize to solve a patient's problems. By doing so, a standard construction for patient care can be established (Fig 3).

Using standard care plans decreases the time needed to create a new care plan for each patient and instead of subjective expressions, objective expressions extensively can be used to describe patient situations (Ting-Ting & Pi-Chen, 2004; Ay (a), 2008).

But, each individual is unique and different, so a standard care is not the case here and the registration system will be used must let the nursing care to be personalized (Fig 3). Patient care plans saved in computers can be updated and registered in a short time so causing a minimum data loss (Fig 3).

We knew that lots of important nursing information is not saved in paper-based documents. Correct identification and application of correct initiatives towards patient problems are as important as the right assessment of the problems itself. Assessment is both an end and a beginning. Correct assessment and registration of it, is important in any case if the problem at hand is not solved or for the other problems' detection. The electronic system which will be utilized must ease the assessment stage and its registration and must have a flexible construction for the new assessment results (Fig 4).

Even though employing and saving electronic nursing care plans are easy, as a precaution for any technical malfunctions leading out to a data loss, the plans should be printed out and stored as a paper version in every patient's documents folder. Via the used electronics registration system, all the applied initiatives should be printed out in the same format of patient care plan (Fig 5).

Results

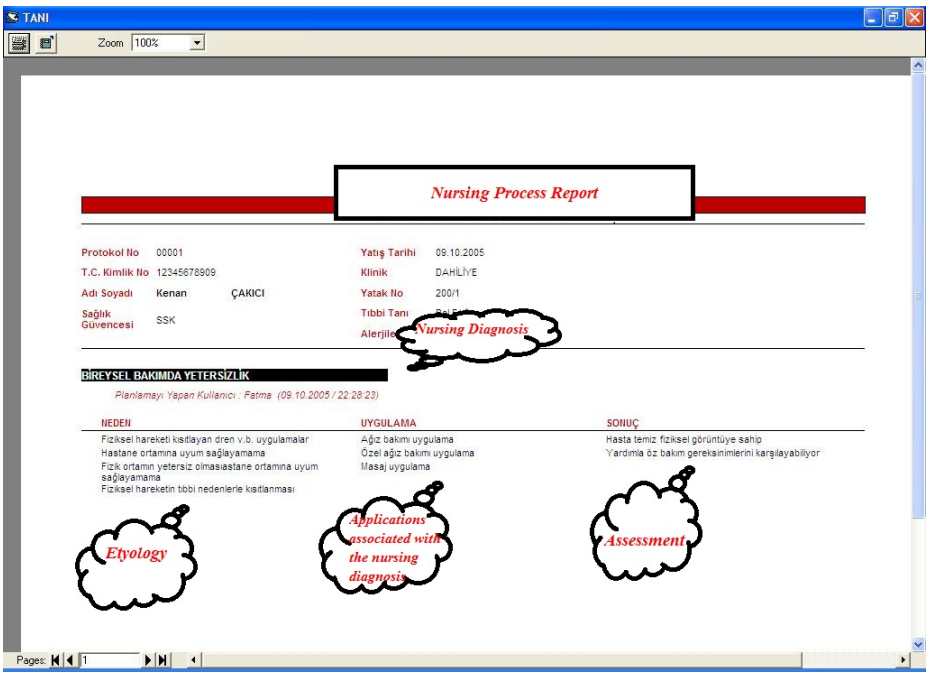
In all different fields of nursing, computer usage increases the quality of given service. It's observed that computer usage increases the nurses' active participation to care plan's development, the number of prepared plans and the frequency of follow-ups of plans (Savaşçı, 2001). All these increase the reliability and

accurateness of care plans at the end causing an improved nursing service. An increased accurateness paves the way for time savings together with more consistent and continuous nursing care plans. This increases the quality of given service (Waldo, 2003 Erdil, Uğurbaş, Albayrak, 2010).

Registered care makes all these possible: getting information of care plans designated for each individual and its outcomes; continuous assessment of care plan for each patient; creation of a database to generally assess patient care altogether; establishing communication between nurses guarantees the continuousness of the given care; to be able to get the desired outcome makes it possible to design a specific intervention for each patient. Besides, recording nursing care plans are needed for legal grounds and also for pricing issues. The computer software which is used to improve patient care quality must have qualities like being systematic, permanent, enabling diagnoses to be analyzed via discussions and to be systematically assessed, and giving guidance to nursing applications.

Electronic patient registration system used by nurses should make time-saving possible, be easily used with easy menus, save all applications exactly, have warning and alarm systems, display necessary interventions at appropriate times, be a guide for patient care.

Fig 5: Printed patient care plan



Conclusion

In the conditions of Turkey, nurses can work patient-centered by employing electronic registration system in nursing services and especially in creation of care plans. By doing so, negative effect of education level differences of nurses to the care plan preparation process is removed and patients receive a higher quality and more extensive care. Also this helps the development of the habit of record keeping of nurses.

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