A Bedside PC Charting System for Nursing Students using Clinical Care Classification (CCC) System
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Abstract: This study tested a PC based version of the CCC System on students’ performance of charting patient care plans. The application was designed for any PC with Windows and Microsoft Office® programs. The PC based system was tested in a randomized trial with the control group using a type-in text-based only system also mounted on the bedside computer. The results demonstrate that the application is efficient and effective for nursing care charting using the nursing process and capturing patient care information with a language that is standardized and ready for integration with other patient electronic health record (E.H.R) data.

Purpose: The purpose of this project was to develop and evaluate the effectiveness of electronic charting simulation using a bedside personal computer (PC) in the clinical skills lab to document patient care planning. The project included two phases: (1) the development of a software application in Microsoft Access® that uses the Sabacare© Clinical Care Classification (CCC) System to efficiently chart care planning; and (2) the testing and evaluation of nursing students’ electronic charting in the clinical lab using a randomized design for the PC based CCC versus a text-only type-in bedside computer.

Methods: The CCC nursing terminology originally knows as the Home Health Care Classification (HHCC) was developed by Saba and colleagues (1991) and renamed CCC (version 2.0) in 2003. It is based on the conceptual framework of the six steps of the nursing process. The PC version of the CCC was developed by the investigators and a Microsoft Access® programmer during several iterations in phase 1 of the project in order to identify and resolve the screen design issues. Once completed, a final application was prepared for pilot study with students performing in a simulated patient encounter using two actors for two medical conditions. The programs were mounted on laptop PCs with printers at each bedside in a clinical lab.

In phase 2, nursing students were invited to sign up to test and evaluate the project. Students who agreed to participate were invited for two learning sessions. At the first 45 minute session, students completed an informed consent and learned about the study, including the two techniques of electronic charting to be compared. At the second session, students each interviewed two simulated patient actors with conditions (congestive heart failure and pneumonia) and were randomly assigned to chart their encounters using one of two PC electronic care plan charting methods: (a) CCC in Access® or (b) text-only version of a page to type-in care plan. At the end of the simulation sessions each student printed their two care plans and submitted them for evaluation. Each student who completed the evaluation of the electronic care planning system was evaluated using a 7 item instrument developed for the study. All care plans were assessed by the investigators and scored using the Evaluation of Documentation Performance instrument developed for the study, an 8 items of “poor,” “acceptable,” and “comprehensive” ratings. Each measure created a score that was used to compare any differences in (1) student evaluation of the system, (2) length of time to record the care plan following an interview with a simulated patient, and the (3) quality of the students’ care plans using both systems.

Findings: Evaluations of the student care plans in this study demonstrated a significant difference in students who used the PC CCC Microsoft Access® bedside computer. Evaluations of care plans by students who used the data-based CCC were significantly higher than care plans by students who used the text-based system.

Conclusion: The Sabacare© Clinical Care Classification (CCC) (2.0) System is an established nursing terminology that has provided a base of development for numerous patient care information systems in hospitals, homes, and other care settings. Although it needs to be tested further in real clinical environments, this study has clinical implications for nursing informaticists who assist in the development of clinical systems of large enterprise hospital information systems.

References: