Concept Maps in Clinical Settings: Improved Clinical Performance and Effective Patient Care

Part I
What is a Concept Map Care Plan?

A concept map care plan is a creative teaching innovation that can enhance a student’s critical thinking and communication skills in clinical settings (Schuster, 2002a). With a concept map care plan, faculty can “see” whether students understand the clinical patient assignments on the day of care. Concept map care plans are valid and reliable clinical tools that guide students in following the American Nurses’ Association (ANA) Standards of Nursing Care (1998). Students clearly and succinctly visualize priorities and identify relationships in clinical patient data. Students spend less time writing, and faculty members spend less time reading tedious column formatted care plans (Schuster, 2000b).

Faculty and students around the country have responded enthusiastically to this innovation in care planning. They have seen the effects of improved clinical performance and outstanding patient care provided by students as a result of using concept maps to guide and evaluate patient care. Students use concept map care plans to organize patient data, analyze relationships in the data, establish priorities, build on previous knowledge, identify what was not understood, and holistically view a patient’s situation. Concept maps emphasize clinical reasoning, creativity, and individualized patient care (Schuster, 2002a).

Theoretical Basis: Teaching Students to Think Critically and Communicate Effectively

The theoretical basis of concept map care plans evolved from educational foundations and educational psychology (Ausubel, Novak, & Hanesian, 1984; Novak & Gowin, 1984). Concept maps are organized in a schematic graphical hierarchy, and they enable students to demonstrate their understanding of relationships among patient problems. In addition, concept maps facilitate students building new knowledge on pre-existing knowledge and assimilating new concepts by identifying relationships with those concepts already understood. Concept map care plans are a non-linear systematic way to contemplate, identify, and solve patient clinical problems.

Concept mapping promotes critical thinking. The National League for Nursing Accrediting Commission (NLNAC) has defined critical thinking as “the deliberative, non-linear process of collecting, interpreting, analyzing, drawing conclusions about, presenting, and evaluating information that is both factually and belief based” (National League for Nursing Accrediting Commission [NLNAC], 2000). Concept maps are non-linear, analytical tools used by students to formulate clinical judgments. Students develop concept maps based on assessment of actual clinical data. Students focus on actual problems they have identified after gathering patient data. They organize clinical judgments prior to beginning clinical care of patients and prepare an organized plan of nursing care. Concept map care plans help students to recognize relationships between medical and nursing diagnoses, assessment data, and treatments.

Student nurses must learn to use communication interventions to help patients and families overcome stress, adjust to the unalterable, and attain patient outcomes. In addition, they must learn to communicate within professional relationships (Schuster, 2000b). Students carry concept map care plans in their pockets, and they use them to communicate with patients, faculty, and staff. Nurse-patient communication interventions have been delineated for psychosocial nursing diagnoses (Schuster, 2002b). During clinical, both students and faculty make notations directly on the concept map care plans and update plans continuously throughout the clinical day. Prior to administering medications, students and faculty communicate by discussing and visualizing relationships between types of medications, symptoms, and laboratory data. In addition, concept map care plans facilitate accurate and complete documentation, which can be difficult for students to learn. The concept map care plan serves as a documentation guide, and everything on the map must be documented on flow charts or progress notes.

Relationships Between the ANA Social Policy Statement, Standards of Care, and Concept Map Care Plans

Concept map care plans enable students to focus on human responses to health states, reflecting the focus of nursing practice as specified by the ANA Social Policy Statement (1995). The reason the patient requires health care is centrally located on the map, and each nursing diagnosis and human response flows outward like spokes on a wheel.

Students demonstrate the ability to follow the ANA Standards of Nursing Care (1998) through developing and using concept map care plans. Improved clinical patient outcomes and improved student nursing care performance results when nursing students implement standards of nursing patient care.
**Standard 1 – Collection of health data.** Students must collect patient profile data pertinent to the clinical setting prior to developing the concept map care plan. In addition, types of patient data collected vary with the learning objectives for the clinical day, the level of student abilities, the amount of time the student spends with the patient, and the number of patients in the student assignment. Students can only be held responsible and accountable for what they have learned to assess. Students continuously update maps as new assessment data is obtained, analyzed, and integrated into the plan of care throughout the clinical day.

**Standard 2 – Analysis of data to determine nursing diagnoses.** Diagraming a concept map promotes critical analysis of patient data and deduction of nursing diagnoses. After analyzing patient data that have been collected, students make a list of key problems. Then, students begin by stating the reason the patient is seeking health care in the center of the page. Next, they list the major problems they have identified from the assessment data in the boxes around the central reason for health care. A template of a concept map is shown in Figure 1.

**Figure 1. Concept Map Template**

Problems are supported with clinical patient data, including abnormal physical assessment findings, treatments, medications, intravenous solutions, abnormal diagnostic and laboratory tests, medical history, pain, and psychosocial and spiritual problems. Students must also identify key assessments that are related to the reason for health care and list them in the central box. If the student does not know where patient data should be placed on the map, they should put it off to the side of the map and ask faculty for guidance in data analysis (see Figure 1). Next, students draw lines between related diagnostic problems to show that they recognize meaningful associations between diagnoses. The map becomes covered with lines, and students soon come to realize that everything is related. In this way, they can develop an understanding of the concept of holistic patient care. Students also number nursing diagnoses in order of priority. To finish the diagram, students label each problem with a box available for the nursing diagnosis (see Figure 1).

**Standard 3 – Identification of expected patient outcomes.** Students must identify goals and outcomes that are individualized to the patient. Students write general goal statements and specific measurable behavioral outcome objectives for the day of care for each nursing diagnosis (see Figure 2).

**Standard 4 – Development of a plan of care with interventions to attain outcomes.** Students will list goals, outcomes, and interventions in concept map care plans. For each nursing diagnosis, students first develop a goal and the patient's individualized outcomes. In addition, nursing-specific interventions to attain objectives are listed. Students include ongoing physical assessments, monitoring equipment, laboratory reports that will be monitored, treatments and medications to be administered, and communication interventions that are specific to the patient. The template shown in Figure 2 includes boxes for writing a goal, objectives, and interventions for a single nursing diagnosis. Prior to implementation of patient care, students should use as many templates as needed to list all goals, objectives, and interventions for each nursing diagnosis.

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**Figure 2. Template of Goals, Outcomes, Interventions, and Evaluation**

<table>
<thead>
<tr>
<th>Problem #</th>
<th>General Goal:</th>
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<tbody>
<tr>
<td>Behavioral Outcome Objective(s): The patient will......(do what, say what, or have physical evidence).....on the day of care.</td>
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<th>Nursing Nutrition Interventions</th>
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<th>Patient Evaluation of Responses</th>
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Summarize impressions of patient progress toward outcomes.

Standard 5 – Implementation of nursing interventions. The nurse implements interventions using the concept map plan of care. As each intervention is performed in the clinical setting, the intervention is checked off the list. Students can easily track what they’ve done and what needs to be done throughout the clinical day.

Standard 6 – Evaluation of patient progress toward attainment of outcomes. Evaluation of patient responses is also shown in Figure 2. Students record documentation of physical and emotional patient data as responses to nursing interventions. Last, they record documentation of impressions towards outcomes.

Part 2 of this article will appear in the January 2004 issue of Dean’s Notes, and will focus on the reliability and validity of concept map care plans.

References

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NSNA: We Make the Path by Walking It

Plan now to attend the 52nd Annual Convention of the National Student Nurses’ Association (NSNA) in Nashville, TN, from March 31 through April 4, 2004! NSNA invites you to attend its 52nd Annual Convention at the Gaylord Opryland Resort and Convention Center. The theme is NSNA: We Make the Path by Walking It. Be a part of this exciting event. Network with colleagues from all over the country, hear outstanding speakers, learn about the latest issues and nursing trends, develop your leadership skills, participate in the House of Delegates, and much more!

Kicking off the convention is the Keynote Address by Barbara Blakeney, president of the American Nurses Association, and an expert in public health practice, and policy and leadership development. Prior to her role as director of health services for the homeless with the Boston Public Health Commission, Barbara was the principal public health nurse for homeless services and addiction services at the Division of Public Health, Department of Health and Hospitals, in Boston. She is the recipient of numerous awards and was honored by Boston Women’s Magazine as one of the 100 women whose work has contributed to the betterment of Boston.

Plenary Sessions
Two plenary sessions will provide up-to-date information on issues facing the nursing profession today. On Thursday, April 1, the National League for Nursing (NLN), New York, NY, will sponsor “Students Rights and Responsibilities: A Socratic Dialogue.” On Friday, April 2, Dr. Marilyn Chow, senior vice president for patient care services, California Division for Kaiser Permanente and program director for the Robert Wood Johnson Executive Nurse Fellows Program, will speak on “Setting an Example: Leadership from the Bedside to the Boardroom.”

Focus Sessions
Focus session topics will include impaired practice, financial management for your future, nursing and the environment, healthy heart living, adolescent health, obesity, disaster training, pain, end-of-life, and much more! Each session is repeated for your convenience.

NCLEX – Review Course
NSNA sponsors this 9-hour mini-review course for a nominal fee.

Awards Ceremony
NSNA will honor its special contest winners, and the Foundation of the National Student Nurses’ Association (FNSNA) will pay tribute to scholarship sponsors and recipients at the annual Awards Ceremony on Thursday, April 1st. The Spirit of Nursing Award winner is also honored during the ceremony. The Awards Ceremony is followed by a reception sponsored by the U.S. Army Recruiting Command, Army Nurse Corps. All convention registrants are invited to attend.

Exhibits
The exhibits are always an exciting part of the NSNA Convention. Plan your future today by networking with hospitals, agencies, schools of nursing, publishers, and more!

Project Showcase
NSNA members (students and faculty) are invited to showcase their achievements by displaying projects in the Exhibit Hall. A special exposition area will be set up for projects related to Community Health, Legislation and Education, Breakthrough to Nursing, Membership, Image, and Newsletters. All award-winning projects will also be displayed. Exhibit your chapter’s best!

For more information, e-mail NSNA@NSNA.org

Once you have finished with this newsletter, please pass it along to share with a colleague or friend.
NSO Sponsors Contest

For the past several years, the Nurses Service Organization (NSO), the nation’s leading provider of insurance services to nurses, has sponsored a contest in which three nursing students have won an all-expense paid trip to the National Student Nurses’ Association (NSNA) Annual Convention.

It has been such a huge success that NSO is once again offering three lucky nursing students the chance to attend this year’s NSNA Annual Convention in Nashville, TN, on March 31-April 4, 2004, at NSO’s expense!

Interested students can enter the contest directly online at www.nso.com through February 16, 2004. NSO will then randomly select three names from all entries received. The three winning nursing students will receive airfare, hotel accommodations, paid registration fee, and $250 in spending money – courtesy of NSO!

With your support, one of your students could be a winner!

If you have any questions regarding the contest, please contact Dan Veneziale, Marketing Professional, at 215-293-1212.