Nursing Diagnosis: State of the Art

Paper Presented
October 28, 2004
Bern, Switzerland

By
Marjory Gordon, R. N. Ph.D., FA.A.N.
Professor Emeritus, Boston College
School of Nursing
Chestnut Hill, Massachusetts

About 30 years ago nurses began to acknowledge that they make important clinical judgments and they recognized the need to identify and name the conditions they identify and treat. This recognition has totally changed the practice of nursing in many countries. There has been a transition in the way we talk about our practice and the way we think about our practice.

Rather than rushing in with *emotional support* we now stop to make a differential diagnosis between fear and anxiety. Rather than saying, *needs teaching*, we diagnose a knowledge deficit or a motivational problem: perhaps even a conflict regarding the prescribed treatment. Some patients need teaching and some patients do not----the latter may need to deal with an underlying problem such as, denial or low motivation. Instead of an immediate response of *needs suctioning*, identifying the problem as ineffective airway clearance, causes more than suctioning to come to mind. It prompts one to think why does the patient have this problem? Thick secretions? Need for increased fluids? Ineffective coughing? Or finally, need for assistance in bringing up the secretions---suctioning? Identifying the underlying problem allows a focused intervention. This, in turn, increases the probability of reaching the nursing outcome of *clear airway*.

Transition to a Nursing Model for Practice

Nursing practice has changed. In the area of judgment nurses used to be taught to say *appears to be bleeding*. (Another was *appears to be dead*!) Only physician's made diagnostic judgments. Today, we say that diagnostic, therapeutic and ethical judgment is within the nurse's professional role. There has been a transition from a medical model for practice to a nursing model that encourages a holistic approach to individuals, families, and communities. Yet there is still a lack of value attached to the importance of nursing judgments.

Language for Describing Nursing Practice. What is needed is a language that nurses can use to describe the conditions that they treat and the outcomes that result from their interventions. This is a concern in every country. The response of the International Council of Nurses (ICN), located in your country, was to establish a project on International Classifications for Nursing Practice (ICNP). This project focuses on collecting terms for diagnoses and interventions developed by various countries. Their concern is "If we cannot name it, we cannot control it, finance it, research it, teach it, or put it into public policy" (ICN, 1996).

Regional groups have been created to assist with the implementation of the taxonomies. Your group is the ACENDIO. In Japan it is the Japanese Society for Nursing Diagnosis. One of the groups in North America is the NANDA-NIC-NOC Alliance. Since 1973 United States and Canadian nurses have been working on the development of nursing diagnoses. Currently NANDA International, based in North America, has identified 172 nursing diagnoses (NANDA International, 2004). These and additional diagnoses may be seen in **Table 1.**

The Center for Classification in Iowa has identified 330 outcomes (Moorhead, et. al., 2004) and 514 interventions (Dochterman & Bulechek, 2004). Each of these 1,016 terms is developed as concepts that have definitions and defining characteristics. This has contributed greatly to the visibility of nursing's contribution to health care. Authors have suggested the diagnosis-intervention-outcome linkages for the diagnoses (Johnson, et. al., 2001). **Table 2** contains an example.

Factors Influencing Diagnostic Category/Concept Development

There are a number of factors that will influence the *future* work of NANDA, ACENDIO, JSNDA, and other groups within countries or regions. These are five that are important:

1) **Changes in the health care delivery system**. There is a shift from hospital to ambulatory and community care whenever possible. These changes include day-surgery and early discharge leading to decrease in length of stay. It will be important to study the diagnoses that occur frequently in community settings. For example, we haven't developed the diagnoses basic to health teaching, such as what facilitates learning, comprehension, and application of health care knowledge. Problems in these areas impact on the health management activities of individuals', families', and communities'. We haven't found ways to help people modify their behavior that would produce a lasting change in health practices. Is this because we haven't really got a grasp on the problems and facilitating factors?
2) **Demographic changes in our patient populations**. In most countries there is an aging population. Future efforts have to go into looking at the applicability of our diagnostic categories for this population. What are the high risk conditions? Are they identified? One I have been working on is the concept of support system deficit, both affective and instrumental. Is lack of support systems one reason for depression in the aged?

   Home care is another area of increased emphasis because of changes in the health care delivery system and the aging of the population. What are the problems characteristic of this population? We may have identified some. In a small study using 100 home health care nurses the three most frequently occurring diagnoses in their practice were self care deficit, knowledge deficit, and activity tolerance. Have we developed state of the art interventions for these conditions? There is interesting work to be done!

3) **Nursing Science Development.** We need to continue the development of nursing science with a focus on first level concepts or middle range theory (knowledge for practice). The expectation is that nursing science will produce knowledge to solve problems---knowledge that can be used to solve the health problems encountered in practice. Valid and reliable diagnosis-intervention-outcome linkages are the building blocks of nursing science. Thus, these need to be viewed as basic concepts and developed as such. Given the social mandate of nursing in society--- and the obligations that come from that mandate---can we expect less from clinical nursing science? Using diagnostic concepts in clinical reasoning and judgment is very different than just labeling-----that is picking problems from a book that lists diseases and associated nursing diagnoses. We need to value thinking. Studies of clinical reasoning and decision-making in nursing are needed. All these developments can make evidenced-based practice a reality.

   Identifying the highly prevalent conditions that are high treatment priority will aid in identifying priorities for research and development. In a project working toward this end the following diagnoses were identified based on data from 1300 nurses in adult and neonatal intensive care, rehabilitation nursing and home care nursing: self care deficit, activity intolerance, knowledge deficit, impaired mobility, fear, anxiety, sleep pattern disturbance, impaired skin integrity, pain

   These are the conditions that deserve our attention during implementation of diagnosis. Nurses become overwhelmed with 172 terms to learn. Select the ten most frequently seen in your unit and focus on these during the implementation phase.

4) **Computerization of clinical records.** The one thing that will shape practice in this century is the computerization of clinical records. If we have to document our interventions under medical diagnoses, an essential component of nursing will be invisible. It is important that nursing diagnoses, interventions and outcomes useful in your practice be included when computerized information systems are being implemented in your hospitals and other healthcare agencies. Software for the electronic patient record is currently available. A number of countries have adopted the Standard Nomenclature of Medicine taxonomy of medical and nursing diagnoses (SNOMED). This includes all the nursing diagnoses and interventions previously mentioned.
   A related trend is the use of diagnostic related groups (DRGs). These are groups of medical diagnoses used to determine costs of care. Nursing's holistic and individualized focus may not permit identification of commonly, co-occurring nursing diagnoses with any degree of accuracy.

   The idea of basing practice on scientific studies is discussed as evidenced based practice. Guidelines for diagnosis and treatment are being developed. In some cases joint nursing and medical teams are doing this. They are called guidelines for practice and are based on the best evidence available. Actually they contain the content that will be needed for computerization of nursing diagnoses and interventions. These are available on the Internet.

5) **Teaching clinical judgment and common diagnostic categories**. Current theory suggests that the diagnostic process involves analytical (logical) and non-analytical (intuitive) processes. Analytical reasoning uses inductive and deductive thinking and is sometimes referred to as logical, critical, or rational thinking. Understanding is gained from analysis and interpretation of information. Non-analytical reasoning includes intuition and other processes that bring an immediate comprehension of a situation.

Clinical Judgment Skills

Accountability for making sound judgments and wise decisions is a mark of a professional in any field. Therefore, we must give consideration to how diagnostic and therapeutic judgments are made—at least how we think they are made.

Clinical reasoning, judgment, and critical thinking have *not* been a major focus of study in nursing until recently. It has been assumed that the new graduate would pick up judgment skills in an apprenticeship manner. It was thought that all they needed was the clinical knowledge used in judgment!

Today, are clinical judgment skills just caught in an apprenticeship manner? Or can they be taught? Consider the brief overview of clinical reasoning and judgment before answering those questions.

Analytical Reasoning And Non-Analytical Reasoning. The diagnostic process involves 1) reasoning that is analytical or (logical) and 2) non-analytical or intuitive pattern- recognition. *Analytical reasoning* is sometimes referred to as logical, critical, or rational thinking. Understanding of the patient's situation or problem is gained from analysis and interpretation of assessment information.

Novices are limited to the more analytical processes. Thus, if reasoning is taught in the nursing curriculum, probably analytical reasoning and problem solving strategies are the focus.

Non-analytical processes include intuition and other processes that bring an *immediate* understanding of a situation. We have all experienced the *inferential leap! Or sudden insight!*

Those nurses that we call our *clinical nurse expert*s have worked with a particular population of patients for probably at least 10 years and have an in-depth clinical knowledge and experience. They seem to use a variety of cognitive processes appropriate to the situation and their knowledge base. Generally, it is assumed that intuition cannot be taught. But, its development can be facilitated by certain educational practices.

The degree to which analysis or intuition predominates in clinical reasoning is probably influenced by the

1) amount of experience that the diagnostician has acquired,
2) situational requirements, such as a life-threatening or non-life threatening problem, and 3) the difficulty of a particular diagnostic task. (Difficulty varies with the type of data available, the nurse's familiarity with the diagnostic problem, and the structured/unstructured nature of a diagnostic situation.)

Analytical Reasoning. Let us consider the analytical reasoning process in more detail. We become novices again as we start using something new. Analytic reasoning in any knowledge domain has three components:

1) Information collection (assessment),
2) Information clustering and interpretation (hypothesis generation and testing), and
3) Formulating and naming the problem.

Analytical reasoning is the diagnostic process that appears in textbooks and that is applicable to teaching students who have a limited knowledge and experience base Some have described the diagnostic process as detective work. Others have said that it is like putting together a puzzle.

Information collection (assessment). An important component of the diagnostic process is information collection. The functional health patterns developed in the late 1970s provide a useful format for collecting and organizing information in an admission history or in assessing the level-of-functioning (Axis 4 DSM) in psychiatric nursing diagnosis. **Table 3** contains definitions of the 11 patterns and **Table 4** the NANDA and other diagnoses grouped under the health patterns. You may notice that many of the terms in **Table 1** are similar to the functional health patterns in **Table 3**. That is because in 1998, NANDA asked to use the health patterns and adapted the typology for purposes of classification.

Functional health pattern framework for assessment.

This format provides a holistic, clinically useful way of obtaining information for nursing diagnosis. The 11 health patterns can be used to assess patients with any disease or mental disorder, at any age, and at any stage of health or illness. The health patterns are widely used in all clinical specialties and have been translated into at least 10 major languages (Gordon, 2002).

It has been suggested to me that the Activity-Exercise Pattern is too large. There are 37 diagnoses in this health pattern within about 13 concept-areas. Perhaps there is a need to make this into 2 health patterns. The suggestion is interesting; this pattern has the largest number of diagnoses. One could conclude that nurses view activity-exercise pattern as an important area of practice; they have identified

many diagnoses in this area.
In my opinion certain diagnoses within this pattern accepted by NANDA are not *nursing* diagnoses. The slide lists these diagnoses. Nurses may be able to identify the condition but refer it to a physician for treatment. Nursing diagnoses do not need to be referred to a physician; professional nurses are responsible for their treatment. As I said, not every one agrees with this opinion about these diagnoses.
Human functioning and quality of life are traditional concerns of nurses in most countries. For example nurses' primary responsibility is not the status of the muscle cells of the heart in chronic congestive heart failure. Rather, it is the ability of the patient with *decreased activity tolerance* to shop for food, cook, and manage the home after discharge from the hospital. From a functional health patterns perspective, the goal or outcome is optimal level of functioning.
A second reason that this assessment format is widely used is that it is easily learned. Most pattern-areas are what nurses always assessed but placed under the medical categories.
Assessment guides (questions for the history/physical) are available for assessing the infant and young child, the adult, family, community, and critical care (Gordon, 2002). The format has to be adapted to the situation. Full assessment is not appropriate in an ICU or Labor and Delivery; a screening assessment can be done. There are four contextual factors that can be kept in mind to individualize the assessment and to bring to mind the norms that apply in the particular situation. These are listed in this slide.

Hypothesis generation-divergent thinking (generating possibilities).

During information collection one has to be thinking about the meaning of the data? Now the question arises: how is <u>meaning</u> derived from assessment information through clinical reasoning? Or, stated differently, how do we explain assessment findings?
Research has demonstrated that human beings think of *possibilities* to explain the information. This is done as the information is collected (not back at the desk, *after* it is collected). (Nursing and medical students used to be taught to wait and make judgments only after all the assessment was completed.) Human beings do not do this. Similar to the detective nurses pursue "leads" or possibilities. Branching questions are asked based on the possibility being considered.
Some information is more important in influencing judgment than other information. A cue to the problem that is nearly always present when a diagnosis is present is called a *diagnostic cue*. It is a sign or symptom that is a critical indicator or criterion for a diagnosis (Gordon, 1994). In contrast information that is not always *present* when the diagnosis is present is called a *supporting cue*.
Nurses use divergent thinking and their clinical knowledge of likelihood's to generate what is referred to in the literature as *diagnostic hypotheses (diagnostic possibilities)*. These possibilities represent the meaning of the cues. They direct further cue search.
Hypothesis testing-convergent thinking (checking-out possibilities). Novices probably raise diagnostic hypotheses by searching memory for the specific *rule*s for a diagnosis. For example, observing redness over the coccyx the novice thinks of *risk for skin breakdown* and looks for supporting cues (risk factors) that com-

prise the rules for making this diagnosis. For example, don't call it a bird if it doesn't have feathers and wings.

A sufficient number of defining characteristics of the diagnosis are checked-out to establish a confidence level sufficient for making the diagnosis. The novice is very deliberate in thinking about this. When encountering a patient that is crying, they will be slow. It will take a longer time to consider other possibilities that he/she should investigate and the *rules* for diagnosis.

Crying is a cue that is common to many diagnoses. The novice has not had enough experience to know the likelihood of a particular diagnosis in a situation thus they may need to check-out all the possibilities they have generated. This is why we go from the simple to the complex in selecting clinical experiences for students. As one medical educator said: "Any clinical situation selected for instructional purposes will be difficult for students . . . .cases and experiences should be graded in difficulty." (Elstein and Schwarz, 2002, p.733). Nursing and medical students do not have a knowledge base that has been tried out in practice nor sufficient, experiential information on the likelihood of diagnoses or diagnosis-intervention-outcome links. Have you ever noticed how long it takes a medical student to do an admission assessment when they are just beginners? All day!

The expert nurse, when moved to another nursing specialty, will also encounter difficulties. They may have to revert to the analytic strategies used by the novice.

Consider a model for clinical judgment that you could use in talking to students or staff:

Look, a distant speck in the sky moving toward us! (2 cues)
It's a Bird,
It's a Plane,
It's Superman!

These are three hypotheses or possibilities to explain the distant speck (cues). Which is most likely? Remember, focus on common conditions. They occur commonly!

Now, there is a need to search for cues to confirm or reject these possibilities. If it is a bird, it must have feathers and wings. Notice, it is necessary to know the diagnostic criteria for "bird" in order to check-out this possibility. This represents the hypothesis-based search for cues that confirm or reject a diagnostic possibility. Similarly, if it is activity intolerance, there has to be a report of dyspnea or observation of shortness of breath, fatigue, and, depending on the medical condition, there may be heart rate changes and delay in returning to baseline. These are the diagnostic cues that *have to be present* if you use the term, activity intolerance. What cues have to be present to make the diagnosis of anxiety?

Non-Analytical Judgment: Intuition and Pattern Recognition. The expert approaches diagnostic and therapeutic judgment in a more flexible manner than the novice; they have a number of strategies they can employ, depending on the situation. An easy problem may be solved by pattern recognition. This involves matching the assessment information to an exemplar or prototype stored in memory.

It is thought that human beings store cases (case based reasoning) problems, and schema as discrete concepts. These are available to the expert through direct, automatic retrieval using their intuition, those intuitive leaps! They behave with

speed, efficiency, and accuracy. How do they do this? During their study and work experience the expert develops links between reliable clinical features of a problem and a diagnostic category. These links are restructured and refined through reflective thinking about their practice and stored in memory (Elstein and Schwarz, 2002).

On the other hand, the expert solves difficult cases by generating and testing hypotheses (possibilities) using the analytical model previously discussed. Of course "whether a problem is easy or difficult is a function of the knowledge and experience of the clinician." (Elstein and Schwarz, 2002, p.730).

Findings about the non-analytical or intuitive nature of expert reasoning suggest that studies are needed on experts' *organization and retrieval of memories*. These studies would add to the body of knowledge on clinical judgment and may reveal the effect of knowledge organization on retrieval of information.

Visibility of Nursing and Documentation

The endpoint of all the diagnostic, therapeutic, and ethical judgments within nursing process is communication. Documentation of clinical judgments in a plan of care does two things:

1) communicates judgments to other professionals for coordination of care,
2) communicates patient's responses to treatment, and 3) gives some visibility to nursing's contribution to health care.

When nurses communicate through documentation what they are educated and licensed to do, they increase their visibility as health care providers.

The International Council of Nurses, Task Force on Classification Systems for Nursing Practice (1994, p.2), has said, "Without a language nursing is invisible in health care systems and its value and importance go unrecognized and un-rewarded." If the value and importance of our care to patients and families is not visible in documentation, how can a director of nursing ask for more staffing and resources? There has to be precise and accurate documentation of nursing diagnoses, interventions, and outcomes. Then nursing directors can point to patient records and use the data to argue for staffing and resources.

Summary

Do nurses diagnose? This is an important question in our history. Diagnostic judgment has a long, but choppy, history in nursing. Although Florence Nightingale diagnosed and treated nutritional deficits and other problems exhibited by the Crimean War casualties, this aspect of her many contributions was not integrated into the concept of professional nursing in its early stages. It is only recently that courses on clinical judgment were included in the curriculum and integrated into clinical practice.

Recent studies demonstrate that increased mortality and complications are influenced by professional nurse-staffing and educational level of the nurses. Why? Could it be that a major factor is the clinical judgment of well-educated, professional nurses? Could it be that naming conditions increases attention to the problems and interventions?

Educators will need to help students organize their long-term memory so that organization of nursing knowledge meets the needs for retrieval in clinical practice. This combined with an emphasis on *critical and reflective thinking* should place students on the road to nursing expertise in diagnostic judgment and therapeutic decision-making.

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