Problem Solving in Perioperative Nursing

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Problem-solving, which incorporates the decision-making process, is an integral component of all aspects of perioperative nursing practice. The scrub nurse planning how to drape a challenging plastics procedure, the educator developing an orientation program, the administrator choosing surgical equipment and the nurse identifying a clinically-based problem to research will all use problem-solving and decision-making in their deliberations.

Awareness of both the problems and the processes used to resolve them vary with the individual's experience and knowledge, the situation, and the frequency with which the individual is accustomed to making decisions and solving problems.

Problem - A doubtful or difficult question or task (Sykes, 1982)
Problem Solving - The process by which we search for a correct solution to a problem
Decision Making - Choosing among a number of possible alternatives, which may involve making trade-offs among the values given to the different alternatives (Baumann & Deber, 1989).

The simplistic definition of decision-making may be misleading; the process is actually a sequence of events in which a problem is identified, alternatives are generated, the environment is evaluated, values are considered and the decision is implemented.

The Role of Values in Decision-Making

Values have been described as the basis for all decisions, as they underlie all actions and decisions. What you consider important and relevant is determined by your values, and what is considered important and relevant influences what you observe, as well as how it is observed (Ford, Trygstad-Durland & Nelms, 1979). So not only do values colour observations, they also determine what is observed. Values therefore influence one's concept of reality.

Values change throughout your lifespan. They are learned through observation of others and through personal experience within a social context. This context varies with new friends, new jobs, education and personal experiences such as illness.

The importance of values in decision-making is that you are aware of the values on which you base your decisions. Making a decision unaware of underlying values is comparable being uninformed, and you risk that your decision may not be consistent with your values. Have you ever asked yourself "Why am I doing this?" Chances are your decision was inconsistent with your values, or you were unaware of how the decision and resulting activity were related to your values (Ford, Trygstad-Durland & Nelms, 1979).

Applying Values

1. Identification
2. Clarification
3. Priority-setting

There are three activities when values are applied within the decision-making process. The first is to identify your values, which is a very personal exercise. Factors to be considered include your culture and ethnic group, when you were born, geographical location, family values, economic status, religion, occupation, education, life goals, etc.

The second activity is to clarify your values - think about what the statements you identified as your values really mean to you. For example, do your religious beliefs mean that you will have difficulty working with certain groups of patients? Or is your professional commitment to the provision of safe patient care more important than staying within the overtime budget, justifying your decision to call in that extra nurse?

The last activity is to assign priorities to your values. This is done in the context of each decision - on some days, it may be volunteering to continue with patient care rather than being relieved to go home, which is something we all value!

Decision-Making Processes

Lancaster and Lancaster (1982) describe two decision-making processes: the normative view and the descriptive view. The normative decision-making model was developed by philosopher Adam Smith, and was based on two assumptions:
1. That the objective of all decisions is to maximize satisfaction; and,
2. That in any situation calling for a decision, all possible choices and the consequences and potential outcome of each are known.

The decision-maker in this model must have complete knowledge of the topic, so that all possible choices, consequences and outcomes can be considered. This requirement for complete information is the major limitation of this process - a seemingly impossible situation.

The descriptive decision-making model, developed by Herbert Simon, assumes that decision-makers are rational people who make decisions on the basis of incomplete information. They are "satisfiers" who tend to look for an acceptable solution, rather than "optimizers" who seek the best possible solution. The descriptive decision making process recognizes that it is not always possible to try to secure complete information due to limitations of time, money or people. Rather, the decision-maker is a person who logically solves problems on the basis of known or easily retrievable information (Lancaster & Lancaster, 1982).

Given the complexities of perioperative nursing, and the constraints of time and resources which often operate in a given situation, the descriptive decision-making model has definite appeal and utility. As the five steps in this process are reviewed, remember that the process is not rigid, nor necessarily sequential.

Descriptive Model
5 stages

a) Recognizing the problem
b) Gathering and processing information
c) Evaluating alternatives
d) Deciding, selecting or choosing
e) Implementing: Post-decision activities

a) Recognizing the problem

Although it seems simplistic to say so, before a decision can be made, the problem has to be identified. This can be a complex activity because it involves people's perceptions of a situation, which will often differ, and because people's viewpoints are based on their values, as previously mentioned. It is helpful to state the problem as objectively and clearly as possible.

When assessing a problem, it is important to decide the priority level for the problem, and to evaluate its potential for being solved. Joseph Reitz (in Lancaster & Lancaster, 1982) suggested three ways of choosing priorities:
1. Problems are addressed in the order in which they occur;
2. Problems that can be dealt with immediately are given priority over more complex, time-consuming ones; and,
3. Crisis or emergency problems are given priority over all others.

b) Gathering and Processing Information

In the second stage of problem-solving, the decision-maker performs two separate activities: gathering information about the situation and identifying alternatives. The search for information can be detailed and prolonged, or quick and to the point. However, there are usually two aspects of any search for information - an internal as well as an external component (Lancaster & Lancaster 1982).

The internal search involves examining your own memory for information such as prior experience, knowledge, policies or references you have read or used in the past. The external search involves using others experience and knowledge, using resources and references such as standards or articles, or hiring a consultant. An external search for information can be extensive, and could incorporate surveying other OR's to determine their practices, or

having a computer search performed.

The search for information is affected by:

1. The perceived value and cost of the search - is the problem worth the time required to have a complete search performed?
2. The capabilities of the individual conducting the search - will an extensive search frustrate or assist the decision-maker?
3. Variables related to the specific situation, such as the urgency and type of problem, or the availability of information.

Throughout this stage, the decision-maker processes the available information to identify possible alternatives. This occurs as the information is being gathered - as you read something or talk to someone, an idea may occur - "what if we tried this?". It is important to jot down these ideas or thoughts as they occur for use during the next stage.

c) Evaluating Alternatives

The third stage of decision-making is to evaluate all possible alternatives to the situation, including the consequences of each. A simple yet effective way to do this is to list all possible outcomes of each alternative, determine whether each will have a positive or negative effect, and assign a value to each outcome.

The use of three major criteria has been suggested for analyzing alternative solutions to problems: desirability, probability and personal risk taking (Ford et al, 1979). It is important to remember that each of these criteria will assume different weights, dependent on the problem or situation.

Desirability is a measure of the individual's preference for a given alternative. Desirability is influenced by many factors, including the situation itself, constraints such as time, resources or policies, and the individual's values, knowledge, skills or past experiences.

Probability is the likelihood that the alternative will be successfully implemented and will solve the problem. The individual must subjectively rate each alternative according to these two factors - can it be implemented, and will it solve the problem.

Personal risk taking involves evaluating the hazards of a selected alternative in relation to the benefits of that alternative for the individual. There are three aspects to personal risk taking: physical, emotional and social risk.

Evaluating physical risk includes the consideration of any threats to body integrity for either yourself or your patient. In today's environment, it is important to consider whether any alternative has the potential to cause harm through the introduction of toxic substances. In addition, some nurses consider the impact of a product on the environment as a very important aspect of any evaluation.

Emotional risk results from a threat to one's psychological being or self-concept. If an alternative threatens or will change your self-concept, then emotional risk is a factor which needs to be recognized and evaluated.

Social risk includes threats to your role in society. For a perioperative nurse, this could include relationships with patients, co-workers, superiors, subordinates or physicians. If an alternative will change relationships with others, the social risk could be perceived as being too great for the benefit received.

Values play an important part in the evaluation of alternatives. If a nurse with a strong commitment to upholding perioperative nursing standards is faced with an alternative which will improve standards but will be unpopular with co-workers, the consideration of social risk will better enable the nurse to establish priorities.

d) Deciding, Selecting or Choosing

The selection of a solution depends on factors such as the number of alternatives available, the quality of those alternatives, and the desirability, probability and risks involved. In many situations, there may be only one logical solution, given the available time, resources and environment.

The selection becomes difficult when there is not one alternative which stands heads and shoulders above all others. Then the ground work done when evaluating the alternatives becomes invaluable and the choice can be based on the consideration of the all factors just discussed.

e) Implementing: Post-Decision Activities

Obviously, when a decision has been made, the work is often just beginning. In this final phase of the decision-making process, the decision-maker will use knowledge and skills to implement the solution. The effective use of change theory and communication skills in this process will often be critical factors in its success (Kubasiewicz, 1987). Other post-decision activities which must be developed include monitoring and evaluation.

Novice and Expert Nurses
The Role of Peer Consultation

Sound decision-making skills involve an integration of knowledge of highly sophisticated technological equipment and a thorough understanding of the complex patient problems that are present (Baumann & Bourbonnais, 1983). In a study which compared the planning by expert and novice nurses in drug administration cases of varying complexity, it was found that experts generated more alternative actions, were more specific in evaluating alternative actions, and developed better plans than did novices (Corcoran, 1986).

Experienced nurses are often able to spread their search very quickly over a wide range of possibilities, activating, accepting or rejecting a complex series of related diagnostic categories, indicating a highly complex system of relationships between cues and categories held in their nursing knowledge base. Novice nurses are often unable to bring to consideration such a wide variety of factors. As stated by Prescott, Dennis and Jacox (1987), "The experienced nurses not only knew more about problems and related alternative courses of action than did the inexperienced nurses, but they also possessed more savvy about how to give input".

The major implication of this information is that we must continue to use our expert perioperative nurses to nurture the novices. Novice nurses have no experience with the situations in which they are expected to make decisions. Exposure to the clinical area is essential - there seems to be no other way of obtaining this experience other than actually being there and working with others more experienced in the field (Baumann & Bourbonnais, 1983). The "buddy systems" and preceptor programs found in most OR orientation programs provide this invaluable experience for the novice nurse.

Out of this arises the concept of peer consultation - discussing a particular situation with nursing colleagues to gain their perspectives and experiences. This does not only refer to fellow perioperative nurses, but nurses on other units. In today's rapidly changing, technologically advanced environment, no one person can be an expert in all things. Taking the plunge and asking a nursing colleague for assistance in problem-solving, and making yourself available for return consultations, can only enhance patient care. Don't forget to use your networks - call up the nurses you met at the last OR conference you attended, or a nurse with whom you may have attended a course.

Research Utilization

The utilization of research in nursing practice refers in general to the product or findings of research. It is a specific use of knowledge which has been proven through the research process, and provides a wealth of information to use throughout the problem solving process. Hunt (1981) outlined five reasons why nurses do not utilize research:

Why Nurses Do Not Use Research Findings

1. They do not know about them
2. They do not understand them
3. They do not believe them
4. They do not know how to
5. They are not allowed to

(Hunt, 1981)

1. They do not know about them.

The results of research are not always readily available, because many researchers do not publish their findings, and most theses and dissertations are only found in the library of the university where the research was conducted.

2. They do not understand them.

When researchers do publish their findings, they are often written in a style and language which is very difficult to decipher. These reports may be directed towards other researchers, who understand all the terms and concepts. The Schantz and Lindeman article (1982) on how to read research provides an excellent introduction to the research writing style.

3. They do not believe them.

One important research activity is to test the assumptions on which we base our practice. Some familiar examples of this could be the length of time for our surgical scrub or the effectiveness of drapes at preventing strike-through. However, it is difficult to change established practice even in the light of factual evidence as shown by the research done by Cruse & Foord (1973) about the preoperative removal of hair, and how long it has taken to adjust practice.

4. They do not know how to.

Although this is related to the second reason, the

significant consideration here is that although nurses may understand the research report, they may not identify its significance for their nursing practice. They may wonder whether practice should be changed based on the findings of one research study, or what to do about areas of perioperative nursing such as with preoperative educational interventions in which there are whole fields of research being explored. Good et al (1987) have provided a guide which assists in using research-based knowledge in clinical practice. To promote the utilization of research, there needs to be closer collaboration between researchers and nurses delivering the care, so that research may be driven by the needs of nursing practice.

5. They are not allowed to.

The utilization of research findings may be impeded if change is required to the status quo, especially if policies and procedures are involved. Therefore, it is vital that nurse leaders and educators set the climate, and support and promote the utilization of research findings in all aspects of nursing practice.

Marram van Servellen and Stetler (1986) suggest that there are three important steps which must be conducted prior to the implementation of any findings:

1. Validation - a critique must be done of the research to determine whether or not the research design has scientific merit.

2. Comparative evaluation - what is the feasibility and desirability of implementing the findings? Does it "fit" the particular needs of your OR?

3. Decision-making - What type of utilization will there be, if any? Will the information be tucked away for future reference, or will the findings be implemented into your practice?

Standards

Standards guide nursing practice and provide for quality patient care (O.R.N.A.C., 1986). They also provide a benchmark against which we can measure or evaluate nursing practice. As professionals, nurses are required to maintain certain levels of competence to ensure the public of safe nursing care.

Standards (O.R.N.A.C., 1986, 1988) play a very important role in perioperative problem-solving. They are a source of valuable information which can be referenced when a problem arises, and can in themselves generate a problem situation - what do you do when you become aware that your practice does not measure up to an accepted standard?

A Model for Problem- Solving in Perioperative Nursing

In an attempt to pull together the topic of problem-solving in perioperative nursing, a model (see Figure 1) has been developed which identifies two routes into the problem-solving process: either through knowledge, or through a specific situation.

The knowledge driven side of the model is perhaps the less familiar. What happens when you become aware of information, whether it be research findings, recently published standards, or current practice in another institution? We should pause to compare the information with present practice, and determine whether that practice is appropriate. If the practice is appropriate, that is the time to give yourself a pat on the back. If it is not appropriate, you must determine whether or not it is feasible to change. Sometimes you may deliberately decide the time or environment is not conducive to change and decide not to take action. Using change theory (Kubasiewicz, 1987) will assist with this process.

The situation driven side of the model is perhaps what people have in mind when they use the phrase problem-solving. A problem is identified, information is gathered, and there is a "statement of findings" which assists in deciding whether or not a problem exists.

The paths of the two sides of the model merge with the assessment of the feasibility of change. If you decide to take action, then follow the decision-making process discussed earlier. The semicircular arrow on the right integrates the concept of feedback and evaluation into the model.

Summary

This article has discussed aspects of problem-solving in perioperative nursing. Once a problem has been identified, a decision-making process is used to resolve the situation. The differences in decision-making abilities in novice and expert nurses were discussed, and the value of peer consultation introduced. Research utilization and practice standards were presented both as a means of identifying problems and as a source of alternative solutions to a problem. Finally, a model was developed which provides a framework identifying two sources of problems in perioperative nursing - those that are knowledge driven, and those that are situation driven. (See Figure 1). ■

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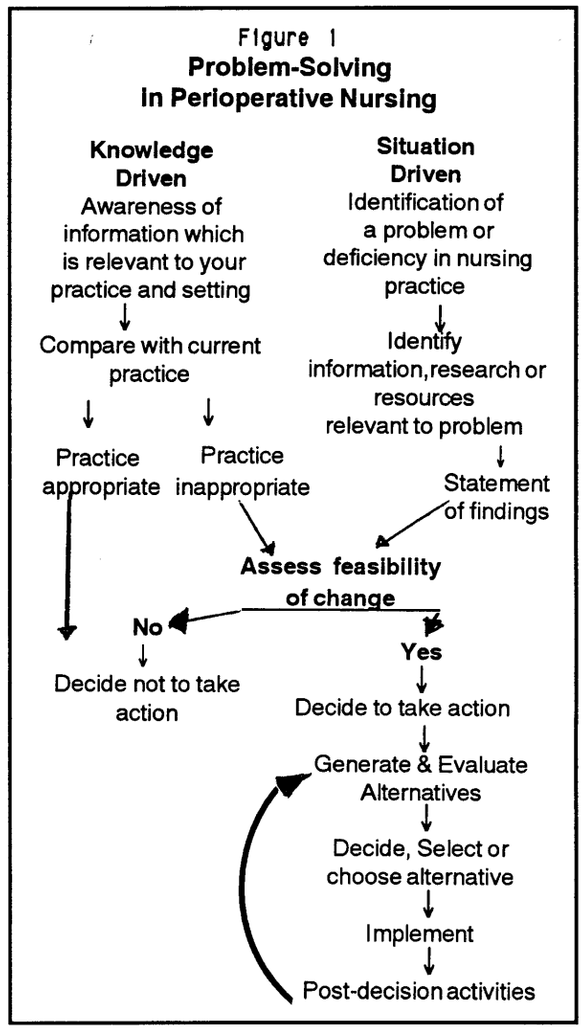
Figure 1
Problem-Solving In Perioperative Nursing



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