Power Thinking for the Perioperative Nurse

Activity Number:  ρϥϧϥ

Content

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INTRODUCTION
You are the nurse who is responsible and accountable for the patient before, during and after surgery. In 1978, AORN’s Project 25 defined the role of the perioperative nurse. Not only did the scope of practice change but it provided opportunity for the perioperative nurse to fully utilize the nursing process which is the basis for all of nursing practice. Throughout this process the nurse functions both independently and interdependently. She works as a member of the team collaborating with other healthcare professionals to ensure that the patient has the highest quality of care. The perioperative nurse practices in a variety of settings; the surgical suite, ambulatory surgery centers, endoscopy suites, laser centers, interventional radiology departments and physician offices.

Historically, nurses have always been responsible and accountable to the patient. From Florence Nightingale (1820-1910) who observed the ravages of war and understood the extremely poor healthcare conditions that contributed to morbidity and mortality during the Crimean War until today, where the Theory of Human Caring developed by Jean Watson, a current nursing theorist, is used to promote health and prevent illness we have seen the practice of perioperative nursing expanding and evolving into a scientifically sound entity.

The nursing process which is the framework for practice includes assessment of the patient, establishing a nursing diagnosis, developing a plan of care, implementing that plan and then evaluating the effectiveness of that plan. This framework for practice is outlined in the AORN Standards of Perioperative Nursing. This conceptual model focuses on the patient and has four domains. These include patient safety, patient physiological responses to operative and other invasive procedures, patient and designated support person(s) behavioral responses to operative and other invasive procedures and the health system in which patient care is delivered. The goal is to assist the patient with achieving a level of wellness equal to or greater than when they entered the healthcare setting.
CRITICAL THINKING AND PATIENT CARE

Because of the impact of technology and the increased insightfulness of patients coupled with consumer demand for accountability and responsibility, the role of the perioperative nurse has emerged as one of an autonomous partner in healthcare delivery. More importantly, the perioperative nurse must be particularly adept at critical thinking in order to solve a variety of problems faced on a daily basis and to make decisions, and establish priorities in the clinical setting. As we have already discussed, the framework or philosophy for solving patient problems is called the nursing process and it reflects not only theory and practical skill but the nurse’s philosophical beliefs about the value of human beings, the human mind and general perioperative nursing. The cornerstones of this framework are the cultural and social mores to which the nurse subscribes; and critical thinking is intrinsic to this framework.

It is important to emphasize that the framework for solving patient problems is called the nursing process; and critical thinking is inherent to the nursing process. Critical thinking is an active process that involves the perioperative nurse prioritizing data, choosing which aspects are crucial and then assessing and categorizing them in order to make efficient and sound decisions. If this process were performed in a random manner, patient outcomes would suffer. Thus, it is clear that critical thinking is a crucial skill in the administration of safe and competent perioperative nursing care.
TERMS
Before proceeding further it will be useful to distinguish between the terms, ‘critical thinking,’ ‘problem solving,’ ‘the nursing process’ and ‘decision making.’ Johnson & Webber note that critical thinking as a term has been used over the years interchangeably with concepts such as decision making, nursing process, problem solving, evaluation, critical analysis, judgement, reflection and reasoning.\(^4\) Thus, it is not surprising that, frequently in nursing literature, these terms are used interchangeably which may often result in confusion for the reader. Although these concepts and their methodological processes are related, they are distinct and they can be studied independently. Thus, it is logical to wonder how a definition might be determined for such a broad and overlapping term and if this definition can possibly cover its many conceptual uses.

WHAT IS CRITICAL THINKING?
Often, critical thinking is characterized as a type of reasonable and reflective thoughts that are aimed at deciding what to believe or what to do.\(^5\) The American Philosophical Association describes it as, “the process of purposeful, self-regulatory judgment which gives reasoned consideration to evidence, contexts, conceptualizations, methods, and criteria”.\(^6\) Bandman and Bandman define critical thinking as the, “rational examination of ideas, inferences, assumptions, principles, arguments, conclusions, issues, statements, beliefs and actions”.\(^7\) Lipe and Beasley explain it as being “goal directed; it is thinking with a purpose”.\(^8\)

This list of crisscrossing definitions can be confounding but, according to Johnson and Webber, it may be that the Socratic method (399 BCE) of investigative inquiry can help clarify this list. They theorize that Socrates knew that critical thinking is underpinned by asking goal directed questions such as: ‘who, what, when, where, why, define, clarify, describe, relate, explain, justify and what if’.\(^9\) These questions are important because critical thinking is contextual in nature; whatever crosses our minds does so because something (what), somewhere (where), at some time (when), sparked the thought. Thus, how something is thought about is influenced by the context (when and where) of that thought. This process of thinking is dynamic and it affects what happens relative to the issue or problem in question.

Johnson and Webber hypothesize that by juxtaposing the Socratic method to the many definitions of critical thinking, similar methodologies begin to emerge such as rational examination, monitored thinking, focusing and checking. Thus, they think that it is possible to begin to develop a clearer understanding of what critical thinking is and to identify specific steps in critical thinking.
A study in the Journal of Nursing Education describes seven key critical thinking steps which include Johnson and Webber’s findings. The process begins with gathering facts and organizing them by separating pertinent data from irrelevant data, then grouping related data together in order to see patterns. Finally, the patterns are subjected to the following 7 steps:¹⁰

**Seven Steps in Critical Thinking**

- **Analyze**: this includes trying to understand the relationship between different aspects of the problem. For example, if you are working with a patient complaining of significant pain, you should differentiate the level of pain and the normal level for this patient.
- **Apply standards**: this refers to using established recommended practices or professional guidelines such as the AORN Standards of Practice, Joint Commission, AAMI or ANSI.
- **Discriminate**: this refers to prioritizing essential functions over nonessential functions.
- **Gather information**: this takes into account data and information that is acquired during patient assessment including any deviations from normal. Related information is grouped together in order to identify warning signals, symptoms and trends.
- **Draw conclusions or inferences**: this refers to interpretation of the data and information. For example, say a patient demonstrates moderate changes in vital signs, with a decrease in urinary output and pale skin. Using available data and nursing instinct, it could be inferred that the patient has active blood loss which would be an appropriate inference for the given data.¹¹
- **Predict**: based on the observations, experience and conclusions, you indicate in advance what will take place. This might be the expected outcome.
- **Transform knowledge into successful solutions**: the data and information gathered should be compared with past experience and nursing theories to help ensure accuracy in clinical practice.

**Test Your Knowledge**

1. The global trotting, Andrew Speaker, underwent lung surgery to remove drug-resistant tuberculosis. As the circulating nurse in the operating room your first concern was safety of the patient and staff.

   a. In this situation what information did you analyze in order to draw conclusions regarding nursing interventions?

   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
2. What past experiences and nursing theory did you use to make decisions about interventions?

________________________________________________________

3. Anna Davis, a 24-year-old graduate student, has been hospitalized on the orthopaedic unit of the hospital after a car accident in which she received life-threatening internal injuries and many serious fractures. She is starting to have intermittent abdominal pain.

a. What information would you illicit from the patient?

________________________________________________________

b. Based on the information, what conclusions would you draw?

________________________________________________________

c. What action would you take?

________________________________________________________

Perioperative nursing practice is evidence-based and this requires the use of research-based interventions in order to ensure appropriate, consistent and quality care. Selecting from the Nursing Interventions Classification (NIC) list for an intervention applicable to the clinical setting will help ensure an appropriate research-based choice. The next step is to distinguish problem solving from the nursing process.

**PROBLEM SOLVING AND THE NURSING PROCESS**

Burns and Grove define problem solving as the systematic identification of a problem, determination of goals relating to the problem, identification and possible approaches to achieve these goals, implementation of selected approaches, and evaluation of goal achievement.\\(^{12}\)

Lipe and Beasley characterize problem solving as a systematic approach resulting in the formation of solutions which involves the identification of the root problem through analysis.\\(^{13}\) Notably, problem solving is used in various situations, such as, deciding which is the best route to take to work, deciding where to live or, clinically, how to position a patient with a fractured hip.
Table 1: Comparison of the Problem Solving Process and Nursing Process

<table>
<thead>
<tr>
<th>Problem Solving Process</th>
<th>Nursing Process</th>
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<tbody>
<tr>
<td>Encounter Problem</td>
<td>Assess</td>
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<tr>
<td>Collect data</td>
<td>Diagnosis</td>
</tr>
<tr>
<td>Analyze data to specific problem</td>
<td>Outcome identification</td>
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<tr>
<td>Determine plan of action to resolve problem</td>
<td>Plan</td>
</tr>
<tr>
<td>Execute action plan</td>
<td>Implement</td>
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<tr>
<td>Evaluate plan for effectiveness in problem</td>
<td>Evaluate</td>
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<td>resolution</td>
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Scott suggests that the most recognizable tool for clinical problem solving is the nursing process. Scott identifies this process as a five step mechanism beginning with the gathering of data, proceeding through assessment, diagnosis, planning and ending with evaluating the success of the nursing care provided. Burns and Grove conceive of the nursing process as a subset of the problem solving process. The steps in the nursing process similar to Scott’s:

**Nursing Process:**

- **Assessment:** This involves the collection and interpretation of data to be used in developing a nursing diagnosis. This would include an assessment of the nurse’s patients with a focus on the problems that caused their hospital admissions. For example if they were admitted for myocardial infarction, they should be checked for chest pain or dyspnea.

- **Diagnosis:** This step is the process of identifying and classifying data collection during assessment in order to develop the plan of care. Accepted nursing diagnosis came from the North American Nursing Diagnosis Association International (NANDA-I). A nursing diagnosis sets the stage for determining patient outcomes. The Association of periOperative Registered Nurses in the Perioperative Nursing Data Sets have identified desired patient outcomes.

- **Outcome identification:** Once the nursing diagnosis is determined the perioperative nurse identifies the desired outcome. The outcome is measureable and provides direction for outlining a plan of care.

- **Plan:** After collecting and interpreting the data, identifying the nursing diagnosis and desired outcome a plan of care is developed and communicated to the team.
• **Implementation:** Put the plan into action, in other words, perform the nursing activities and interventions and respond with critical thinking. This step is where the standards, guidelines and best practices are implemented.

• **Evaluation:** This entails checking, observing and appraising the results of interventions taken during the implementation phase.

• **Modification:** Both the problem solving process and the nursing process are cyclical. If the process is not effective, then all of the steps must be reexamined and modified and a new course of action is implemented.

All theorists agree that both problem solving and the nursing process involve the identification of a root problem through analysis. Burns and Grove refer to this as, “assessment in the nursing process,” which involves the collection and interpretation of data for the development of the nursing diagnosis. The diagnosis, then, guides the remaining steps of the nursing process, just as the step of defining the problem directs the remaining steps of the problem solving process. The planning step in the nursing process is the same as the problem solving process. Both processes involved implementation, or putting a plan into action, an evaluation or determination of the effectiveness of the process. And the problem solving process and the nursing process are cyclic. If the process is not effective, all steps should be reviewed and revised and the process implemented.

**Test Your Knowledge:**

**Situation:** A 90-year-old female is scheduled for fixation of a fractured hip. She has been transferred from a nearby nursing home where her mobility is limited. The patient record indicates she has chronic bladder incontinence. One nursing diagnosis that you have considered is “risk for impaired skin integrity.”

1. **What factors have you taken into consideration to arrive at this nursing diagnosis?**

2. **Based on the assessment of this patient what interventions are you planning for the patient during surgery?**
To summarize, the nursing process is problem solving applied to nursing and is used in developing a plan of care for individual patients and patient needs. Moreover, the nursing process can be applied to solve problems relating to issues that affect patients as well as staff, such as cost containment, productivity and quality of care.\(^7\)

**Test Your Knowledge:** *(Correct answers listed below)*

1. **In the process of analyzing a problem the nurse should:**
   
   A. *Focus on the symptom of the problem*
   
   ☐ Yes ☐ No
   
   *NO is the correct answer. If you focus on the symptom, the original problem will still exist.*

   B. *Focus on the cause of the problem*
   
   ☐ Yes ☐ No
   
   *NO is the correct answer. If you focus on the symptom, the original problem will still exist.*

2. **For the patient who has cancer, is having a radical neck resection, and refuses to have a blood transfusion, what reasoning might you consider?**
   
   a. *Religious objections?*
   
   *Yes. Jehovah Witnesses do not accept whole blood. They do not accept any of the four primary components of blood: red blood cells, platelets, plasma, and white blood cells. Their belief is based upon Biblical scripture – blood removed from the body should not be returned to the body.*

   b. *Fear of blood borne diseases?*
   
   *Yes. There have been reported cases where blood transfusions have carried Hepatitis B Virus, Human Immunodeficiency Virus (HIV), Hepatitis C Virus, Human T-Cell Lymphotrophic Virus (HTLV-II), Cytomegalovirus (CMV), and bacterial infections.*

   c. *Prior negative experience with transfusions?*
   
   *Yes. Examples of some negative experiences are: hemolytic or anaphylactic shock, known blood compatibility issues, or immunodulation.*

   d. *Culturally distasteful?*
   
   *Yes. Many cultures have various beliefs regarding blood transfusions. It is the responsibility of the perioperative nurse to provide the best therapy acceptable to the patient.*
Problem Solving and Decision Making

Although problem solving and decision-making are often viewed as synonymous, the concepts are very different when examined closely. Decision-making involves choosing between various options and it is a critical step in the problem solving process. An example of a decision making tool would be a clinical pathway or algorithm for a patient having a colon resection. The nursing staff follows the clinical pathway, which is outlined for the patient upon admission and guides the care until discharge. The algorithm is a decision tree that guides the care of the patient. The nurse is required to make either a “yes” or “no” response and the response made provides alternatives for care.

Not all decision making is related to a problem; for example, choosing which clothes to wear to work or what to have for lunch is a decision. This is more a matter of preference and does not necessarily require proceeding through a rigorous problem solving process in order to make these decisions. Problem solving, on the other hand, involves assessment and analysis of a problem. It is a rigorous process that leads to the formulation and implementation of solutions.

Many factors influence decision-making and includes emotions, values and perceptions. All of these contribute to the choices we make for ourselves as well as our patients. The most effective decision maker is a proactive individual who is self-confident and comfortable with the decisions they make. Making competent, sound decisions in perioperative patient care is one of the most critical processes a nurse must cultivate.

Test Your Knowledge:

1. Is the process for decision making the same as the problem-solving process?

   □ Yes  □ No

   *NO is the correct answer. It is not the same. Decision making is one step in the problem-solving process but it is not the same process. Not all decisions are related to problem-solving*

2. Your operating room has a written protocol to administer antibiotic therapy 1 hour prior to surgery as a prophylaxis measure to prevent surgical site infection. What patients might you make the decision to NOT give the preoperative antibiotic?

   a. Immunosuppressed patient

   □ Yes  □ No

   *NO is the correct answer. Unlikely, but the morbidity and cost of even infrequent infections can justify the use of prophylaxis.*
b. For clean procedures
☐ Yes  ☐ No

*NO is the correct answer. The efficacy of modifying prophylactic regimens for patients infected with HIV has not been adequately evaluated. Therefore, they should receive prophylaxis.*

c. Laparoscopic procedures
☐ Yes  ☐ No

*NO is the correct answer. There are no studies that recommend antibiotic prophylaxis for laparoscopic procedures. However, pending availability of new data, it is recommended that the same procedure for "open techniques" be followed.*

**CRITICAL THINKING DISPOSITIONS**

Critical thinking dispositions are personal attributes or habits of mind associated with one’s consistent internal motivation to engage problems and make decisions using critical thinking.

Critical thinking is a way of acting and thinking, such as, asking creative questions, frequently asking “why?” and seeking reasons to defend a position. Critical thinkers are open minded, they seriously consider alternate points of view and are always looking for alternative explanations, positions, or arguments. They are willing to change a position when the evidence is sufficient to make them do so. Moreover, critical thinkers question habits and conventions, they are able to recognize assumptions and biases and they base decisions on sound reasoning. Most theorists agree that effective critical thinkers are observant and able to organize and to prioritize data. Typically, they have sound judgment and intuition, and they are able to use past experiences as well as current information to analyze situations and formulate solutions.

Critical thinking in nursing is important for safe practice and nurses must be willing to ask the difficult as well as the obvious questions inherent in practice. Question posing must be approached with intellectual humility which requires willingness to admit to one’s own areas of ignorance while remaining open minded and tolerant of others’ views. Moreover, it requires self vigilance to the possibility of one’s’ own assumptions or bias influencing the process. Lipe and Beasley conceive a sophisticated critical thinker as able to:\n
- Raise vital questions and problems, formulating them clearly and precisely.
- Gather and assess relevant information, and effectively interpret it.
• Come to well reasoned conclusions and solutions, testing them against relevant criteria and standards.
• Think open mindedly within alternative systems of thought, recognizing and assessing, as necessary, their assumptions implications and practical consequences.
• Communicate effectively with others in forming solutions to complex problems.

Critical thinking might be viewed as the careful, deliberate verification of whether we should accept, reject or suspend judgment about the truth of a claim or of any recommendation to act in a certain way. Critical thinking dispositions might be summarized as self directed, well-organized, rigorously examined, and self-corrective thinking.

CRITICAL THINKING AND INTELLECTUAL STANDARDS
All critical thinking theorists agree that intellectual standards are essential in order to elevate the quality of thinking. The standards include intellectual rigor, truthfulness, order, and conscious control. The indiscriminate thinker cannot recognize when he or she fails to consider relevant evidence and reaches unjustifiable conclusions or confused ideas. Scattered or non-analytical thinking can be filled with bias, preconceived ideas or incorrect information. Thus, critical thinking requires thinking according to standards. The following nine intellectual standards can be used as a framework for developing relevant goal-directed questions as in the Socratic Method.¹⁹

Intellectual Standards of Critical Thinking and Possible Questions
• **Clarity:** Could you give an example of your idea; or elaborate further; or illustrate your meaning?
• **Precision:** Could you be more specific or exact about your idea; could you give more details?
• **Accuracy:** What evidence do you have to support this position; is the evidence verifiable; is the evidence from a reliable source?
• **Relevance:** Could you explain how your example relates to the current issue; how does it bear on the issue at hand; how does it help us with the current issue?
• **Depth:** What factors make this issue so complex; what are some of the difficulties of this issue; what components of the issue do we need to deal with?
• **Breadth:** What other points of view should we consider; should we consider another perspective; should we look at this in further ways?
Following the standards of critical thinking is essential in communicating information in a clear and logical way in complex clinical situations; moreover, they are essential in giving clear and precise directions to staff. Because communication is essential to the development of an effective nurse patient relationship, following the standards has a positive impact in ensuring optimal patient care and positive patient outcomes.

**THE PRACTICE OF CRITICAL THINKING**

Key to understanding the significance of critical thinking in perioperative nursing is in understanding the significance of critical thinking in learning and in practice. There are two parts in this process, the first occurs in the class room when students initially encounter and then come to understand the basic ideas, principles, concepts and theories that are inherent in nursing content. This is a process of integration. The second occurs when the perioperative nurse effectively uses those ideas, principles, and theories as they become relevant in clinical practice. This is a process of application. Together, integration and application set us on the path of effective critical thinking.

**POWER THINKING IS A PROCESS**

Power thinking is purposeful thinking and is goal-directed requiring focus. First, pertinent data must be gathered and then organized. It is useful to divide the bigger problems into smaller parts and to take on the easiest things first. Reviews should be made periodically to be certain that no data is missing; the goal is certainty. The thinker should pause periodically and check to see if he or she is still on course because interruptions and the necessities of multitasking can interfere with focus.
**Scenario:** A 14 year old male patient is scheduled for a laparoscopic hernia repair. You note on the chart that the patient is HIV positive. The thinking process starts with the purpose which is to protect the surgical team, safety for the patient and confidentiality.

Everyone has assumptions and biases. To minimize negative impact, other team members should be informed and their opinions sought. The perioperative nurse should listen carefully with an open mind. Examine the assumptions and assess validity and accuracy. Is the patient homosexual, a drug user, or infected as a result of previous blood transfusions? Inaccurate assumptions can result in faulty reasoning with undesirable consequences.

All reasoning has implications and consequences. If the nurse thinks the patient has HIV due to his sexual preference and allows bias to influence decision making, the nurse may not fully follow through on proper positioning or surgical site prepping guidelines as she is hesitant to come into contact with the patient. Faulty reasoning may result from using impaired logic or by personal bias.

Organizing data, facts and experiences involves putting related information together. Analyze the data, noting deviations from the normal. For example, the HIV patient is 14 years old and has been in progressive treatment for HIV since he was 6 years old. At that time he was involved in a serious auto accident and received multiple units of blood.
Critical Power Thinkers use only evidence offered. It is important to make inferences and judgments. Instincts and bias should be checked. The perioperative nurse must gather and give meaning to all of the data or poor judgment will result.

Data should be compared to concepts and theories. Ensure that thinking is accurate. All of the data is essential in order to determine strategies that reflect transfer of theory knowledge to the care of this patient. This includes positioning and prepping.

If thinking has been logical and based on accurate data, the perioperative nurse as well as other members of the surgical team can implement an appropriate care plan free from bias and illogical assumptions.

CHALLENGES TO CRITICAL THINKING
There are a number of common challenges to critical thinking; often these are referred to as fallacies. Appealing to authority is a common challenge to critical thinking. Consider the pressures brought to bear by management who are pressuring for faster turn over in order to add more patient procedures to a given OR.

Another common challenge resulting in a logical thinking is called the appeal to tradition. This is the argument that “we have always done it this way”. This stifles creative thinking and ignores innovative strategies. Careful considerations of various options and input from others as well as various perspectives are the hallmarks of critical thinking.

One of the major deterrents to critical thinking is close mindedness. This individual ignores input from importance sources such as experts, patients, and significant others. The result is stagnant options and the loss of innovative ideas.

The critical thinking process can help perioperative nurses reflect, set priorities, make conclusive decisions, and solve problems about the situations they face daily in clinical practice. Clarity and goal-directed thinking is necessary to understand the concepts and theories of nursing and to develop the skills of a self-directed, disciplined, critical thinker.

USING CRITICAL THINKING SKILLS
The skills for effective critical thinking start with gathering facts, organizing them and separating pertinent data from irrelevant data, then grouping related data together in order to see patterns. The
steps which you will review in the following situations include analysis, application of standards, discriminate, gather information, draw conclusions or inferences, predict and transform knowledge into successful solutions.

Situation: You have just completed aortic surgery for a dissecting aneurysm on a 275-pound patient. While getting ready to transfer to post anesthesia you notice a reddened area on the left outside quadrant of the buttock.

Use your critical thinking skills to outline the following:

1. **Analyze**: Understand the relationship between different aspects of the problem.
2. **Apply standards**: What recommended standards or guidelines should you consider?
3. **Discriminate**: What will be your priorities in determining a course of action?
4. **Gather information**: What did you assess? What deviations from the normal did you find?
5. **Draw conclusions or inferences**: What data have you collected that allows you to make inferences?
6. **Predict**: What will the end result be? Predict in advance.
7. **Transform knowledge into successful solutions**: Use the information you have and compare to past experience and nursing theory to ensure accuracy.

Situation: You have just completed closing the abdomen and the sponge count is not correct. You inform the surgeon who states that there are no sponges left in the abdomen and he finishes closing.

What should you do?

1. Identify the problem.
2. Determine the desired outcome.
3. List the steps to reach the desired outcome.

Situation: Dr. Smith has scheduled a 35-year-old female who has papilloma virus for a laser procedure. It has been proven that the particles found in surgical smoke are a risk factor for the surgeon and staff. Dr. Smith does not want to use the N95 respirator mask, which is recommended for this procedure.

What alternatives should be considered?