



NURSING METHODOLOGY

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**NURSING
METHODOLOGY**

UU No 28 tahun 2014 tentang Hak Cipta

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Cerdas, Bahagia, Mulia, Lintas Generasi.

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Editor :

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Desain Cover :

Dwi Novidiantoko

Sumber :

www.shutterstock.com (u photostock)

Tata Letak :

G.D. Ayu

Proofreader :

Mira Muarifah

Ukuran :

xii, 145 hlm, Uk: 15.5x23 cm

ISBN :

978-623-02-7110-6

Cetakan Pertama :

Agustus 2023

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(Grup Penerbitan CV BUDI UTAMA)

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PREFACE

Nursing Methodology teaching materials are a part of the Basic Nursing course. This course has relevance in allowing you to apply nursing care later because studying this will help you carry out the stages of the nursing process with various existing conditions. In the previous teaching materials, you have studied the concept of nursing practice in the Basic Concepts of Nursing course; of course, you still remember, right? To further deepen your understanding of practicing nursing, you need to study *Nursing Methodology*. In this teaching material, you will learn the following:

1. The concept of critical thinking and decision-making in nursing
2. The concept of the nursing process
3. Comparison of the scientific method and the nursing process as a method of problem-solving
4. Critical thinking in nursing assessment
5. Critical thinking in nursing diagnosis
6. Critical thinking in the nursing care plan
7. Critical thinking in nursing implementation
8. Critical thinking in nursing evaluation
9. Application of the nursing process

In order for you to succeed with studying this teaching material, follow the study instructions as follows:

1. Carefully read the introductory part of this teaching material until you fully understand what, for what, and how to study this teaching material.
2. Scan section by section, and find keywords and words that you think are new. Look for and read the meaning of keywords in the list of difficult words in this teaching material or in the existing dictionary.

3. Capture understanding after understanding the contents of this teaching material through your own understanding and exchange of ideas with other students or lecturers.
4. Apply the principles and steps of the nursing process by using critical thinking skills.
5. Strengthen your understanding through discussions about experiences using the nursing process in small groups or during guidance or tutorials.

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CHAPTER 1

CONCEPTS OF CRITICAL THINKING AND DECISION-MAKING IN NURSING



LEARNING OBJECTIVES

- Comparing the concept of thinking with critical thinking
- Choose the appropriate critical thinking model
- Using core critical thinking skills
- Explain the purpose and why it is necessary to do critical thinking
- Choose several ways to develop clinical thinking skills
- Correlating critical thinking skills and decision making
- Correlating critical thinking and nursing process

A. THINKING AND CRITICAL THINKING

Both thinking and critical thinking are similar activities, but they have different processes. Critical thinking is a process of thinking with a specific purpose to solve a problem. Critical thinking becomes an awareness and reflection of our role and identity in the world in relation to other objects, events, and people. For example, the perspective of nurses toward patients who experience cases of chest pain will be different using each of these efforts. If the nurse uses only thinking efforts, then when the nurse knows the patient complains of pain, the nurse will think that the patient has pain problems and will continue to take action to reduce it. However, if the nurse uses critical thinking, the nurse will try to find various things that will determine the action to be taken, such as asking the cause of the pain and whether the pain radiates to the back area.

Thinking is the interaction of a series of thoughts and perceptions and occurs continuously (Brown, 2015). Mind is

something created by the subject, where the object comes from outside. There are many modes of thought, such as visual, verbal, gesture, imaginative, fantasy, symbolic, mystical, realistic, logical, obsessive, musical, mathematical, and so on. As for perception, the subject is a passive audience, and the subject, in carrying out the thought process, is a more active participant. Critical means efforts to analyze scientifically by revealing existing phenomena by studying and connecting things rationally or believing in something, or being firm in one's own thinking or also the process of searching for meaning (Barros and Jesus, 2021).

Experts have defined critical thinking differently. Black (2020) defined critical thinking as an individual's effort to understand how to think about problems, which is a complex way of thinking about many things, including content, subject, or problem. Individuals, in improving the quality of thinking as a thinker, make efforts to take the structure inherent in their thinking skillfully and apply it as desired by intellectual standards. Slightly different from Black, Potter, and colleagues posit that critical thinking is a process of constant inquiry, a combination of persistence with a willingness to view the unique circumstances of the patient and recognize his or her assumptions as correct and appropriate. This is an open-minded activity and a continuous process (Potter et al., 2019). Likewise, Berman (2018) shows a slightly different definition that someone who does critical thinking activities does not mean full of criticism or has a negative attitude and also does not take information for granted without any effort to evaluate it carefully. Nurses who make critical thinking efforts will check the assumptions, evaluate evidence, and disclose its value and underlying reason for concluding something before drawing such conclusions and making decisions.

Meanwhile, according to Paul and Elder (2020) that critical thinking is the art of thinking to analyze and evaluate thought processes aimed at improving, directing, disciplining, monitoring, and self-correcting. This process requires high-quality standards, effective problem-solving and communication skills, and

commitment to overcoming egocentrism and sociocentrism. A critical thinker has a culture or good habits (Paul and Elder, 2020).

1. Raise problems and related questions and formulate them precisely and clearly.
2. Collect and evaluate related information, using abstract ideas to make interpretations.
3. Make conclusions and solutions to problems that are reasonable and test them against relevant standards.
4. Have an open mind and recognize alternative ways of looking at problems, and have the ability to view and evaluate the assumptions, implications, and consequences of each alternative to existing problems.
5. Communicate effectively with others in the framework of a solution to a complex problem that is formulated.

Of the various definitions of thinking and critical thinking, the main difference between the two terminologies is regarding purpose and control. Thinking refers to every mental activity that occurs in individuals. It can be “mindless,” such as a person daydreaming or doing a routine task like taking a shower every day. Meanwhile, critical thinking refers to efforts to obtain what is expected through good and rational steps in a directed and controlled manner (Alfaro-LeFevre, 2020).

B. CRITICAL THINKING MODELS IN NURSING

The concepts of critical thinking have been developed into models by several experts in the field of nursing. Three examples of models will be described below.

1. The Model from Kataoka-Yahiro and Saylor (Potter et al., 2019)
The ability to think critically nurses will grow with increasing knowledge and experience in carrying out tasks in carrying out nursing care. These experts develop a conceptual framework that includes several concepts in stages from low to high. This critical thinking model can be seen in Figure 1.1

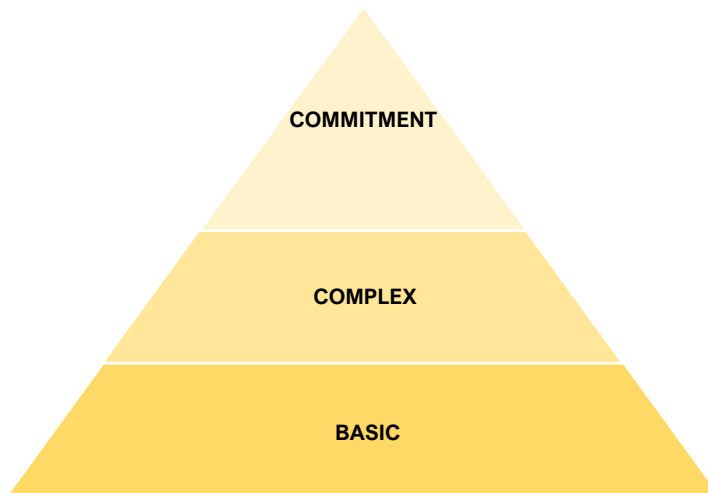


Figure 1.1 The critical thinking model from Kataoka-Yahiro and Saylor (Potter et al., 2019)

a. Basic Critical Thinking

This level is the lowest of the triangle, with individual characteristics task-oriented with a focus on skills to organize and carry out nursing care activities. The characteristics of critical thinking are efforts concentrated and sourced from existing principles. For example, students still need a lot of effort to be able to insert a nasogastric tube. He will really need hospital rules as a reference in taking action. Students will follow the steps of a procedure without learning how to adapt the approach when problems arise or patients have unique needs (For example, the patient has a deviated nasal septum or difficulty swallowing). Students do not have sufficient experience to anticipate how to treat individual patients or adapt procedures when problems arise. At this level, answers to complex problems are considered right or wrong (for example, the nasogastric tube will not advance because it is coiled in the throat), and one solution will usually solve each problem (for example: removing the tube and

starting over). Basic critical thinking, like the example above, is the first step in the development of reasoning. Therefore, a critical thinker at the basic level is still learning to accept various opinions and values from experts.

b. Complex Critical Thinking

Critical thinkers who enter this level begin to rely less on experts. Critical thinkers at this level will learn to analyze data and examine options more independently. The ability to think and take the initiative to look beyond expert opinion begins to increase. As critical thinking skills develop, individuals must learn to consider alternative and possibly even conflict situations. At this level, individuals learn to synthesize knowledge by combining experiences and knowledge about patients to develop new thoughts or ideas. When considering therapy for a patient, be aware that each option has benefits and risks that factor into your choice. Thinking becomes more creative and innovative. At this level, individuals are more willing to consider deviations from standard protocols or procedures and provide more individualized care.

c. Commitment

At this level, the individual anticipates the need to make choices without assistance from others. Individuals accept responsibility for decisions made by themselves. As a nurse, you will do more than consider complicated alternatives that might solve a problem. Individuals choose actions or beliefs based on available alternatives and stick with their own choices. However, sometimes the choice made is to avoid or postpone action.

2. T.H.I.N.K. Model (Rubinfeld and Scheffer, 1999)

This model includes five modes which, when collected, will present a critical thinking process. The modes are Total Recall, Habits, Inquiry, New Ideas, Creativity, and Knowing How You Think. To help us remember the five modes of thinking, every

single letter of each mode is used to represent a mode called THINK. Below will be explained the THINK model.

a. Total Recall

Total recall is an individual's ability to recall facts both where the facts were obtained and also how to find them in memory when needed. Facts in the field of nursing are obtained from various sources such as in class, information from books, information from patients through physical examinations, use of tools, interviews, or information from people who are meaningful to patients. The ability to access this individual knowledge really depends on the memory capacity of the brain. There are several ways you can do to improve your recall ability, including:

- 1) Using pattern. Example: there is the telephone number 0612442088. If written like this, it seems more difficult to remember. If the number is better organized, like, for example, 061-244-2088, it will be easier to remember.
- 2) Make a list of common words and try to remember them.
For example: Make a list: -
Color: yellow, blue, red
Fruit: apples, oranges, mangoes
Transportation: car, ship, plane
- 3) Relate facts to experience. Individuals can easily and quickly remember a fact because it is associated with strong emotions or funny stories. This is called flash-bulb memory, where the brain seems to be taking pictures of the time and place where the memory occurred.

b. Habits

Habits are thought process that is repeated frequently so that it becomes a new nature (second nature). The result of a habit becomes a new way of doing a job. Habitual thought processes allow things to be done without having to experience the thought processes with new methods every time. Example: installing ECG.

However, it is important for individuals to re-evaluate their performance periodically to ensure that they are not taking

inappropriate shortcuts. For example, students should consider whether they are actually looking for hazards at the scene and wearing gloves and goggles or simply reading “scene safety, standard precautions” aloud.

c. Inquiry

Inquiry is a way to examine an important issue or question that requires an answer, and finally, conclusions are reached, and facts are found. The use of inquiry will produce better and more accurate conclusions. Nurses can carry out inquiry-thinking activities through efforts to take action, including:

- 1) Receive information by looking at something
- 2) Getting initial assumptions about a thing
- 3) Identify and realize the limited knowledge you have
- 4) Get various information or data that is close to the main problem
- 5) Make comparisons regarding new information with existing data
- 6) Use open-ended questions
- 7) Find some conclusions
- 8) Validation of the main and supporting ideas to obtain some information

A case example sufficiently illustrates a simple nursing situation where the nurse will use inquiry skills.

At 03.00 in the morning, a nurse named Mr. Carlie noticed the light was still on in the room of a patient named Mr. Denis. The nurse wanted to know more about what was going on and tried to come closer to Mr. Denis’s bedside. The nurse asked good morning and then asked the patient: “Why is the light in your room so bright? Do you need help?” Then the patient said that he was in good condition while looking at the nurse with a smile. However, the nurse tried to check around the patient’s room and saw that there were several tissues to the left of the patient’s bed and noticed that Mr. Denis’s eyes looked red and there was swelling.

The nurse can use inquiry for Mr. Denis to consider the possibility that there are four conclusions that can be made:

1. The patient is fine, it is normal for the client to wake up at that hour, and the patient's eyes are red, possibly because the patient rubs his eyes because of an allergy.
2. The patient is fine but unable to take even a short nap due to boredom, so the eyes look red and swollen.
3. The patient is not feeling well but does not want to talk to anyone about his problems.
4. The patient is not well but does not know to ask for help from others.

The nurse must be able to say with certainty that one of these four conclusions is better than the other. Nurses need to validate their conclusions, using as much information as possible. The role of nurse can ask directly that the patient agrees with the final conclusion that happened to him. In this case, the nurse may ask: "Mr. Denis, you said you are fine, but I noticed your eyes were red and swollen."

To obtain the necessary information, nurses must ask questions and observe the reactions of patients and their surroundings. The nurse needs to analyze the information by looking for existing patterns and determining those that are significant.

d. New Idea and Creativity

This model is a thought process to try new ways that are inversely proportional to the habitual model. Someone who uses this model has characteristics such as respecting differences in one's values, mistakes, ideas, and creativity. This is the basis of nurses in caring for patients.

As an example of how a nurse uses new ideas and creativity when treating her patients, we can study this case.

Levi, a patient who lives in a nursing home, has weak legs, so he has to use assistance to be able to walk using a wheelchair, so every activity he does is carried out on the device. On a daily basis, he hardly said a word even though

the nurses repeated his attempts to communicate with the patients. However, from the appearance of the face, the patient understood the nurse's words.

Many people believe, as well as nurses in general, that sharing with others is a common way of encouraging. But a nurse named Sisil did something a little different. He knelt in front of Levi's wheelchair and put his arm around him. Sisil looked and smiled at Levi and asked him to sing. A moment later, there was a change in Levi, where he was singing. It turned out that his voice was melodious, like a singer who came from Ireland.

From this story, what can we conclude? In general, nurses carry out communication with patients through direct verbal communication. However, in the Sisil example, communication was established directly but through touching and singing, which is almost absent in the literature.

e. Knowing How You Think

Knowing how you think is thinking about a thought or knowledge. In making a thought or knowledge better, it is impossible to happen if someone does not understand how that knowledge or thought begins. It is often easier to describe something in the abstract and relate it to a specific situation than try to draw general conclusions.

3. Expert Thinking Model

Nurses seek to use critical thinking skills in carrying out their services. When nurses start to do it as a nursing profession, they will move from beginner conditions and, at certain times and commitments, will become skilled or experts. According to Benner (1984), there are five levels ranging from novice to expert generalist or specialist nursing skills of a nurse (Potter et al., 2021). This can be seen in Table 1.1

Table 1.1 The movement of critical thinking from novice to expert, according to Benner

BENNER: FROM NOVICE TO EXPERT	<p>Novice Nurses have the ability to carry out nursing care and predict what might happen to patients being managed, but it is still relatively limited. The category of nurses in this stage occurs of student nurses or nurses who have no experience in service. After they gain experience, they will recognize signs and symptoms in patients. Their behavior is also very limited and inflexible.</p>
	<p>Advanced Beginner There are several experiences of nurses at this stage through their observations in carrying out nursing care. It is like the nurse's ability to recognize meaningful nursing care and carry it out according to existing principles.</p>
	<p>Competent At this stage, the nurse has two or three years of experience in the clinical setting. Nurses still lack speed and flexibility in their skills, but nurses have some mastery and can rely on advanced planning and organizational skills.</p>
	<p>Proficient At this stage, nurses already have the ability to view nursing care as a whole. The experience experienced by the nurse will be a learning experience for her and will further provide the nurse's ability to deal with patient problems and the changes experienced. Usually, nurses will experience this situation several years after entering the clinical nursing profession.</p>
	<p>Expert Nurses have an intuitive and skilled understanding of problem-solving and more extensive and varied experience. At this stage, nurses carrying out nursing care have a more comprehensive ability to identify specific needs and resources expected by clients to achieve the desired results and determine problems in various areas.</p>

This expert provides an overview of how a nurse will have a way to be able to move their abilities from starting work as a nurse supported by the presence of standard operating procedures that will guide them to work until they grow to use critical thinking skills, how they perceive nursing care as a whole, and decide on the necessary changes to improve service quality (Jarvis, 2021). Nurses will try to improve various abilities in critical thinking so that they can succeed well in managing nursing care(Alfaro-LeFevre, 2020).

C. CORE CRITICAL THINKING SKILL

Nurses, to be able to think critically to make good decisions require a variety of skills in carrying out the nursing process. Below are described some of the skills that are often used or are core in carrying out the nursing process. (Potter et al., 2019) (Berman et al., 2018).

1. Reflection

Reflection is a way to further investigate the understanding of something and process it by evaluating and making experiences for someone. This ability is important for nurses in carrying out best practice standards, such as in selecting interventions that are appropriate, safe, and effective.

2. Interpretation

Interpretation is an attempt to find meaning. Some conditions use interpretation in deciding the most appropriate such as behavior, events, and social interactions. In the context of the nursing process, these skills are often used at the nursing diagnosis stage to determine patient problems.

3. Analysis

This skill is an effort to recognize the existing conditions, consider the relationship in it or try to explain the relationship with one another to be able to produce an assumption or conclusion. The nursing process usually occurs at the stage of nursing diagnosis.

4. Inference

This skill is an attempt to predict the most appropriate consequences or conclusions through the best-considered cues. There are two types of inference, including inductive and deductive reasoning. Inductive reasoning moves from specific cues to general conclusions. Example: the nurse observes a patient's wound is wet, red, swollen, and pus, then a general conclusion is made that the wound is inflamed. At the same time, inductive reasoning moves from general cues to specific conclusions. An example of a nurse reading in a patient's nursing diagnosis book is that airway clearance is ineffective, so when the nurse evaluates the patient, the nurse will examine whether there are signs of these problems such as nasal flarings, use of accessory muscles, breathing rate more than normal, Ronchi breath sounds.

5. Divergent Thinking

This skill is related to the ability to distinguish and evaluate the credibility of various information, such as signs or facts or conclusions or opinions, or decisions. This activity is usually carried out by nurses in conducting data analysis or evaluation.

6. Clarification

Clarification is needed by the nurse so that the information obtained can be ensured that it is appropriate, done in various ways such as checking from other informants and also checking documents. The nurse does this by checking other documents or checking with other informants. This activity is often carried out at the implementation stage to ensure the patient understands the action plan to be implemented.

7. Evaluation

Nurses use evaluation skills to assess nursing care. To produce a quality evaluation, a lot of activities are needed in it, including the ability to analyze, interpret, make conclusions, and others.

8. Explanation

Explanation is the process of justifying what we have decided to do or what we have decided to believe. Individuals with strong

explanatory skills provide evidence, methods, and judgments that they rely heavily on when making judgments. Explanations include assumptions, reasons, values, and beliefs that individuals have. Strong explanations allow others to understand and evaluate our decisions.

9. Self-regulation

In the context of critical thinking, self-regulation is concerned with monitoring and, if necessary, being able to correct errors that may occur in the process of interpreting, analyzing, concluding, evaluating, or explaining. Self-regulation occurs during the critical thinking process and is not only limited to the last part of critical thinking activities. As soon as the individual identifies errors as a result of the self-monitoring process, they can be corrected so that the whole process of critical thinking can again move forward toward its peak so that it can be considered as a judgment about what to believe or what to do in a particular context. Self-regulation can focus on one of the elements in the critical thinking process, including how the problem is framed, what can be accepted as evidence, what methods are used, what guides as theoretical considerations, and what level of a conclusion is considered appropriate for the problem that has been solved or decisions that have been made. Self-regulation is the skill that separates critical thinking from uncritical thinking.

D. GOALS AND OUTCOMES CRITICAL THINKING IN NURSING

Every human being, especially nurses, can learn about critical thinking, such as learning about what critical thinking is, what forms of critical thinking are like, how to do critical thinking, and what we will do by thinking critically when conditions change. Each individual seeks to use critical thinking skills for one or more of the expected goals. The purpose of someone using the ability to think critically (Alfaro-LeFevre, 2020)

1. To gain self-confidence

Confidence is a very important trait for success. Meanwhile, a lack of confidence is a “brain drain” that hinders an individual’s thinking and performance.

2. Be a safe and independent person

Individuals will be able to determine when is the right time to take the initiative in doing something, exercise independence in activities, and then respond by seeking assistance.

3. Can improve patient outcomes and own job satisfaction

Critical thinking makes a real difference in the delivery of nursing services and leads to increased job satisfaction because it can see patients and families develop better.

Today’s delivery of nursing care is increasingly complex and dynamic and requires very specific thinking and skills in the workplace. Therefore, nurses need efforts to develop critical thinking skills properly in order to produce the expected output. It is based on:(Alfaro-LeFevre, 2020)

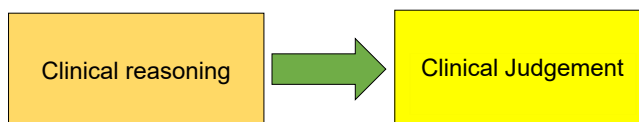
1. The key to preventing and overcoming patient health problems is to use critical thinking skills. If nurses do not think critically, then we will be part of a problem.
2. Critical thinking is essential to pass the test that shows you are qualified to practice nursing. For example, the nurse competency exam in Indonesia (UKNI), the National Board Licensing Exam (NCLEX), Canadian Registered Nurse Exam (CNRE), PROMETRIC-RN, and other certification exams.
3. Nurses are expected to collaborate with diverse individuals, take on new responsibilities, and make more independent decisions. High-performance organizations require workers with personal qualities who are reliable and have integrity and have solid thinking skills.
4. Nurses must be a major player in designing and implementing an effective and efficient nursing care system. This role is related to the context of the entire workforce, specifically nurses, existing health service limitations, social and technological problems that continue to develop.

5. With regard to the present, the complexities of nursing care require knowledgeable individuals to be more thought-oriented than task-oriented. Nurses must change their image not just as a profession that is simply called a caring and helping hand but into someone who has special and important knowledge to keep patients safe and help them recover quickly and stay healthy. Hence, it can be stated that nowadays, we need nurses who have to wear not only hearts but also brains and sleeves.
6. In making decisions about problems and actions to be accepted, patients and families must be active participants. There will be no problems, and solutions will be taken without the involvement of the patient and family. Nurses need critical thinking and interpersonal skills to do many things that will enable them to manage services in the room, such as leadership skills, advocating, teaching, and empowering patients to participate in health improvement.
7. The key to building a foundation for lifelong learning in a healthy workplace is through the use of critical thinking skills. In this way, the organizational culture will pay more attention to reporting errors and improving client safety rather than pointing and blaming.

E. DEVELOPING CLINICAL REASONING SKILL

The nursing profession, as a health profession, uses critical thinking in dealing with patients or clients within their scope of work. This is known as clinical reasoning. So that in general critical thinking will have similarities with clinical reasoning. The difference is that critical thinking is an effort to reason in any situation, both in general and in patients, while clinical reasoning occurs when managing patients and matters related to it. The result of critical thinking in decision-making, and specifically, the result of clinical reasoning, is clinical judgment. So that in general, decision-making will also experience similarities with clinical judgment, only different in the same context as critical thinking and clinical reasoning. Scheme 1.1 below will clarify the relationship between clinical

reasoning as critical thinking in the field of nursing and clinical judgment as a result.



Scheme 1.1 The relationship between clinical reasoning and clinical judgment.

Many people experience minimal understanding of their own thought processes and even less understanding of how other people think. Therefore, nurses must examine the factors that can influence the process of thinking and learn various strategies that can be made to use the most potential critical thinking. There are five steps that can be used to achieve the potential for critical thinking that can be applied in the workplace as a nurse. (Alfaro-LeFevre, 2020)

1. Increase insight and self-awareness.

Nurses need to ask themselves how an expert describes critical thinking. How do individuals describe this? what about personality, learning styles, and drives that affect thinking? What are the factors that influence thinking? And what are the strategies that help?

2. Builds trust in relationships and aims to establish mutual communication in all interactions. The key here is communication skills and being open and honest with the exchange of facts, thoughts, ideas, and feelings.

3. Using evidence-based references.

This is to ensure everyone in the group has a common understanding of why critical thinking is necessary. Evidence-based guidance will provide a topic of conversation to discuss whether things are going well and what still needs to be improved. Everyone in the group must be on the same page.

4. Nurses need to make a commitment to developing the attitudes, knowledge, and skills needed in critical thinking.

5. Nurses need to ask for feedback about their activities.

Nurses need to get evaluations both formally and informally related to their thinking ability and performance for self-improvement. Nurses also need to know what they can do well and what they can do to improve.

F. DECISION-MAKING AND PROBLEM-SOLVING

Decision-making and problem-solving are almost similar processes, but they have one very striking difference. Both of these usually start with a problem but differ in the purpose of carrying out activities between the two activities. The purpose of decision-making tends to be simply to deal with the outcome. While problem-solving, in general, is a more scientific process (Zerwekh and Zerwekh Garneau, 2022). The best decision-making comes from the problem-solving component, which includes the process of choosing among the resulting solutions. The choices made must be able to solve problems and advance the organization (Beauvais, 2019)

Experts have defined decision-making differently. Simon (1960) states that decision-making is deciding among alternatives; Shull, Delbecq, and Cummings (1970) defined it as a conscious and humane process, in choosing a behavior from a series of existing alternatives to meet the desired goals, by involving both individual and social events that are based on the premises and values of existing facts, Brunswick (1979) argued that it makes judgments about objects and events using “gestures,” where they may be wrong, Ackoff (1981) mentioned that individuals or groups make decisions because they have alternative courses of action available. The choices made can have a significant effect, as Mintzberg (1983) stated individual or group commitment to action, Nolan (1989) argued choose the best of the available options, Harrison (1999), Anderson et al. (2016) stated as generally related to the problem-solving process, where the first step is to identify and define the problem and ends with the selection of alternatives, namely decision-making actions (Liu, 2020).

While decision-making in nursing is a process of critical thinking to choose the best course of action to achieve the expected goals, decisions must be made whenever there are several mutually exclusive choices or when there is a choice to take action or not (Berman, 2018). Decision-making, clinically or in nursing practice, is often referred to as clinical judgment. Clinical judgment focuses on defining the patient's problem or situation and selecting appropriate interventions. When the nurse is faced with a problem with clinical reasoning, such as a patient who has difficulty walking, the nurse makes a decision to identify the problem, such as a weak leg, and then selects a nursing intervention, such as teaching the patient to use assistive devices. The use of clinical judgment distinguishes nurses who are professionals from personnel who are only technical. Nurses can apply clinical judgment skills to patients or groups in a number of activities, including:

1. Identify nursing diagnoses and collaborative problems for each patient
2. Analyze the patient's health problem or diagnosis and decide on the most urgent problem on the basis of the patient's needs, the presence of changing and unstable status, and the complexity of the problem
3. Considers the availability of resources to manage any health problems, including assigning unregulated care providers to work with patients and families.
4. Consider how involved the patient is as a decision-maker and participates in care.
5. Decide how to combine activities to resolve more than one patient at a time.
6. Deciding whether nursing care procedures will be delegated to unregular care providers so that nurses can spend time doing activities to gain professional nursing knowledge

Nurses apply the nursing process as a critical thinking competency when delivering care to patients. The nursing process is a clinical judgment approach with five steps which include assessment, diagnosis, planning, implementation, and evaluation. The goal of

the process itself is to help the nurse identify and address the patient's health problems and help him achieve agreed health outcomes. Nurses, in carrying out the nursing process, combine two major groups of competence:

1. General competence: scientific method, problem-solving, and decision making
2. Specific critical thinking competencies: clinical reasoning, clinical judgment

(Astle et al., 2023)

Whereas problem-solving is a choice made among possible alternatives that are considered the best solution for certain conditions. To get the best solution, problem-solving must involve a lot of discussion about possible solutions by those who have influence over the condition and who have the knowledge and power to support the presence of possible solutions (Zerwekh and Zerwekh Garneau, 2022). Problem-solving is an attempt to understand a problem and find possible solutions to be evaluated carefully and is one that is chosen to be implemented. The state of the problem for which troubleshooting has taken place is carefully monitored over time to ensure the effectiveness of the solution from the outset and continuation. As a nurse, when solving a problem and deciding on the best option, do not discard the other options but keep them as a backup. If the first solution after running is still felt to be less effective, then the nurse can use another option (Sharma, 2023).

Problem-solving processes are finding and implementing solutions to correct challenges. The process for solving the problem is (Beauvais, 2019).

1. Identify the problem

Some questions to define the problem like: What is the basis of the problem? How long has the problem been going on? Who is affected by the problem? How does that right now compare to how we expect it to be?

2. Gather information (facts, assumptions, needs)

In this phase, all available information related to identifying the problem must be collected.

3. Find alternative solutions

We need to explore several potential solutions to the problem in order to solve the problem effectively. Several ways to generate alternative solutions are through brainstorming, asking questions to the self or team, and investigating problems.

4. Evaluate solutions, analyze, and compare.

Some questions to evaluate the solutions to be taken, what are the goals or final results desired by the individual/group? What does it mean to be successful in solving problems? After testing problem solutions, think about the consequences of choosing alternative solutions.

5. Select a solution

Some of the questions for choosing a solution to a problem solving are “What is the best solution? Is the solution the best choice with the highest benefits and the least disadvantages?”

SUMMARY

Thinking and critical thinking are two different things but have similarities in them. The difference is the focus on the process of solving the problem. There are several conceptual frameworks that nurses can use in developing critical thinking processes, including, according to Kataoka Yahiro and Saylor, who divide critical thinking skills into basic, complex, and commitment. Meanwhile, according to Rubinfeld and Scheffer, critical thinking will be complete if the components in it include total recall, habit, inquiry, new ideas and creativity, and knowing how you think. Meanwhile, according to Benner, the critical thinking skills of nurses will develop from novice, advanced beginner, competent, proficient, and expert. Nurses need to develop various critical thinking skills in order to be able to carry out the nursing process well. These abilities include reflection, interpretation, analysis, inference, divergent thinking, clarification, evaluation, explanation, and self-regulation. There are several goals

why a nurse makes efforts to think critically, including developing her self-efficacy so that she becomes a nurse who is independent and safe in acting, which can increase satisfaction for both nurses and patients served. In the nursing process, critical thinking is known as clinical reasoning; in order to identify patient problems and in making decisions about a matter in the field of nursing is called clinical judgment. Decision-making or specifically in nursing is referred to as clinical judgment, which is similar to problem-solving but has a different meaning. Decision making specifically in the field of nursing, called clinical judgment, can occur without problem-solving, but it is better to start with that to get better-expected results.

REVIEW QUESTIONS

1. Which of the following examples illustrates a nurse practicing critical thinking when caring for a patient?
 - a. Nurses serve patients driven by emotion
 - b. Nurses serving patients are task-oriented
 - c. Nurses caring for patients are full of criticism
 - d. Nurses treat patients with unclear motivations and reasons
 - e. Nurses serve patients based on ethical and moral principles

2. Even though the client states that he is hungry, the client continues to refuse to eat the food served at the hospital. What is the nurse doing best using the critical thinking model?
 - a. Believing that the client is not right
 - b. Continue to leave food by the bed until the client is hungry enough to eat
 - c. Collaboration with the nutrition department to provide more interesting food
 - d. Telling the doctor that it may be necessary to immediately indicate the installation of a gastric tube.
 - e. Clarifying with the client the nurse's assumptions about the reasons the client does not want to eat

3. A client, after the seventh day of appendectomy surgery, showed that the surgical wound was not dry and there was redness, swelling, and pus. As a nurse, what is the next most appropriate THINK model of critical thinking to deal with the client's problem?
 - a. Habits
 - b. Inquiry
 - c. Total recall
 - d. Knowing how you think
 - e. New ideas and creativity

4. A nurse has learned while in colleges how to wash hands properly using running water and antiseptic soap with seven steps to wash hands. When a nurse starts an activity to care for a patient in a hospital ward, the nurse performs the seven steps hand washing activity using running water and soap as she had learned in college before. Which critical thinking model of THINK is the nurse using?
 - a. Habits
 - b. Inquiry
 - c. Total recall
 - d. Knowing how you think
 - e. New ideas and creativity

5. All third-degree nursing students wear white uniforms when practicing at the hospital. All undergraduate nursing students wear white uniforms when practicing at the hospital. All nursing specialist students wear white uniforms when practicing at the hospital. Conclusion: All student nurses wear white uniforms when practicing at the hospital. The above statement shows an example of ...
 - a. Analysis
 - b. Reflection
 - c. Interpretation
 - d. Inductive Reasoning
 - e. Deductive Reasoning

6. Nurses try to make clinical decisions about the patients that they treat by knowing their conditions. Which of the following activities will reduce the nurse's ability to make clinical decisions?
 - a. Study how patients respond to their clinical conditions
 - b. Improve mutual communication relationships with patient
 - c. Conducting assessments of patients, both interviews and observations
 - d. Make an effort to treat a group of patients who have similarities until overtime
 - e. Read sources related to evidence-based practices about the patients treated

7. Miva has nasal flarings, rhonchi, cough and sputum, and breathing that is higher than normal. These signs and symptoms indicate an ineffective airway clearance. Conclusion is:
 - a. Miva has pneumonia
 - b. Miva has an ineffective airway clearance nursing problem
 - c. Miva has no problem nursing airway clearance is not effective
 - d. The problem of ineffective airway clearance nursing is not appropriate for Miva
 - e. Nasal flarings, breath sounds, crackles, coughing, and sputum and breathing are higher than normal and are not signs and symptoms of ineffective airway clearance

8. After the nurse finds alternative problem-solving and evaluates them in the decision-making process, the nurse will choose the best one to implement. However, it is better if the nurse, before doing this, must make an effort to ...
 - a. Brainstorm with other nurses.
 - b. Review the purpose of decision-making.
 - c. Identify and consider various tools to achieve results
 - d. Define a logical course of action to intervene when problems arise
 - e. Consult with clients and family members to determine their views on the criteria

9. A nurse treats three patients under her care; the first has shortness of breath due to a lung infection in an unfavorable condition, uses oxygen, and periodically has to suck mucus; the second has a lung infection but only uses oxygen and the third also has a lung infection but one more day has been allowed outpatient treatment because it has improved and without oxygen. During service hours, the nurse received an invitation from her friend to attend a seminar in the field of nursing. What is the best decision the nurse would make using critical thinking skills?
- a. The nurse does her job but complains and doesn't wholeheartedly
 - b. Nurses try to delegate their duties in caring for patients to junior nurses
 - c. The nurse made the decision not to attend her work and attend the seminar
 - d. Nurses take care of patients seriously, prioritizing those with more problems
 - e. Nurses feel luckier to attend the seminar because there is a law for making a nurse registration certificate and leaving the patient
10. The nurse is preparing a nursing plan for a patient experiencing ineffective airway clearance problems. What critical thinking activities could the nurse use in this situation?
- a. reflection
 - b. Taking action
 - c. Noticing cues
 - d. Considering actions
 - e. Response monitoring

Answer Keys:

1. e 2. e 3. B 4. a 5. d 6. d 7. b 8. e 9. d 10. D

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CHAPTER 2

CONCEPTS OF THE NURSING PROCESS



LEARNING OBJECTIVES

- Summarize the understanding of the nursing process
- Determine the stages of the nursing process
- Conclude understanding of the nursing process as a cycle
- Conclude about the characteristics of the nursing process
- Explain the benefits of the nursing process

A. HISTORY NURSING PROCESS

Lydia Hall first used the term “nursing process” in a journal article in 1955. Other nurses began using the term in the 1950s and early 1960s to describe the steps for decision-making when performing the nursing process. Johnson (1959), Orlando (1961), and Wiedenbach direct the nursing process into three steps: assessment, planning, and evaluation. Yura and Walsh (1967) identified four nursing process steps: assessment, planning, implementation, and evaluation. Nursing diagnosis terminology was first used by Fry (1953). In 1974, after the first meeting with NANDA (Nursing Diagnosis Association International), nursing diagnoses were added as a separate stage in the nursing process (Gray, 2019)

The ANA (American Nurses Association) identified five specific steps of the nursing process in its clinical practice standards in 1973, including assessment, diagnosis, planning, implementation, and evaluation. These steps define how professional nursing practice is carried out. In 1991, ANA added outcome identification as an important aspect of the nursing

process. In general, nurses recognize outcome identification as part of the planning step in the nursing process (Yoost, 2019).

B. DEFINITION OF THE NURSING PROCESS

Experts have defined the nursing process differently. American Nurses Association (2010) stated that the nursing process is a critical thinking process that professional nurses use to apply the best available evidence to caregiving and promote human function and responses to health and illness. The nursing Process is a standard of practice that, when followed correctly, protects nurses against legal problems related to nursing care. It allows you to provide timely, appropriate, and individualized patient care (Potter et al., 2019). Whereas (Yoost, 2019) argued that the nursing process is the foundation of professional nursing practice. This process is the framework for nurses to provide care to patients organizationally and effectively (Yoost, 2019). Slightly different from the (Ignatavicius, 2021), stated is a systematic method to solve patient problems by making safe and client-centered decisions. This method has been used since to guide professional nursing practice as a gold standard. In conclusion, the nursing process is an organizational framework for professional nursing practice in which nurses use critical thinking processes to provide the best possible care for clients.

C. BENEFITS OF THE NURSING PROCESS

There are many benefits of the nursing process, including:(Ralph and Taylor, 2014)

1. For nurses just starting work and seeking experience, it provides a framework for independent nursing actions, enhances a consistent structure for professional practice, and helps nurses focus more precisely on each patient's health care needs.
2. Allows nurses to apply knowledge and skills in a goal-oriented management
3. Enable nurses to communicate with colleagues or other professionals in practice locations regarding professional topics

4. Basis for documenting comprehensive nurse roles and quality patient care

D. STAGE OF THE NURSING PROCESS

The key components of the nursing process consisting of steps which are abbreviated as ADPIE include: (Yoost and Crawford, 2022)

1. Assessment

Assessment is the first stage in the nursing process, starting with collecting data from various sources such as patients, family, friends, other health workers, laboratories, medical records, and results of diagnostic tests in various ways such as interviews, obtaining medical history, and physical examination. The data collected includes physical, psychological, cultural, environmental, and spiritual data. Then, data are grouped into subjective and objective data. Subjective data, referred to as symptoms, are in the form of statements or results of interviews with patients, family, or people close to the patient. Examples include: "I have experienced shortness of breath recently" and "I have had hypertension since five years ago." While objective data, or a sign, is based on observations such as health examination results, laboratory results, medical records, and diagnostic tests. For example, "swelling," "hemoglobin 10 gr/dl", and "X-Ray results: there is fluid in the left pleura." After the data has been grouped, the existence of the data should be validated. For example, if the patient states shortness of breath, the nurse needs to measure the respiratory rate; if it is more than normal, it indicates that the patient is experiencing shortness of breath. Validation can be supplemented by blood tests (blood gas analysis) to determine whether the patient is deficient in oxygen. After the data is validated, the next step is to organize the data or classify the data of information that help nurses identify patient strengths and actual or potential health problems. Nurses can use data organizations such as body systems, from Maslow,

Gordon, or NANDA. Data organized in a certain way is documented to get good records and reports.

2. Nursing Diagnosis

Nursing diagnosis is the second stage in the nursing process. At this stage, the nurse attempts to analyze the data starting with identifying patient problems by grouping similar data and looking for causes of problems. Then the nurse formulates a nursing diagnosis. Nursing diagnosis is a form of patient problem-solving, where the result is a decision or conclusion regarding the patient's response to actual or potential problems. The nursing diagnosis statement includes the actual if the problem occurs, the risk if the problem is very likely, and health promotion is the client's desire to participate in activities that will help him maintain or improve his health.

3. Planning

The third step of the nursing process is planning. The steps in making a nursing plan include: setting priorities, setting goals and expected outcome criteria, and determining appropriate nursing interventions. Priority setting aims to identify the sequence of nursing interventions appropriate to the client's various problems. Priority setting is done because not all problems can be resolved simultaneously. One method of setting priorities is by using Maslow's hierarchy of needs. Priorities can be classified into three levels: high priority, intermediate priority, and low priority. In setting priorities, the nurse must also pay attention to the client's values and beliefs about health, the client's priorities, the resources available to the client and the nurse, the importance of the health problem being faced, and the medical treatment plan. After setting priority issues, the next step is for the nurse to set goals and outcome criteria, select nursing interventions based on patient reality and evidence, and write them into the available format.

4. Implementation

Implementation is the fourth stage of the nursing process. At this stage, the nurse takes the initiative to implement the nursing plan

to achieve the expected goals. The nurse must ensure that the plan is implemented safely and on time. Implementation is an initiative of an action plan to achieve specific goals. This phase begins after an action plan is prepared at the planning stage, aimed at “nursing orders” (nursing instructions) to help clients achieve the expected goals. The implementation goal is to help clients achieve their stated goals, which include health promotion, disease prevention, health restoration, and facilitating coping. Nursing action planning will be carried out properly if the client desires to participate in nursing actions.

5. Evaluation

Evaluation is the final stage or the fifth stage of the nursing process. Evaluation is a continuous stage with other stages. There are two parts to the evaluation activity, including achieving the evaluation objectives and reviewing the nursing care plan. The goal of the first part is to decide whether the patient has achieved the goals selected during the planning phase of the nursing process. The second part aims to keep the plan correct and able to respond to changing patient needs. The nurse must decide whether the plan needs to be continued or not or needs to be revised.

E. THE CYCLE IN THE NURSING PROCESS

The nursing process is a cycle that starts from the assessment, continues until the evaluation phase, and returns to the assessment phase. Each stage requires synthesizing critical thinking processes through analyses using knowledge, standards, attitudes, and experience. The cycle and synthesis of critical thinking processes in the nursing process can be seen in Scheme 2.1

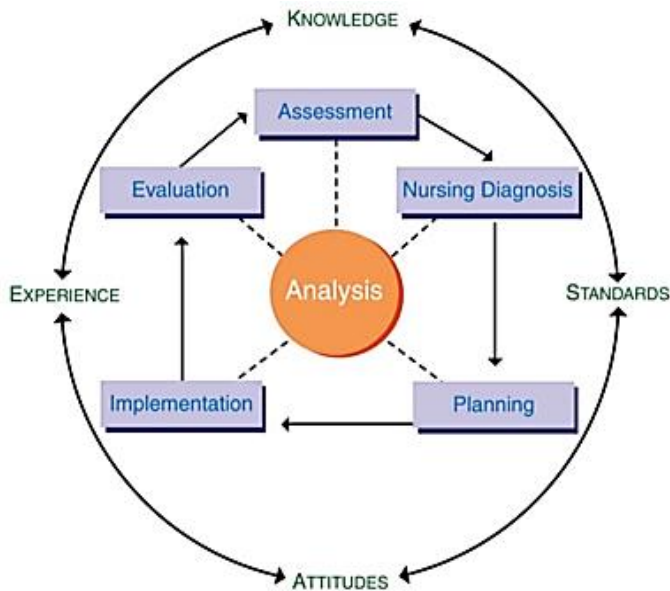


FIG. 15.3 Synthesis of critical thinking with the nursing process competency.

Scheme 2.1 Cycle and synthesis of critical thinking processes in the nursing process (Potter et al., 2019)

F. CHARACTERISTICS OF THE NURSING PROCESS

Nurses must recognize and understand some of the essential characteristics of the nursing process to be able to apply the nursing process effectively. These characteristics are (Yoost, 2019)

1. Analytical

Nurses think analytically by using several aspects of critical thinking when carrying out the nursing process. At each step of the nursing process, the nurse must direct attention to the following:

- a. Is the data complete and accurate?
- b. Are the results specific and realistic for the patient or group?

- c. Have all the factors contributing to the patient's response to the disease or problem group adequately addressed in the treatment plan?
- d. Could any of the existing nursing interventions harm the patient or group?
- e. Does each nursing intervention provide patient-centered care and patient safety?
- f. Are there any new data that require modification in the existing care plan?

The analytical nursing process also includes the nurse's ability to think simultaneously at several steps to ensure that critical data is considered and to provide evidence-based and patient-oriented care. It also includes the nursing process as a cycle and not a linear one, where the nurse must consider the accuracy and effectiveness of her thinking process at every step. This form of reflective thinking is an important aspect of a nurse's critical thinking.

2. Dynamic

The dynamic nature of the nursing process means that the nursing process can change over time in response to patient needs. The dynamic and responsive nature allows this process to be used effectively with patients in every setting and level of care, from intensive care units to outpatient clinics, with groups of any size or configuration. The principle the nurse implements in the dynamic nature of the nursing process is to keep the five nursing processes in mind, where the nurse performs ongoing assessments as the patient's condition changes and modifies the care plan.

3. Organized

When following the steps of the nursing process, the nurse ensures that care is organized and thorough. Nurses worldwide understand and use the nursing process as a standard method of meeting patient needs. This process is systematic, so nurses use it as a framework for developing individual care plans.

4. Outcome Oriented

Specific and well-defined outcomes are the goal of designing a nursing process. A plan of care is developed to achieve goals for each patient, not the patient's general goals or standard for patients or members of the healthcare team, including nurses. The basis for making decisions about nursing interventions and medical procedures is safety and effectiveness in meeting identified patient needs and expected outcomes. Nurses and other health care team members can consistently care for patients or groups and identify effective treatments while changing those that do not help achieve established goals and achieve desired outcomes with reference to individual care plans developed within the context of the nursing process.

Nurses and members of the health care team develop plans of care using the nursing process as the standard framework, holding them accountable for the action taken. Treatment plans are effective when the nurse's priority and patient goals are met. But if not, the nurse needs to use some efforts such as critical thinking skills, knowledge, and the nursing process to modify the plan to better address the problem identified.

5. Collaborative

Adequate meeting of patient needs requires frequent collaboration among several members of the healthcare team. Nurse collaboration includes physical therapists, social workers or respiratory therapists, or other health workers; orders resulting from the collaboration are included in patient care plans to help overcome patient problems and achieve the expected goals.

SUMMARY

Experts define the nursing process differently. But in general, the nursing process is a framework that regulates professional nursing practice where nurses use critical thinking to provide the best service when carrying out their activity process. Therefore, there are many reasons why nurses do this, which can be summarized as a framework for nurses to work, communicate, do documentation, and

increase their knowledge and skills in nursing care. The stages of the nursing process include assessment, nursing diagnosis, planning, implementation, and evaluation, which work in cycles. In the process, there is a link between the planning and evaluation stages, and the evaluation stage has a special relationship with other stages of the nursing process. Therefore, the characteristics of the nursing process must be analytic, dynamic, organized, result oriented, and collaborative.

REVIEW QUESTIONS

1. The nurse identifies the patient's response to an actual or potential health problem and is accountable for the results obtained. What can we call the step nursing process as described in the statement above?
 - a. Assessment
 - b. Diagnosis
 - c. Planning
 - d. Implementation
 - e. Evaluation

2. The nursing process is ...
 - a. The scientific method of solving patient problems
 - b. Methods for diagnosing a patient's disease and treating it
 - c. Methods for carrying out the stages of nursing care for each patient
 - d. A logical, systematic problem-solving method for providing nursing care
 - e. Methods for diagnosing and treating human responses to actual problems or risks

3. Through the nursing process, nurses plan and provide care to patients with...
 - a. Collect data and write nursing diagnoses
 - b. Develop a rigid and unchangeable plan of care

- c. Assessment, diagnosis, planning, implementation, and evaluation
 - d. Plan nursing actions and determine agreement with the necessary personnel
 - e. Evaluation of the patient's condition according to the goals and outcome criteria set
4. Which statement is true about the nursing process?
- a. The nursing process consists of four continuous stages.
 - b. Is an advanced competency for a student who graduated from nursing education
 - c. The nursing process can be a major source of communication between nurses, patients, and doctors.
 - d. The nursing process is a step-by-step approach to nursing care that is systematic, rigid, and cannot be changed
 - e. The nursing process based on problems and solutions begins with setting outcome criteria and the actions carried out from start to finish. This process remains the same.
5. The nurse is performing the final phase of the nursing process. What is the reason for the nurse doing this phase?
- a. Documenting nursing interventions
 - b. Ensuring that the nursing care plan remains unchanged
 - c. Determine if the results the patient expects are achieved
 - d. Get both subjective and objective data in a variety of ways
 - e. Evaluate the knowledge and efficiency of nurses in treating a certain patient
6. The nurse is responsible for caring for several clients in the ward where she works. What is the purpose of the nurse using the nursing process in caring for patients?
- a. Enables nurses to perform nursing care for a large number of patients
 - b. Helping various health workers in the wards regarding what is happening to patients.

- c. Provide the nurse with a framework that will assist her in the delivery of comprehensive nursing care
 - d. Assist family members in selecting and deciding actions regarding nursing care to be implemented
 - e. Organizing information from clients so doctors and other health workers know things that are still wrong about patients
7. Nurses carry out activities to collect subjective and objective data of clients with various methods, both physiological, psychological, and spiritual data. What stage is the nurse doing?
- a. assessment
 - b. Nursing diagnoses
 - c. planning
 - d. implementation
 - e. Evaluation
8. Nurses record data from interviews with patients. What type of data is the nurse writing down?
- a. Focus
 - b. Normal
 - c. Abnormal
 - d. Objective
 - e. Subjective
9. The nurse prioritizes the patient's nursing diagnoses so that interventions needed by the patient can be developed and implemented. What stage of the nursing process is the nurse doing?
- a. assessment
 - b. Nursing diagnoses
 - c. planning
 - d. implementation
 - e. Evaluation

10. The nurse determines whether the client's goals and outcome criteria are being met. What is this stage of the nursing process?
- a. assessment
 - b. Nursing diagnoses
 - c. planning
 - d. implementation
 - e. evaluation

Answer Keys: 1. a 2. e 3. c 4. c 5. c 6. c 7. a 8. e 9. c 10. e

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CHAPTER 3

COMPARISON OF THE SCIENTIFIC METHOD AND THE NURSING PROCESS AS A METHOD OF PROBLEM-SOLVING



LEARNING OBJECTIVES

- Determine the similarity and the difference between the scientific method to the nursing process.
- Determine the similarities and differences between the nursing process and the research process.
- Determine the similarity and the difference between the nursing process and evidence-based practice in nursing.

A. DEFINITION OF SCIENTIFIC METHOD AND NURSING PROCESS

The scientific method and the nursing process are seemingly different terms and have different definitions. The scientific method is defined as a controlled, systematic investigation rooted in the reality of objects and aims to develop general knowledge about natural phenomena. The scientific method has various characteristics, including:(Sharma, 2023)

1. It is a systematic and orderly process.
2. The scientist must try to control for external factors that are not under direct investigation.
3. The findings are based on empirical events
4. The findings are from the scientific method and can be generalized
5. The scientific method is based on assumptions or hypotheses
6. The scientific method is done to test or develop theories

The nursing process is a systematic method by which nurses plan and carry out nursing care for patients. The nursing process approach includes problem solving, which enables the nurse to identify actual and potential patient problems. When a problem is identified, the next step is for the nurse to plan, implement it, and evaluate nursing care in an orderly manner using a scientific manner. The nursing process contains five dynamic and interrelated stages (Cooper and Gosnell, 2022).

B. NURSING PROCESS, SCIENTIFIC METHOD, AND PROBLEM-SOLVING

Nursing science is a discipline that combines scientific knowledge and research methods. A scientist uses a consistent and logical scientific method to solve a problem. The scientist will first define the problem, then gather information, continue to analyze the information, and so on, develop solutions. The scientist makes a decision about the solution to be used and implements it, and then evaluates the results of the decision that has been made. Nurses use the nursing process to solve patient problems that are their scope of responsibility. Nursing is a way to think and act with the scientific method. The nursing process shares many characteristics with the scientific method (Williams, 2021). The nursing process is a process that is systematic, scientific, and generalizable and is a tool for finding and solving problems. A comparison of the scientific method and the nursing process can be seen in Table 3.1 (Williams, 2021).

Table 3.1 Comparison of the scientific method and the nursing process

Comparison of Scientific Method and Nursing Process	
Scientific Method	Nursing Process
Define the problem and gather information	Assessment is assessing data from collecting, validating, and organizing to documenting data.
Analyzing data or information	Identify and analyze data by considering the basic data assessment, determine the problem, and formulate nursing diagnoses.
Develop a solution and make a decision.	Planning is choosing priorities, determining expected outcomes, and selecting interventions to achieve outcomes.
Implement decisions	Implementation is carrying out the interventions
Evaluate existing decisions	Evaluation is assessing the results of the intervention, determining whether the expected results can be achieved, revising the plan if the expected results are not found, and terminating the intervention when it is no longer needed.

C. NURSING PROCESS AND RESEARCH PROCESS

The research process is a systematic investigation with disciplined methods to solve problems or answer existing research questions (Sharma, 2023). The research process using the problem-solving method begins by providing specific questions about the problem (Hopp and Rittenmeyer, 2021). For example, many hypertensive patients already take anti-hypertensive drugs, but their blood pressure remains high. After conducting a preliminary survey, many patients experience increased stress in daily activities. Then the researchers reviewed the literature regarding what efforts could be made to reduce stress to reduce blood pressure in hypertensive patients. They found a question regarding “Is there an effect of progressive muscle relaxation accompanied by classical music on reducing stress and blood

pressure in hypertensive patients? This is based on the hypothesis regarding the mechanism of progressive muscle relaxation, and classical music can affect the brain and blood vessels, thereby reducing stress and blood pressure. They then planned the research method to detect any differences in the treatment administered to the study. Then, it carried out the study, by making two groups of patients, one group receiving treatment and one group receiving no treatment. Through the study, they carefully measured all subjects, analyzing the results and making conclusions about progressive muscle relaxation therapy accompanied by classical music can reduce stress and blood pressure in hypertensive patients.

The nursing process and the research process have some similarities and differences. The similarities between the nursing process and the research process involve abstract critical thinking and complex reasoning to help to identify new information, find a relationship, and make predictions about phenomena; both processes begin with obtaining information, then making observations, identifying problems, developing plans or methodologies, taking action or collecting data and analyzing, both processes are reviewed regarding effectiveness and efficiency, plans in the nursing process are evaluated and results are determined in the research process, and both processes implement to expand and refine the use of knowledge.

The research and nursing processes have several differences, as described in table 3.2 (Grove and Gray, 2023).

Table 3.2 The difference between the research process and the nursing process

Comparison of Research Process and Nursing Process	
Research Process	Nursing Process
The research process is more complex than the nursing process and involves a more rigorous application of various research methods.	The knowledge of the nursing process will help understand the research process.
The research process has a broader focus than the nursing process	The focus of the nursing process is narrower, tending to the specific patient or family.
The theory underlying the research process is stronger than the nursing process.	The theory underlying the nursing process is less strong than the theory of the research process.
Conducting research requires greater precision, rigor, and control of the nursing process.	The nursing process requires precision, rigor, and control, but more is needed than the research process.
The results of the research process are often shared with a large number of nurses and other health professionals through presentations and publications.	There is sharing of the results of the nursing process, but the activities are smaller than in the research process.
The results of several studies can be synthesized to provide evidence for input to nursing practice.	There needs to be a synthesis process in the nursing process activities.

D. NURSING PROCESS AND EVIDENCE BEST PRACTICE

The nursing process and evidence-based practice in nursing are distinct but similar processes. The similarity of these two processes is that both always start with a problem that must be solved, and there is a process for each.

The nursing process is a systematic method of solving problems, has dynamic characteristics, and is interconnected, where the nurse starts by finding problems, planning, and providing nursing care to patients (Cooper and Gosnell, 2022). Experts define Evidence Best Practices in nursing differently. Evidence Base Practice (EBP) is in nursing the use of the best evidence derived from current research results in a thoughtful, clear, and careful

manner regarding patient care (Grove and Gray, 2023). The ANA Scope and Standard Practice (2010) defined EBP as a paradigm in problem-solving systems that impact delivering high-quality health care (Cooper and Gosnell, 2022). Slightly different from The ANA Scope and Standard Practice, Polit and Tatano Black (2017) stated that evidence is best practice in making patient care decisions using the best evidence derived from research conducted by nurses and other professional health workers. Whereas (Ellis, 2019) argued that nurses could use EBP in carrying out the nursing process and use it to advance nursing. This is likely the best approach because the strategy is well-defined and patient-focused, and nurses are familiar with it (Ellis, 2019). EBP in nursing has stages in carrying out its activities, including (Moule,2015).”

1. Identify a problem from practice, specifically nursing, and turn it into a question
2. Find the best available evidence regarding the question through a systematic search of the literature
3. Value of evidence found
4. Identify the best evidence according to patient needs and preferences
5. Evaluation of the impact of using evidence best practice

The similarity between the EBP stages, according to Moule, and the nursing process is that stage 1 is an assessment, stages 2,3,4 are planning, followed by implementation, then stage 5 is evaluation. According to the Critical Appraisal Skills Program (CASP), EBP steps consist of three steps, including finding evidence, assessing, and the last step is applying evidence (Ellis, 2019)

SUMMARY

The nursing process bears a resemblance to the scientific method. The nursing process can be stated as the scientific method because there are several characteristics of the scientific method in the nursing process, including processes that are scientific, systematic, generalizable, and a tool for solving problems. Nevertheless, the

two processes are different. The difference lies in finding information and defining problems, efforts to analyze data, developing solutions and making decisions, carrying out implementation and evaluation activities. Likewise, the nursing process has similarities with the research process. The similarities lie in the use of abstract critical thinking and clinical reasoning. However, the two processes are different. The difference lies in the complexity, breadth, underlying theory, accuracy and control exercised, the results obtained, and the process of synthesizing the activity results. Likewise, the nursing process has similarities with evidence-based practice in nursing. The similarity is that it always starts with a problem that must be solved, and there is a process in it. However, the two processes are different. The difference is regarding the steps and techniques for solving patient problems.

REVIEW QUESTIONS

1. The nursing process is different from the research process. The difference lies in.
 - a. Focus scope
 - b. Underlying theory
 - b. Use complex logic
 - c. Identify new problems
 - d. Use critical thinking skills
 - e. There is a synthesis of the results obtained

2. The nurse identifying a problem in the research process is equivalent to which stage of the nursing process?
 - a. Assessment
 - b. Nursing diagnoses
 - c. planning
 - d. implementation
 - e. Evaluation

3. The nurse is developing solutions to problems and making the best decisions using the scientific method. At which stage of the nursing process are these equivalents?
 - a. Assessment
 - b. Nursing diagnoses
 - c. planning
 - d. implementation
 - e. Evaluation

4. Which statement is true regarding the relationship between the concept of the nursing process, the scientific method, problem-solving, and the research process?
 - a. Only the research process uses the scientific method
 - b. The scientific method is only used in the nursing process
 - c. The nursing process uses the scientific method in a narrow focus
 - d. The research process is a process of solving problems in a narrow scope
 - e. The nursing process and the scientific method are two very different things; there is no relationship between them

5. The nursing process has similarities and differences with the research process. Which similarity of the nursing process with the research process is most appropriate?
 - a. Focus scope
 - b. use of theory
 - c. The extent of the problem
 - d. Use of critical thinking skills
 - e. There is a synthesis of the results obtained

6. One of the outputs of the research process is to produce evidence of best practices. At what stage of the nursing process is evidence best practice applied?
 - a. Assessment
 - b. Nursing diagnoses

- c. planning
 - d. implementation
 - e. Evaluation
7. Which of the following statements best defines evidence-based practice?
- a. Use of the best evidence obtained from the module
 - b. The problem-solving process uses the best evidence
 - c. The problem-solving process uses the nursing process
 - d. The best evidence for good nurse-patient reciprocal communication
 - e. The best approach is obtained from the scientific method and problem-solving process
8. A nurse on a hospital nursing committee is thinking about the best way to shorten the healing time of diabetic wounds in the internal medicine ward. Which action should the committee take first to determine an effective strategy?
- a. Seek advice from existing staff
 - b. Review various relevant literature
 - c. Do the research process immediately
 - d. Use actions that are already routinely used
 - e. Interviewing diabetes mellitus clients to get their views
9. Problem-solving has many similarities to the nursing process but has differences. What is the difference between these two things?
- a. Using method
 - b. Using analysis
 - c. Preparing time
 - d. Develop solutions
 - e. Used because of a problem

10. What is the most appropriate relationship between the nursing process and the scientific method?
- a. The nursing process uses the scientific method
 - b. The scientific method is part of the nursing process
 - c. The scientific method uses the steps of the nursing process
 - d. The nursing process and the scientific method are problem-solving processes
 - e. The nursing process and the scientific method have evidence-based outputs

Answer Keys: 1. a 2. b 3. c 4. c 5. c 6. d 7. b 8. b 9. c 10. a

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CHAPTER 4

CRITICAL THINKING IN NURSING

ASSESSMENT



LEARNING OBJECTIVES

- Identify the different types of assessment
- Determine subjective data and objective data
- Perform data validation
- Define organization and documentation of data

A. DEFINITION ASSESSMENT

Experts defined assessment differently. Carolyn Jarvis (2021) defined as the collection of data regarding an individual's health status by conducting medical history interviews to obtain subjective data, physical examination through inspection, percussion, palpation, and auscultation, along with patient records and laboratory studies to obtain objective data. Slightly different Carolyn Jarvis (Janice Thompson, 2022) stated that health assessment is a study of the patient as a whole, which includes a method used to establish primary health data in an organized, systematic manner through a continuous process of collecting, validating, and grouping data. The process of collecting various types of individual data is carried out for the past and present, is an assessment of factors that influence individual health and well-being, including physical and behavioral aspects, spirituality, social and economic factors, cultural variations, and considerations of the development of the patient's life. Another definition is the basis for providing appropriate and competent care to people who need health care (DeLaune et al., 2019). Some of the critical thinking activities that nurses use at the assessment stage are: (Weber and Kelley, 2014)

1. Determine the abnormal data and the patient's strength and risk using the basis of science, then differentiate whether the data is subjective and objective
2. Group similar data
3. Determine conclusions on each grouping of similar data.

B. THE PURPOSE OF AF ASSESSMENT

The purposes of carrying out the assessment phase (Gray et al., 2019).

1. Organize data regarding the client's physical, psychosocial, emotional, and other data so that actual or potential health problems and health promotion behavior can be identified.
2. Ensure functional abilities, the presence or absence of dysfunction from clients, normal daily activities, and lifestyle patterns through an assessment process.
3. Provide nurses with information about abilities, behaviors, and skills that clients can use during the treatment and recovery.
4. Provide the opportunity for nurses to form therapeutic interpersonal relationships with clients, where during this stage, clients can discuss healthcare problems and goals with nurses.

C. TYPE OF ASSESSMENT

There are three types of nursing assessments: (DeLaune et al., 2019).

1. Comprehensive Assessment

The nurse performs a comprehensive assessment when the patient enters the health care service. The nurse's activities include collecting a complete medical history to determine the patient's needs. This initial assessment is thorough and takes about 30 minutes. The comprehensive assessment produces data referred to as a database. This database provides a baseline for measuring changes in a person's health status, including an assessment of the physical and psychosocial aspects of a person's health, perception of health, the presence of health risk factors, and coping patterns. Database assessment

is planned and complete to ensure all relevant information is obtained. The use of database format design to obtain information related to using the nursing model is essential. Several ways can be used, including the body system organization method, health patterns, according to Gordon and patterns of individual unity (NANDA).

The head-to-toe assessment is the most organizational assessment system to collect comprehensive physical data. Other ways of collecting data can use functional statuses, but they are less efficient (Jensen and Servello, 2023).

As an example of an assessment organization method in a physical examination using the body system organization method, some include:

- a. Respiratory system: nasal flarings, breath sounds, rate, depth, cough, chest symmetry, pain, or discomfort.
- b. Cardiovascular system: apical pulse, rhythm, heart sounds, pain, or discomfort.
- c. Circulatory system: speed, rhythm, pulse quality, pain, or discomfort.
- d. Integumentary system: color, temperature, turgor, edema, lesions, hair distribution, pain, or discomfort.
- e. Neurological system: mental status, pupil reaction, eyesight and image, ability to hear, taste, taste and smell, pain or discomfort.
- f. Musculoskeletal system: muscle tone, strength, gait, balance, range of motion, pain, or discomfort.
- g. Gastrointestinal system: condition of lips, tongue, gums, teeth, presence of gag reflex, presence of bowel sounds, presence of abdominal distention or tenderness of abdomen, impaction, hemorrhoids, pain or discomfort.
- h. Urogenital system: the presence of a distended bladder, vaginal/urethral discharge, pain, or discomfort.

2. Focused Assessment

Focus assessment focuses on patient care needs or risks of health care problems or can be stated to have a limited scope; the results in this assessment are called focus data. The nurse uses a focused assessment to provide specific information in determining the status of an actual problem or risk, then nurses and health workers immediately solve the problem; after the problem is resolved, a more comprehensive assessment needs to be carried out. Information can be obtained from a significant other during a focused or emergency assessment; focused assessment is often used in health service institutions that anticipate short hospitalization, such as healthy children's clinics or Outpatient Clinics. But it can also be done in the Emergency Department, where a focused assessment is carried out and will be followed up with a comprehensive assessment, or in other inpatient installations.

3. Ongoing Assessment

When a problem is identified during a comprehensive or focused assessment, then systematic follow-up is needed in the form of continuous assessment, which includes systematic monitoring and observation related to a specific problem. Ongoing assessment is carried out once a problem has been identified and a care plan is implemented to address the problem. This activity will expand the database or confirm the validity of the data obtained during the initial assessment. Ongoing assessment will evaluate changes in the patient's health over time. The nurse will carry out systematic monitoring and observation to determine the patient's response to nursing interventions and identify potential problems.

Focus assessment is the primary method for continuous assessment. After identifying the actual problem or risk of the patient, the patient will then carry out ongoing assessments or periodic focus assessments to monitor the patient's health status. When conducting a focused assessment, the nurse

should personally ask herself the following questions: (Alfaro-LeFevre, 2014)

- a. Are there any signs and symptoms observed that demonstrate the problem is present now? Did the situation or things get better, worse, or stay the same?
- b. Are there factors contributing to the problem that can be reduced, controlled, or eliminated to reduce or prevent the problem?
- c. How does the individual/patient feel about overcoming or preventing the problem? Can he state how to solve the problem?

An example provides focus questions that can be used on the problem of difficulty of breathing. Focus assessment of difficulty breathing due to sputum accumulation...

- a. Are there signs and symptoms that can be observed from difficulty breathing due to sputum accumulation (for example, the appearance of tightness, increased respiratory rate, nasal flaring, use of accessory muscles, additional breath sounds Ronchi or wheezing? Are the symptoms getting better, worse, or staying the same?
- b. Are there any factors that affect breathing difficulties due to sputum accumulation (lack of warm fluid intake, low coughing ability, medication, body position) that can be modified to reduce or prevent breathing difficulties?
- c. How does the individual/patient feel about managing or preventing constipation? Can he relate to how to overcome or prevent difficulty breathing?

There are steps in nursing assessment activities. These steps are collecting, validating, organizing, and documenting data.

D. STEPS OF ASSESSMENT

1. COLLECTING DATA

Data collection is obtaining information about a patient or client. Data collection begins when the patient or client meets the healthcare system for the first time. This can also occur in outpatient conditions. On admission to the hospital, a comprehensive nursing assessment is performed, and pertinent data are documented. Data collection continues throughout the patient's stay in the hospital, where changes occur and new information is presented.

It is better to use as many sources as possible in collecting data. However, it is essential to remember that the patient should be considered the primary information source. Other sources of information in data collection are family or significant other, health care provider and medical records, consultations, interdisciplinary conferences, diagnostic test results, and relevant literature.

When collecting data, nurses should have strong critical thinking, interpersonal and technical skills to obtain appropriate information and make relevant observations during the data collection process. The nurse's success in collecting data will depend on her expertise in conducting interviews and physical examinations.

1. Interview

One crucial part of data collection is conducting interviews with patients. In the interview, a contract occurs between the nurse and the patient to obtain information about what the patient needs in the health sector and what the nurse wants to offer. Together both the nurse and the patient jointly have a goal to be able to occur optimal health for the patient. An interview contract includes the time and place of implementation, self-introduction and the nurse's role, purpose, length of time, expectations from the interview conducted, presence of other people such as family and other health workers, and confidentiality.

Communication techniques that can be used to obtain information about patients include open questions, which are

commonly used to get to the main problem, where this condition occurs at the beginning of the interview to encourage patients to express their opinions, closed questions, which aim to obtain specific information, reflection is used to obtain detailed data, empathy aims to make the patient feel welcome and strengthens the nurse's relationship with the patient, clarification has the goal of concluding patient statements, confrontation is helpful in clarifying inappropriate information, interpretation aims to link events, look for relationships and determine causes, explanation aims to explain the patient regarding specific information, observation is helpful to get a picture and appearance of the patient and pattern of interaction, use of understandable concepts, use of organized assessment tools, being an active listener.

The results of an effective database assessment interview will describe the patient's complete medical history. The parts of the patient's medical history are:

- a. Biographical data includes name, address, telephone number, place and date of birth, gender, status, ethnicity, and occupation. In each healthcare facility and the category of patients based on the level of development, there will be differences in the addition of required biographical data.
- b. Reason for coming to health services/major complaint is a brief statement from the patient describing the reasons for visiting a health service. Some examples are chest pain, shortness of breath, and fever.
- c. Current Health History. To obtain data regarding the patient's current medical history, nurses can use various methods, including:
 - 1) For healthy patients, the nurse can ask about their current general health status.
 - 2) Sick patients can use the following:
 - a) Eight critical characteristics include the location of the problem, the characteristics or quality of the problem, the quantity or severity of the problem, the timing

(appearance, duration, and frequency of the problem), the situation/setting of the problems, factors that increase or decrease, related factors and patient perceptions.

- b) PQRST, which includes P=Provocative (which causes problems) and Palliative (which reduces problems), Q=Quality (quality problem) and Quantity (quantity of problems), R=Region or Radiation (where is the location of the problem or does the problem spread), S=Severity Scale (scale of problem distribution. Specifically, for pain, the question is counted from one to ten on a scale of how much pain is felt. As for other problems, the question is whether the problem interferes with activities), T=Timing (time which includes onset or when it occurs and duration or duration of occurrence and frequency or how often it occurs).
- d. Past Health History
Past experience with the disease will provide clues about how the disease gives meaning to the patient and how the patient responds to the disease. Past medical history includes a history of illness in childhood, past accidents or injuries, past severe or chronic illnesses, whether you have been hospitalized, whether you have had surgery, history of pregnancy and birth, hospitalized, whether you have had surgery, history of pregnancy and birth, immunizations, past special medical examinations, allergies, and current treatment.
- e. Family History
The medical history of close relatives, such as spouses and children, is as vital as other data relating to whether the patient has prolonged contact with relatives with infectious diseases, environmental hazards such as cigarette smoke, or diseases passed down from family members to the patient. To better display family history data, nurses can use a

genogram. A genogram is a family tree graph using symbols to describe gender, relationship, illness, health, or death in three generations, including grandparents, parents, and siblings.

f. Psychosocial History

Psychosocial history includes the language used by the patient, the patient's perception of the disease, self-concept (including self-image, self-ideal, self-esteem, role, self-identity), emotional states, concern for others, relationships with family, relationships with other people, hobbies, adaptability, and defense mechanisms.

g. Functional Assessment in Daily Activities

Functional assessment questions provide data about the patient's daily life activities, such as sleeping patterns, defecation, urination elimination patterns, eating patterns, drinking patterns, personal hygiene, and activity patterns.

2. Nursing physical examination

The physical examination of nursing includes inspection is an examination with critical and careful observation; auscultation is an examination by hearing and using a stethoscope; palpation is an examination by touch and taste; and percussion is an examination by tapping and hearing. Some guidelines in carrying out physical examinations are that nurses always improve communication with clients, should not rely on memory alone, record physical examination results in a notebook, and choose an organizational assessment method and use it consistently. The nurse performs a physical examination of all body systems, starting with a general examination to obtain general conditions, vital signs, height, and weight. Then, proceed to all body systems from the head to the feet. These systems are the head and hair, eyes, nose, ears, mouth and pharynx, neck, integument, breast and axillary, thorax including respiratory and cardiovascular examinations, abdomen, urogenitalia, and neurology.

Information on the results of the assessment can be divided into subjective and objective data, such as the following (Cooper and Gosnell, 2022)

- 1) Subjective data is what the patient or client states. Subjective data are information about feelings or perceptions from the patient or his family.
- 2) Objective data is factual information in the form of signs that can be observed or measured.

The purpose of separating the data into two categories is to help the examiner compare what was observed with what the patient stated to the examiner. A comparison of examples of subjective and objective data can be seen in Table 4.1.

Table 4.1 Comparison of examples of subjective and objective data

Subjective Data	Objective Data
I am tired	Dark circle under eyes, yawning, naps during the day
My foot hurts	1 cm x 3 cm open lesion on the right heel
I am nervous	Wringing hands, pacing in hall, pulse 118x/min, respiration 32x/min
I have difficulty breathing because of phlegm	The appearance of shortness of breath, nasal flaring, respirations 36/min, use of accessory breathing muscles, Ronchi breath sounds.

Subjective and objective data that have been identified can act as signs or symptoms (also called cues). Signs or symptoms prompt the examiner to make a conclusion or form inferences. Table 4.2 shows the cues, including subjective and objective data, then the conclusion.

Table 4.2 Cues and inferences

Cues		Inferences
Subjective	Objective	
Lie down with the arm tilted to the side, tense States unable to turn for some time Report pain as eight on a scale of 0 to 10	Looks uncomfortable in the surgical area	Pain is severe and limits the patient's ability to move and reposition.
Stated that he had just received an injection of antibiotic	There is a rash over the body	Had an allergic reaction to an antibiotic
I have a burning feeling when chewing food	-	Possible inflammation of the mouth

Inferences can be made from a single cue or sign or symptom or a group of cues or signs or symptoms. Remember that the more cue we have, the easier it will be to validate or correct inferences. The ability to identify meaningful cues or signs or symptoms and make correct inferences will be influenced by expertise in observation, nursing knowledge, and clinical practice expertise.

2. DATA VALIDATION

Validation is an action to confirm or verify data (Taylor, Lynn, and Bartlett, 2023). Data validation is ensuring that data is accurate. After information from the patient has been collected, the consistency of the subjective and objective data needs to be confirmed. Confirmation of the validity of data collection can be checked through verbal or interviews with patients to check the assumptions or conclusions that nurses reach are correct. To validate subjective data, nurses can use objective data from the results of a physical examination, laboratory, or diagnostic tests. For example: if the patient complains of weakness and dizziness, it is necessary to observe whether they are pale and the conjunctiva is anemic and check whether the hemoglobin level is low (Yoost, 2019).

Data validation is to compare data with data from sources to confirm the accuracy of the data focusing on ensuring the data is factual or correct. In other words, making sure the signs and/or symptoms and the inferences are correct.

Suppose the examiner does not yet have certainty about the information being validated. In that case, the examiner must obtain more data to prove what we have checked as a fact and so that the data is complete. This is because as the examiner tests the data, the examiner will often record additional information that is overlooked.

Example:

- The examiner looks at the patient with a withdrawn attitude. The examiner concluded that he was depressed.
- But the examiner needs to validate by asking: “Tell me what you feel?” or “You seem very quiet like you are depressed.

Data validation helps the examiner to avoid missing related information, avoid misunderstanding or misunderstanding the situation, and avoid wrong conclusions or focusing in the wrong direction (Alfaro-LeFevre, 2014)

3. DATA ORGANIZATION/DATA CLASSIFICATION

Data collection must be organized to be beneficial to health care professionals and other personnel, including patients. Data is organized into categories, then classified. Data grouping is the process of gathering data to identify the client’s problem areas and strengths. Many healthcare hospitals use an admissions assessment format that will assist in collecting and organizing data (Gray, 2019). Data cluster means grouping data related to information together. Information will be more meaningful when the relationship between data is established. Clusters enable the nurse to organize data, eliminating what is insignificant, irrelevant, and repetitive by reducing data into manageable categories (Nugent and Vitale, 2023).

The assessment model is a framework that provides a systematic way to organize data. Some models are described as (Gray, 2019):

1. Hierarchy of Need

Maslow's hierarchy of need offer that individual basic needs (physiological) must be found before higher needs are found. An initial assessment of all physiological needs is required, followed by an assessment at a higher level when using this model.

2. Body Systems Model

The body system model organizes data collection related to the function of organs and tissues in various body systems (such as cardiovascular, respiratory, gastrointestinal, and others). Doctors often use this model, hence the name "medical model."

3. Functional Health Patterns

Gordon's Functional Health Patterns provides a data collection framework focused on health functioning patterns. Health functioning pattern area clusters information regarding client behavioral patterns and any recent changes to determine if the patient's current response is functioning or dysfunctional. For example, the nurse assesses a patient with an impaired elimination pattern due to diarrhea several times a week. The focus of data collection is on elimination habits, diet, and fluid intake before diarrhea occurs and their effect on changes in the patient's ability to function and lifestyle.

The 11 functional health patterns are health perception/health management pattern, nutritional/metabolic pattern, elimination pattern, activity/exercise pattern, cognitive/perceptual pattern, self-perception/self-concept pattern, sleep/rest pattern, role/relationship pattern, sexuality/reproductive pattern, coping/stress-tolerance pattern, value/belief pattern.

- **Theory of Self-Care**

One of the initiators of the theory of self-care is Orem. This theory is based on the client's ability to carry out self-care activities. Self-care is a learned behavior with intentional actions responding to self-needs, including individual activities to maintain health. This theory focuses on assessing the client's ability to meet self-care needs and identify self-care deficits. This theory directs attention primarily to the illness state.

The self-care essentials are:

1. Maintenance of sufficient air
2. Maintenance of sufficient water
3. Maintenance of a sufficient of food
4. Provision of care associated with elimination processes and excrement
5. Maintenance of a balance between activity and rest
6. Maintenance of a balance between solitude and social interaction
7. Prevention of hazards to human life, human functioning, and human well-being
8. Promotion of human functioning and development within social groups in accord with human potential, known human limitations, and the human desire to be normal

Below is an example of how to organize data with the following data:(Alfaro-LeFevre, 2014)

1. Male, 33 years old
2. Married, do not have children
3. Work as a driver
4. Hematocrit: 5.1 %, Hemoglobin = 8 gr%
5. Temperature: 37 degrees Celsius, Pulse: 64x/minute, RR: 12 x/minute
6. Blood pressure: 110/70 mm Hg
7. Unconscious due to head injury
8. Spontaneous breathing
9. Clean lungs
10. History of headaches

11. Urine through the Foley catheter flow smoothly
12. The patient's wife stated that her husband always had constipation
13. NG tube for feeding every 4 hours
14. Stiff extremities
15. Has a reddish area on both elbows
16. Allergy to penicillin
17. The patient's wife stated: she felt she would be separated from her husband.
18. The patient's wife stated that before the accident, her husband was physically fit.
19. The patient's wife stated that they were considering converting to Catholicism prior to the accident.

Organization of Data with Human Needs (Maslow)

- o Physiological Needs: 1,4,5,6,7,8,9,10,11,12,13,14,15,16,18
- o The need for a sense of security and comfort: 7,10,13,17,19
- o Needs to be loved and loved: 2,17,19
- o Self-Esteem Needs: 2,3,18
- o Need for Self-Actualization: 3

Data Organization with Health Function Patterns (Gordon)

- o Patterns of Health Perceptions-Health Management: 10,18
- o Nutrition-metabolic patterns: 4,5,6,8,9,11,13,15,16
- o Elimination pattern: 11,12,13,15
- o Pattern of Activity-Exercise: 14
- o Cognitive-Perceptual Patterns: 7
- o Rest-Sleep pattern: 7
- o Patterns of self-perception-self-concept: 18
- o Role-Related Patterns: 1,2,3
- o Sexual-reproductive patterns: 2
- o Coping-Stress Tolerance Pattern: 17
- o Value-Trust Pattern: 19

- **Data Organization with Body Systems**

- o Client Profiles: 1,2,3,4,5,6,7,10,16

- o Systems

- Respiration: 8.9

- Cardiovascular: 5,6,9

- Nerves: 7.10

- Musculoskeletal: 14

- Gastrointestinal: 12.13

- Genitourinary: 11

- Integuments: 15

4. DATA DOCUMENTATION

Assessment data should be recorded and reported. The nurse must decide which data to report immediately and which to record only. The data reflects a significant change from normal. Data that only need to be recorded include data on prescribing medication reducing headaches and data on dry and intact abdominal dressings. It is essential that records of assessment data be accurate and complete. This is because the assessment documentation is a source for communicating information to other health workers. Basic information through this documentation is to determine the quality of service and correct management options, which include data to support problem identification (Gray, 2019)

E. THE EXAMPLE OF NURSING ASSESSMENT

Below is an example of a nursing assessment:

**NURSING ASSESSMENT
IN CLIENTS WITH CHRONIC KIDNEY DISEASE
IN-ROOM A HOSPITAL B**

1. Client Identity

Name : Mr. M

Lifespan : 50 years

Gender : Male

- Ethnicity/Nation : Javanese/Indonesian
Religion : Islam
Occupation : Trader
Education : SMA
Address : X
Date of Entry : April,05,2021
Medical Diagnosis : Chronic Renal Failure
Registration No : 513.xxx.xx
2. Identity of the Person in Charge
Name : Mrs. A
Age : 45 Years
Education : High School
Occupation : Housewife
Address : Menganti
Relationship with Client : Wife
Marital status : Married
3. Medical History
- a. Chief Complaints
The client said that he wanted nausea
- b. Current Health History
The client said that he was nauseous because his mouth had an unpleasant taste, and it decreased when he rinsed it. The client also complained that he wanted to vomit, had no appetite, and his stomach was getting bigger and swollen in both legs. In addition, the client also complained of shortness of breath and weakness. This complaint caused disruption of client activities, which were primarily done in bed. Complaints of nausea started one week ago and were getting worse at this time.
- c. Past medical history
The client was hospitalized on January 20, 2021, with a diagnosis of chronic kidney disease for four days. The client has a history of using gout medication but stopped \pm 2 years ago.

- d. History of allergies
The client has no history of allergies to certain drugs or foods.
- e. Family Medical History
The client gets hereditary hypertension from her parents.

3. Health Patterns

1) Nutrients

a) Before the illness

The client eats three times a day and runs out of 1 portion at each meal. Clients consume food, including rice, vegetables, and side dishes. Clients drink 6-5 glasses per day (1500) of fresh water.

b) During illness

The client eats a porridge diet provided by the hospital three times a day (morning, afternoon, and evening). Clients say they have less appetite and can only spend three tablespoons. The client is not allergic to food but limits fruits that contain lots of water. Clients say they only drink 2-4 glasses/day or about 800 cc/day of fresh water. The client has an RL infusion of 20 drops/minute (1440cc).

2) Elimination Pattern

a) Before the illness

The client stated urinating five times per day, yellow color, characteristic odor, and no complaints when urinating. The client's family said that the client had bowel movements one time per day in the morning, the color of the stool was yellow, the smell was characteristic, the consistency was dense, there were no complaints when defecating, and the client did not like laxatives.

b) During illness

The client says urinating four times per day with the amount of urine 550cc per day with yellow urine with

a characteristic odor. The client says he is urinating a little. The client says he has not had a bowel movement in the hospital.

3) Activity Patterns

a) Before the illness

The client works as a trader. The client says he can do activities independently without help, such as bathing, eating, urinating, defecating, and dressing, but the client says that he gets tired quickly. Clients use their free time to gather with family.

b) During illness

The client said that his activity is limited, unlike when he is healthy, because the client is weak and gets tired quickly. Clients perform activities with assistance. Clients are assisted by the family when sitting, walking, eating, drinking, and dressing. The client was able to move from bed.

4) Rest-sleep needs

a) Before the illness

The client said that he sleeps at around 9.00 PM and then wakes up at 05.00 AM to perform the morning prayer.

b) During illness

The client said experiencing insomnia. The client says to sleep for 9 hours at night, 1 hour during the day, and the client prays before going to bed.

5) Personal Hygiene Pattern

a) Before the illness

The client said that he takes a shower two times per day, morning and evening, with brushing his teeth and washing his hair four times a week.

b) After illness

The client said that he took a shower once a day in the morning, brushed his teeth twice a day, and never washed his hair during his hospitalization.

- 6) Maintenance of health
 - a) Before the illness
The client does not smoke and does not drink alcohol or drug dependence.
 - b) After illness
The client has never smoked or drunk; the client is not drug dependent but takes medication according to the therapy given.
- 7) Relationship patterns
The client married once and lived with the wife.
- 8) Coping or stress tolerance
Decision-making in carrying out actions is carried out by the family, especially the client and the client's wife.
- 9) Cognitive and Perceptual Patterns
Clients speak fluently.
- 10) Self-concept patterns
The client said he wanted to get well soon and reunite with his family.
- 11) Sexual
The client did not think about his sexual needs.

4. Physical Examination

- a. General circumstances
Level of Consciousness: Compos mentis, GCS: E4V5M6
- b. Vital Signs
TD : 180/110 mmHg
N : 90x/min
Temperature : 36.0 °C
RR : 26x/min
- c. Physical examination
 - 1) Head
Symmetrical, clean head, evenly distributed hair, black hair color begins to gray and there are no abnormalities.

- 2) Eye
The white sclera, anemic conjunctiva, palpebral no edema, light reflex +, pupil isochor.
- 3) Nose
Absent nostril breathing, symmetrical nasal septum position, clean nostrils, no decrease in olfactory acuity, and no deformity.
- 4) Oral Cavity and Tongue
The condition of the lip mucosa was moist and pale. Average size uvula tonsils were centrally located and symmetrical.
- 5) Thorax Examination
 - Inspection: symmetrical chest, respiratory rate 26 breaths per minute, regular rhythm, dyspnea, use of respiratory muscles, use of nasal cannula oxygen 3 liters/minute.
 - Palpation: fremitus vocals palpable throughout the lung fields, symmetrical lung expansion
 - Percussion: resonance over the entire lung field.
 - Auscultation: crackles (+)
- 6) Heart Examination
 - Inspection: no visible ictus cordis, capillary refill time <2 seconds, and no cyanosis.
 - Palpation: ictus cordis palpable in the 5th intercostal space (ICS), and warm acral
 - Percussion: the upper limit on the 2nd ICS II extra sternal line, the lower limit on the 5th ICS midclavicular line left, the right border on the 3rd ICS extra sternal line, and a left limit on the 3rd ICS left sternal line.
 - Auscultation: BJ II Aorta dup, regular and robust intensity; BJ II Pulmonale dup, regular and strong intensity; BJ I Tricuspid lup, regular and strong intensity; BJ I Mitral lup, regular and strong intensity, no other heart sounds.

7) Abdominal Examination

- Inspection: enlarged shape, no lump in the stomach, no vein shadow, no surgical wound in the stomach, and no drain plugged.
- Auscultation: peristalsis 18 times per minute.
- Palpation: no tenderness, palpable fluid accumulation/ascites, and no liver enlargement.
- Percussion: dullness shift (+)

8) Examination of the urinary system

Cleanliness of the urinary system: clean

Ability to urinate: using Foley catheter, size 18, 2nd day, urine production 150 ml/day, yellow, distinctive urine odor, no bladder distension, no tenderness in the bladder.

9) Examination of the Musculoskeletal and Integumentary Systems

- Free joint movement
- No spinal abnormalities
- No fracture
- Good skin turgor
- No wounds
- Pitting edema grade +3

10) Endocrine System Examination

There was no enlargement of the thyroid gland, lymph, and signs of triad DM.

5. Supporting Examination

- | | |
|--------------------------|---------------------|
| 1) Hemoglobin 9,0 g/dl | (14,0 – 18,0 g/dl) |
| 2) Hematocrit 28.1 % | (37.0 – 54.0 %) |
| 3) Albumin 3,2 g/dl | (3,5 – 5,5 g/dl) |
| 4) Ureum 132.7 mg/dl | (19.3 – 49.2 mg/dl) |
| 5) Creatinine 14.1 mg/dl | (0.7 – 1.3 mg/dl) |

SUMMARY

Assessment is the first stage in the nursing process. There are several types of assessments, including a comprehensive assessment that is carried out when the patient first enters the health care system, a focused assessment that is carried out if you want to focus on the patient's needs or problems. This ongoing assessment is carried out when an assessment has been carried out, both comprehensive and focused on being continued. The assessment steps are the collection, validation of the organization or classification, and data documentation. Critical thinking at this stage includes determining abnormal data, strengths, and risks to distinguishing subjective and objective data, then grouping similar data and concluding with conclusions.

REVIEW QUESTIONS

1. Patient, 51 years old, was admitted to the hospital two days ago with chest pain. The doctor prescribes the patient for EKG, chest X-ray, and complete blood count, including blood sugar. From the results of the interview, the patient stated, "I feel better today; there is no pain. This is because the treatment has relieved the discomfort." The patient looked a little tired, spoke rather slowly, and sighed. When his wife came to see him, she was happy, but he looked depressed. Which is subjective data?
 - a. Chest pain
 - b. A little tired
 - c. Looks depressed
 - d. I feel better today; there is no pain
 - e. Complete blood count, including blood sugar
2. A male patient, aged 45 years, entered the hospital complaining of pain in his left hand due to a collision injury and complaining of worry about how his wife and children were doing. Stabbed pain scale of 8 and answered, "Can the wound be healed? On physical examination found: vital signs: BP; 110/70 mmHg, RR: 20x/minute, temperature 36.5 Celcius, facial grimacing and

restlessness, wound 10 cm long, 3 cm wide, and 2 cm high.

Which is objective data?

- a. Worried
 - b. Collision injury
 - c. Pain in the left hand
 - d. Facial Grimacing
 - e. Can the wounds be healed?
3. A patient stated that his chief complaint was chest pain. What are the nurse's following questions to develop the patient's chief complaint?
- a. What is causing your chest pain?
 - b. Where does your chest pain occur?
 - c. What are you doing to reduce chest pain?
 - c. How would you describe your chest pain?
 - d. Since when have you complained of chest pain?
4. During a medical history review, the patient stated he had a peptic ulcer (stomach problem). Is the nurse's statement appropriate to determine the patient's feeling condition?
- a. How do you solve this problem?
 - b. Is it true that you have stomach problems?
 - c. Why do you think you have stomach problems?
 - d. Why do you tell me that you have stomach problems?
 - e. I didn't see any of your information in the review format.
5. The nurse is conducting a focus assessment in the internal medicine ward. What phenomenon is appropriate that the nurse is conducting a focused assessment?
- a. Nurses use basic data formats
 - b. Nurses use it to get specific information
 - c. Nurses perform systematically and comprehensively
 - d. The goal is to obtain data on all aspects of the patient's health status
 - e. The nurse assesses the first meeting with the patient

6. The nurse checked and found that the patient's (mother's) breathing was 38x/minute. What should the nurse's statement be appropriate?
 - a. You have to rest a lot.
 - b. Do you have asthma?
 - c. Are you feeling anxious?
 - d. Mother has shortness of breath.
 - e. Do you experience shortness of breath?

7. A patient states, "I'm afraid if I really have diabetes." In which human needs, according to Maslow, will we include the above statement?
 - a. Self-actualization
 - b. Self-esteem needs
 - c. Physiological needs
 - d. The need to be loved and loved
 - e. The need for security and comfort

8. The patient (Mother) said: "I have a rash, and it comes and goes." What will the nurse answer next?
 - a. Do you have allergies?
 - b. How long have you had the rash?
 - c. It looks like you have skin irritation
 - d. Where is the area, Mom? Let me check
 - e. It looks like you are having an allergic skin reaction

9. A female patient, a 29-year-old mother, has two young children. The patient was admitted to the hospital with a diagnosis of diabetes. Today a patient enters the room and states, "The doctor says I have diabetes. I can't imagine that I have diabetes. None of the family suffers from diabetes. I feel fine. I can't imagine how I can make myself change with the food I eat. The diet pattern that I live in makes me confused at this time. That's why I weigh 100 kg when you weigh me." The examination results of vital signs found temperature: 36.8 degrees Celsius,

pulse: 88x/minute regular, RR: 20 x/minute, and blood pressure: 144/88 mmHg. The results of laboratory tests for blood sugar were 144 mg/dl. Which data is really valid?

- a. I feel fine
- b. Weight 100 Kg
- c. The patient's age is 33 years
- d. Current blood sugar: 144 mg/dl
- e. The patient stated that I became confused

10. Data found: 1. Age 34 years, male, 2. Medical diagnosis: Dengue Hemorrhagic Fever (Dengue Fever), 3. Not yet married, 4. Occupation: private employee, 5. Temperature: 38.5 degrees Celsius, Pulse: 90 x/minute, RR: 20 x/minute, BP: 110/70 x/minute, 6. He stated that he had a fever and was not feeling well for one day, 7. He stated that he had no appetite, 8 You can see petechiae on the lower right and left hand. Which data does not include a patient profile:

- a. Male
- b. Age 34 years
- c. Not yet married
- d. Private employee
- e. Pulse:90x/minute

Answer Keys: 1.d 2.d 3. a 4.a 5.b 6.e 7.e 8.d 9.d 10.e

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CHAPTER 5

CRITICAL THINKING IN NURSING

DIAGNOSES



LEARNING OBJECTIVES

- Summarize the meaning of nursing diagnoses.
- Demonstrate differences between nursing diagnoses, medical diagnoses, and collaborative problems.
- Determine the different types of nursing diagnoses
- Demonstrate the components of a nursing diagnoses
- Determine the steps for establishing a nursing diagnoses
- Make a nursing diagnoses statement

A. DEFINITION OF NURSING DIAGNOSES

A nursing diagnoses, according to NANDA, is a clinical assessment of human response to a health condition or life process, or vulnerability to such response, by an individual, caregiver, family, group, or community (Herdman, Kamitsuru, and Lopes, 2021). A nursing diagnoses is a basis for selecting nursing interventions that are the responsibility of the nurse in order to achieve the expected results. In this stage, the nurse begins to classify information from the client and formulates an assessment of the client's health evaluation. Nursing diagnoses can be formulated correctly if the nurse thoroughly analyzes the client's health status using clinical reasoning. Action in determining nursing diagnoses requires appropriate and quality action. That is, if a nurse is formulating a nurse diagnoses, it must be ensured that the nurse is qualified to make nursing diagnoses and is willing to accept responsibility for handling them (Peate, 2020). Some of the critical

thinking activities that nurses usually use at the nursing diagnoses stage are analyzing, synthesizing, and interpreting, making a list of problems, and considering the presence of a problem and its relation to other problems (Alfaro-LeFevre, 2020).

B. DIFFERENCE BETWEEN NURSING DIAGNOSES AND MEDICAL DIAGNOSIS

Nursing diagnoses have many differences from medical diagnoses. The differences can be seen in Table 5.1 (DeLaune et al., 2020).

Table 5.1 Difference between nursing diagnoses and medical diagnoses

NURSING DIAGNOSES	MEDICAL DIAGNOSES
Focus on human responses or individual, family, and community responses to recognize conditions or problems.	Focus on pathological conditions or disease status
A clinical decision that identifies individuals or groups regarding actual risk or wellness response about health status or problems.	A clinical decision regarding specific diseases or pathological conditions
Actions performed by professional nurses are called therapeutic interventions	Action performed by doctors are called treatment

In identifying patient needs and selecting a nursing diagnoses statement, it is necessary to involve the use of a nurse's experience, expertise, and intuition. This is a diagnostic or clinical judgment activity. Efforts to establish a diagnosis are an essential point in using diagnostic judgment. Diagnostic or clinical judgment is analyzing health data and drawing conclusions to identify nursing diagnoses (Jarvis, 2021). Clinical judgment is a broad terminology of the nurse's cognitive process which forms the basis for determining diagnoses and efforts to manage patients (Rodgers and Harrington, 2020).

C. TYPE OF NURSING DIAGNOSES

Nursing diagnoses can be divided into three types, two types are negative nursing diagnoses, and one type is a positive nursing diagnosis. The types of nursing diagnoses can be explained as follows (Herdman, Kamitsuru and Lopes, 2021).

1. Actual Diagnosis

The diagnosis is a clinical decision related to an individual's response to a client's health condition or life process.

2. Risk Diagnosis

Risk diagnosis is a clinical decision related to the vulnerability that occurs in clients from developing individual responses to health conditions or unwanted life processes.

3. A health promotion diagnosis is a clinical decision related to the motivation and desire to improve health conditions to a more optimal level. The response is expressed by the client's readiness to improve health behavior.

D. COMPONENTS OF NURSING DIAGNOSES

There are two components in nursing diagnoses, including the problem or diagnostic label, which is the naming of a nursing problem, and related factors or diagnostic indicators, which are integral components that can be described as follows (Herdman, Kamitsuru and Lopes, 2021), (Potter et al., 2019), (Fadhillah, 2017).

a. Problem

The problem is the presence of the patient's response to his/her health condition by using the minimum possible words in giving the diagnostic label. We can find ways of labeling problems, such as in the NANDA book and PPNI SDKI book, including validating the labeling of nursing diagnoses followed by definitions. The definition describes the specific characteristics of an individual/s response. The purpose of the definition presented is to help nurses correctly identify the patient's diagnosis. The diagnostic label consists of a descriptor and diagnostic focus. Some examples of diagnostic focuses and descriptors are presented in Table 5.2.

Table 5.2 Some Examples of Diagnostic Focuses and Descriptors

No	Descriptor	Diagnostic focus
1	Deficit	Knowledge
2	Intolerance	Activity
3	Disturbance	Physical Mobility
4	Ineffective	Airway Clearance
5	Impaired	Gas Exchange
6	Imbalanced	Nutrition
7	Decreased	Cardiac Output

A descriptor is a statement to explain how a focus of diagnosis occurs. Below are some frequently used descriptors with explanations. It can be seen in Table 5.3.

Table 5.3 Some descriptors with explanations

No	Descriptor	Explanation
1	Deficit	Insufficient or inadequate
2	Effective	Produces the desired effect
3	Ineffective	It does not have the desired effect
4	Decreased	Reduced both in size, number, and degree
5	Dysfunction	Not working normally
6	Disturbed	Encounter problems or damage
7	Over	Above the expected or required value
8	Less	Below the expected or required value

2. Related factors or diagnostic indicators

Related factors correlate with patient response to actual or potential health problems and change using specific nursing interventions. Related factor covers four categories: pathophysiology, either in biology or psychology; related therapy, both individual and environmental situations; and development. Related factors consist of etiology, a domain in nursing actions, and a condition that will be addressed in nursing interventions. The definition of characteristics is symptoms obtained from interviews, and signs are data that can be observed by carrying out a physical examination. In the PPNI SDKI book, the definition of characteristics is expressed as symptoms and signs, which include:

- a. Prominent, if signs/symptoms are found around 80 until 100 % to validate the diagnosis.
- b. Minor, if signs/symptoms must not be found, but if found, can support the diagnosis.

E. THE PROCESS OF ESTABLISHING A NURSING DIAGNOSIS

The steps in the nursing diagnosis process are as follows ... (Potter et al., 2021)

1. Data Grouping and Data Analysis

The data were grouped into a set of significant signs/symptoms that were obtained during the assessment phase. One data set consists of subjective data and/or objective data and/or risk factors. Data analysis includes recognizing grouped data patterns, comparing them with average values, and then providing conclusions with reasons regarding the patient's response to health problems.

2. Data Interpretation

After the data is analyzed, the nurse and the patient make efforts to interpret the data. Data interpretation involves placing diagnostic labels on patterns or groupings of existing data. The goal is to identify the patient's response to a health problem, whether actual, risk, or health promotion.

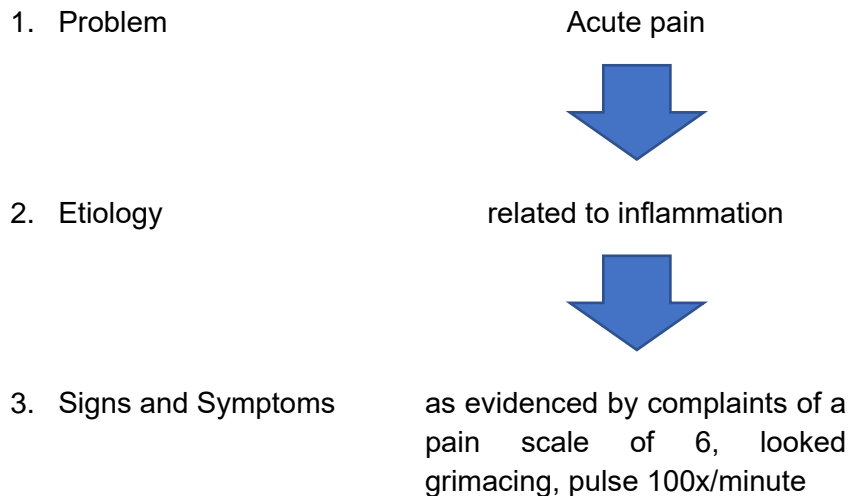
3. Formulation of Nursing Diagnoses

The next step after grouping, analyzing, and interpreting the data is to formulate a nursing diagnosis. In formulating a nursing diagnosis, the problem statement refers to a nursing diagnosis label recognized by the profession and followed by other statements according to the type of nursing diagnosis.

F. WRITING DIAGNOSTIC STATEMENTS FOR ACTUAL NURSING DIAGNOSES

The diagnostic statement for an actual nursing diagnosis has 3 component parts. These components are the problem (P) + etiology (E) + signs and symptoms (defining characteristics) (S) or

abbreviated as PES. Writing a diagnostic statement for an actual nursing diagnosis is connecting the problem (P) with etiology (E) by using a word related to, plus the word as evidenced by, which describes the main signs and symptoms to validate the existence of the diagnosis (Herdman, Kamitsuru and Lopes, 2021), (Fadhillah, 2017). An example of a three-part diagnostic statement for an actual nursing diagnosis can be seen in Scheme 5.1.



Scheme 5.1 An example of a three-part diagnostic statement for an actual nursing diagnosis

G. WRITING DIAGNOSTIC STATEMENT FOR RISK NURSING DIAGNOSES

The diagnostic statement for risk nursing diagnosis has 2 parts. These components are the problem (P) and the associated risk factors, which act as the etiology (E). To write a risk nursing diagnosis, write a two parts statement by putting the problem risk component plus the associated risk factors as evidenced by. This diagnostic statement is made when there are high-risk factors that will cause problems if left untreated (complete information data).

Example: Risk for compromised skin integrity as evidenced by immobility (Herdman, Kamitsuru, and Lopes, 2021),(Fadhillah, 2017)

H. WRITING DIAGNOSTIC STATEMENTS FOR HEALTH PROMOTION NURSING DIAGNOSES

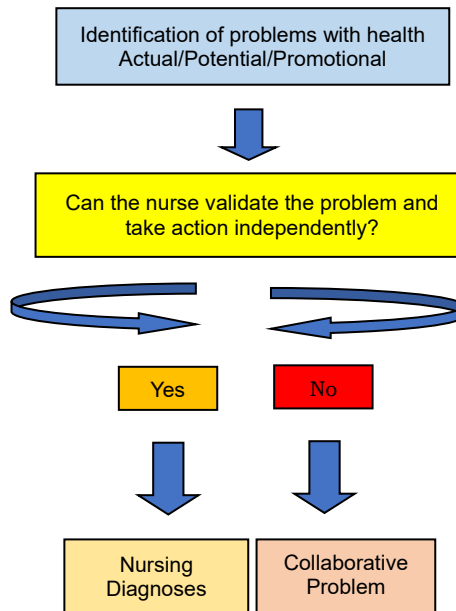
The diagnostic statement for health promotion diagnoses has two parts. These components are the problem (P) and the signs and symptoms (defining characteristics), which act as the etiology (E). To write a health promotion nursing diagnosis, write a two parts statement by adding the problem component to the signs and symptoms (defining characteristics) using as evidenced by. Example: The readiness to increase family coping is indicated by the family's want to improve family coping (Herdman, Kamitsuru, and Lopes, 2021), (Fadhillah, 2017)

I. DIFFERENCES IN NURSING DIAGNOSES, COLLABORATIVE PROBLEMS, AND MEDICAL DIAGNOSIS

Nursing diagnoses are different from collaborative problems. Nursing diagnoses are actual or potential health problems that focus on individual or group responses for which the nurse is responsible and accountable for independently identifying and treating. On the other hand, collaborative issues are actual health problems or risks (complications) that focus on the pathophysiological response of the body (on trauma, disease, diagnostic tests, and treatment modalities) and for which nurses are responsible and accountable for identifying and treating in collaboration with doctors.

When nurses identify actual health problems, risks, or health promotion, then nurses can validate the problem and take action independently to determine the nursing diagnoses. But if the nurse can't validate the problem and take action independently, then a collaborative problem is formulated (Potter et al., 2019) (Alfaro-

LeFevre, 2014). The difference between nursing diagnoses and collaborative problems can be seen in Scheme 5.2



Scheme 5.2 The difference between nursing diagnosis and collaborative problem

Nursing diagnoses and collaborative problems also have differences from medical diagnoses. A medical diagnosis is a disease or trauma condition that is validated by a medical diagnostic examination and where the focus of treatment is on the correction or prevention of specific pathology of an organ or body system (requires treatment with a license from a doctor) (Alfaro-LeFevre, 2014). In one situation, the medical diagnosis could be the equivalent of a collaborative problem.

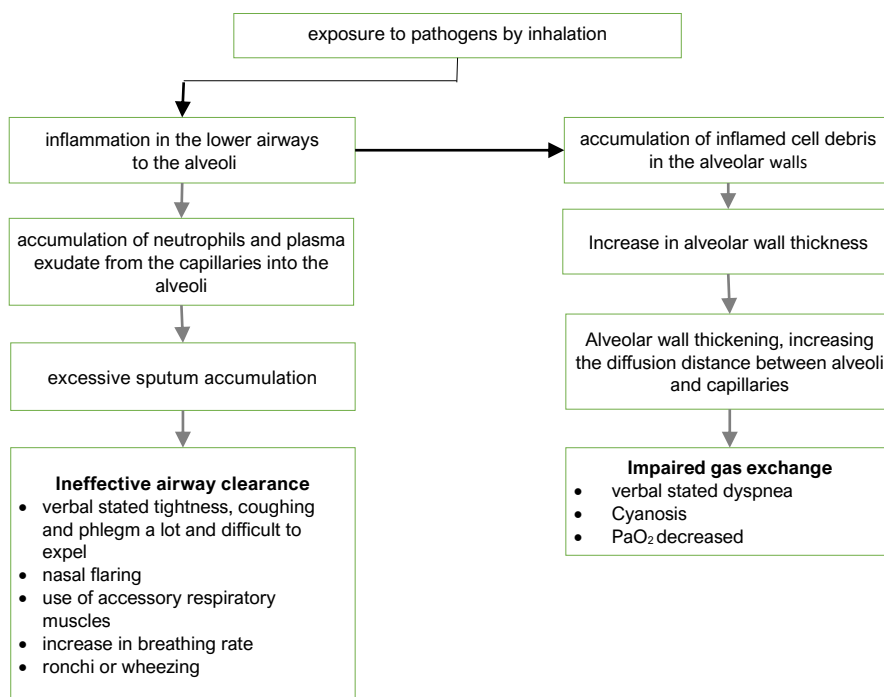
For example:

Medical diagnosis is Myocardial infarction, it will mean the same as collaborative problem: is risk of complications of congestive heart failure or the risk of arrhythmias.

However, collaborative problems can't be the same as medical diagnoses in other conditions. For example, collaborative problems: WSD, IV, and ETT, will not create a medical diagnosis.

J. CONCEPT MAPPING

Concept mapping is a scheme that presents relationships between concepts, usually used to find nursing diagnoses, but can also be used to find relationships between data, nursing diagnoses, and interventions. Concept mapping will assist nurses in managing and connecting patient data that contains problems with a logical mindset. The mapping concept develops the ability of nurses to provide high-quality nursing services individually, not rigidly, and use specific problem-solving for each patient being managed (Potter et al., 2021). An example of concept mapping can be seen in Scheme 5.3.



Scheme 5.3 Example of concept mapping

K. EXAMPLE OF MAKING A NURSING DIAGNOSES

Below is an example of making a nursing diagnoses, it can be seen in Table 5.4.

Table 5.4 Example of making a nursing diagnoses

DATA ANALYSIS

No.	Data	Interpretation	Problem
1.	Subjective data: Verbal report - Shortness of breath accompanied by coughing up phlegm - Sputum yellow and thick Objective data: - RR: 40 bpm - Nasal flaring (+) - Ronchi (+)	Bacterial infection ↓ inflammation of the lungs ↓ retained mucus	Ineffective airway clearance (D.0149)

Nursing diagnoses formulation:

Ineffective airway clearance related to retained mucus as evidenced by verbal reports of shortness of breath accompanied by coughing up phlegm, sputum yellow and thick, RR 40 bpm, nasal flaring (+), ronchi (+).

SUMMARY

Nursing diagnosis, as the second stage of the nursing process, is the basis for nurses in selecting actions to be accounted for. Nursing diagnoses can be formulated correctly if the nurse analyzes the patient's health status using clinical reasoning. There is a fundamental difference between nursing diagnoses, medical diagnoses, and collaborative issues, among others, related to the focus of activities, types of clinical decisions, and types of professional health workers who handle them. Nursing diagnoses are divided into three, including actual, risk, and health promotion, where each diagnosis has two components covering problems and related factors or diagnostic indicators, which in writing statements have specific rules.

REVIEW QUESTIONS

1. A 45-year-old male patient was admitted to the hospital complaining of pain in his left hand due to a stab wound. The patient feels stabbing pain on a scale of 8 and complains about whether the wound can be healed. On physical examination, found a wound 10 cm long, 2 cm wide, and 2 cm high; vital signs: blood pressure: 110/70 mmHg, pulse: 78 x/minute, respiratory rate: 20 x/minute, Temperature: 36.5⁰ Celsius. Which data from this case is abnormal?
 - a. Pulse: 78x/minute
 - b. Pain like stabbing scale 8
 - c. Temperature: 36.5⁰ Celsius
 - d. Respiratory rate: 20 x/minute
 - e. Blood pressure: 110/70 mmHg
2. The nurse is examining a patient, male, 49 years old, who has symptoms of shortness of breath and cough with thick phlegm. The examination results found crackles in the lower right lung field, RR = 36x/minute. Which of these data shows objective data?
 - a. Cough
 - b. Thick phlegm
 - c. Ronchi sound
 - d. Shortness of breath
 - e. Cough with thick phlegm
3. A 57-year-old patient was admitted to the hospital complaining of red, dry skin. On physical examination, found redness and dryness of the skin, temperature 39.9⁰C. On urine examination, it found specific gravity for urine was 1.030. What is the conclusion of this case?
 - a. Having fluid problems
 - b. Experiencing comfort issues
 - c. Experiencing a risk of infection
 - d. Having problems eliminating urine
 - e. Experiencing network integrity issues

4. A 56-year-old male patient complained of difficulty in urinating accompanied by pain. On physical examination, he found BP: 130/80 mmHg, Pulse: 90x/minute. On digital rectal examination, the prostate was enlarged. The focus of diagnosing the patient's problem is the elimination of urine. What is the most appropriate descriptor with the focus of the diagnosis?
 - a. Deficit
 - b. Impaired
 - c. Decrease
 - d. Ineffective
 - e. Disturbance

5. A 58-year-old male patient diagnosed with pneumonia complained of shortness of breath accompanied by coughing and thick phlegm. What is the correct nursing diagnosis?
 - a. Impaired gas exchange related to sputum accumulation
 - b. Ineffective breathing pattern related to sputum accumulation
 - c. Ineffective airway clearance related to sputum accumulation
 - d. Ineffective breathing pattern related to shortness of breath and coughing
 - e. Ineffective airway clearance related to inflammation of the respiratory system

6. A 44-year-old female patient was admitted to the hospital for an examination; she obtained a urine gravity of 1,030 and a body temperature of 38.90 Celsius; there was redness all over the body and dry skin. From the data above, what is the appropriate nursing problem?
 - a. Risk of infection
 - b. Fluid volume deficit
 - c. Potential for fluid volume deficit
 - d. Potential for damage to skin integrity
 - e. Impaired cardiopulmonary tissue perfusion

7. A 35-year-old male patient has a temperature of 38.5⁰ C. The patient sleeps very much (12 hours/day) and has a poor appetite. The patient drinks 2000 ml of water a day if someone gives him fluids/drinks repeatedly and someone persuades him to drink. Which of the following is the most appropriate formulation of the nursing diagnosis?
- a. Impaired fulfillment of rest and sleep-related to fever as evidenced by having many hours of sleep (12 hours/day), temperature 38.5⁰C.
 - b. Impaired fulfillment of nutrition less than body requirements related to decreased appetite as evidenced by having a poor appetite, drinking 2000 ml of water a day if someone persuades him to drink.
 - c. risk of impaired fluid fulfillment related to decreased appetite as evidenced by having a poor appetite, drinking 2000 ml of water a day if someone persuades him to drink.
 - d. Hipertermia related to decreased appetite as evidenced by having a poor appetite, drinking 2000 ml of water a day if someone persuades him to drink, temperature 38.5⁰C.
 - e. lack of knowledge about the benefits of fluids for the body related to lack of information as evidenced by drinking 2000 ml of water a day if someone persuades him to drink
8. Which of the following is an example of a health promotion nursing diagnosis?
- a. Risk for impaired skin integrity related to immobility
 - b. Ineffective airway clearance related to retained secretions
 - c. Impaired sense of comfort: pain associated with tissue distention
 - d. Impaired fulfillment of nutrition less than body requirements related to poor appetite
 - e. Readiness for increased urinary elimination is evidenced by the patient wishing to increase urinary elimination; the amount and characteristics of the urine are normal

9. Which of the following statements is a collaborative problem?
- Potential ineffective airway clearance
 - Impaired skin integrity related to immobility
 - Impaired physical mobility related to required bed rest
 - Potential complications: bleeding secondary to clotting problems
 - Changes in nutrition less than the body needs to be related to poor appetite
10. The nursing diagnosis and the most appropriate cause for a patient who has vomited at home for three days is:
- Fulfillment of nutrition that is less effective and related to vomiting
 - Risk for impaired nutritional fulfillment related to vomiting for three days
 - Impaired fulfillment of nutrition less than what the body needs to be related to vomiting
 - Risk for impaired fluid intake related to decreased appetite secondary to vomiting
 - Impaired fulfillment of nutrients less than what the body needs to be related to malnutrition

Answer Keys: 1. b 2. c 3. a 4. e 5. c 6. b 7. d 8. e 9. d 10. b

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CHAPTER 6

CRITICAL THINKING IN NURSING CARE PLAN



LEARNING OBJECTIVES

- Set problem priorities
- Establish goals and outcome criteria
- Establish nursing interventions

A. DETERMINING PRIORITIES

After formulating a nursing diagnosis, the next step is to enter the care planning phase.

Nurses usually use critical thinking activities in the planning stage are responding, predicting complications, anticipating, considering consequences, taking action, setting priorities, making decisions, and ensuring safety (Alfaro-LeFevre, 2020). This phase begins with determining the priority of existing problems, whether nursing diagnoses or collaborative problems. Each nurse-managed patient has more than one nursing diagnosis or collaborative problem. Therefore, nurses need to determine the priority of the problem. Priority setting is an organization of a vision of the expected outcomes of the patient, containing the order of nursing diagnoses or patient problems using the notions of urgency and importance to determine the order of nursing interventions that the patient prefers (Potter et al., 2021)

The effort to determine priority is to organize existing problems so that problems with a higher priority for each patient can be attended to first (Williams, 2021). The priority of the problem is an effort to decide on problems or needs that require immediate

action and which ones can still be tolerated with a delayed response because the problem is not urgent (Bradley and Page-Cutrara, 2021).

When setting problem priorities, nurses must predict and determine interventions sequentially when patients have nursing diagnoses and collaborative problems. The nurse also determines priorities by selecting priorities through mutual agreement with the patient based on the urgency of the problem, the patient's safety and desire, the presence of treatment indications, and a relationship with the established diagnosis (Potter et al., 2021). There are several methods of prioritizing nursing problems. These methods are (Potter et al., 2021).

1. The first time, consider the patient's immediate needs based on Airway, Breathing, Circulation (ABC).
2. Priorities are determined using Maslow's hierarchy of needs. There are five levels of Maslow's needs, from the most needed to those that can still be postponed: 1. Physiological level, 2. Feeling safe and comfortable, 3. Loving and belonging, 4. Self-esteem, 5. Self-actualization.

In setting priorities, the nurse's consideration becomes very important. Nurses draw on their knowledge of a patient's disease or disorder using questions, available databases, and their experiences caring for similar patients. In this activity, logical critical thinking will be used to consider clinical priorities (Williams, 2021).

B. SETTING GOALS AND OR OUTCOMES

Planning is the third phase in the nursing process; the steps include setting priorities, setting goals and projecting outcome criteria, and establishing nursing interventions to ensure the patient's need for health services is appropriately met.

Nurses in managing nursing care may refer to the terms goals and outcomes interchangeably. This is acceptable as long as the objective criteria and results of the writing can be met. For example, "The patient will achieve pain control as evidenced by reporting a pain level of less than three on a 0 to 10 scale within 24 hours" is a

proper assessment. The goal portion of the statement broadly describes the patient's desired status ("achieve patient control"), and the outcome portion of the statement contains observable criteria (:3 on the pain scale) needed to measure success (Astle et al., 2023).

A goal is a broad statement that describes a desired change in a patient's condition, perception, or behavior (Potter et al., 2021). A goal can be described as a direction, intention, or end of an activity and is a broad statement that describes the desire or intention to change the patient's condition or behavior. The goal is patient-centered, established through collaboration with the patient whenever possible. The statement of purpose relates to the diagnostic label or problem statement of the nursing diagnosis. Client-centered goals ensure that nursing care is client-focused and individualized (Gray, 2019).

Nursing outcomes are observable and measurable aspects, including conditions, behavior, or perceptions of patients, families, or communities in response to nursing interventions. Nursing outcomes indicate the status of nursing diagnoses after nursing interventions are carried out (Fadhillah, 2019). A nursing-sensitive patient outcome is a measurement of the client, which can be an individual, family, or community, and can be a statement, behavior, or perception in responding continuously throughout the nursing intervention. Each outcome has a set of indicators used to determine the patient's status concerning the outcome. To be measurable, outcomes require identifying more specific indicators (Moorhead, 2013).

1. Types of Nursing Outcomes

Nursing outcomes can be divided into two types, including adverse outcomes and positive outcomes. Negative outcomes indicate unhealthy conditions, behaviors, or perceptions, so determining this type of nursing outcome will lead to the provision of nursing interventions to reduce this. In comparison, positive outcomes indicate healthy conditions, behaviors, or perceptions.

Determining this type of nursing outcome will direct the provision of nursing interventions to increase or improve it. Table 6.1 statements below are types and examples of output (Fadhillah, 2019).

Table 6.1 Type and example outcome

No	Type of Outcome	Example of Outcome
1.	Positive	Airway clearance
		Fluid balance
		Skin and tissue integrity
		Body image
2.	Negative	Pain level
		Fatigue level
		Anxiety level
		Grief level
		Local allergic response

2. Nursing Outcome Components

Nursing outcomes have three main components: Labels, Expectations, and Outcome Criteria. Each component is described as follows:(Moorhead, 2013), (Fadhillah, 2019).

a. Label

The label component is the name of the nursing output, which consists of keywords to obtain information related to nursing outcomes. Nursing outcome labels are behavioral conditions or patient perceptions that nursing interventions can change or overcome. The nursing intervention label consists of several words beginning with nouns that function as descriptors or explanations for nursing outcomes.

b. Expectation

Expectations are judgments about the expected results achieved. Expectations describe how the patient's condition, behavior, or perception will change after being given an intervention. There are three possible expectations that nurses expect to include in Table 6.2.

Table 6.2 Three possible expectations

No	Expectation	Definition
1.	Increase	Increase in size, number, degree, or grade
2.	Decrease	Reduced in size, number, degree, or degree.
3.	Getting better	Produce a better effect, adequate or effective.

Decreased expectations are used for negative outcomes such as fatigue level, anxiety level, grieving rate, infection rate, bleeding rate, and allergic response. Increased expectations are used on positive outcomes such as airway clearance, cardiac output, peripheral perfusion, self-care, level of knowledge, spontaneous circulation, and comfort status. At the same time, improved expectations are used for outcomes that cannot be made into decreased or increased expectations, such as fecal elimination, sexual function, self-identity, gastrointestinal motility, role performance, and parenting processes.

c. Outcome Criteria

Outcome criteria are patient characteristics that nurses can observe or measure and serve as a basis for assessing the achievement of nursing intervention outcomes. Outcome criteria can also be referred to as indicators because they describe the changes to be achieved after the administration of nursing interventions.

Based on the documentation method, writing outcome criteria can be done using two methods. However, if using the manual/written documentation method, then for each performance result, it is necessary to write down the number or value expected to be achieved. Meanwhile, if using a computer-based documentation method, each outcome criterion is determined as a score with a scale of 1 to 5. There are variations of the scale in scoring the outcome criteria. Some examples are shown in box 6.1 below.

Box 6.1 Examples scale in scoring the outcome criteria

<i>Activity Tolerance</i>						
Definition: individual's physiological response to using movement in everyday activities.						
OUTCOME TARGET RATING: Maintain at ___ Increase to _____						
OUTCOME OVERALL RATING		1	2	3	4	5
		Severely Com-promised	Substantially Com-promised	Moderately Com-promised	Mildly Com-promised	Not Com-promised
Indicators						
000501	Oxygen saturation with activity	1	2	3	4	5
000502	Pulse rate with activity	1	2	3	4	5
000503	Respiratory rate with activity	1	2	3	4	5
000504	Ease of breathing with activity	1	2	3	4	5
000505	Systolic blood pressure with activity	1	2	3	4	5
000506	Diastolic blood pressure with activity	1	2	3	4	5
000507	Electrocardiograms finding	1	2	3	4	5
<i>Pain Level</i>						
Definition: observed or reported pain level						
OUTCOME TARGET RATING: Maintain at ___ Increase to _____						
OUTCOME OVERALL RATING		1	2	3	4	5
		Severe	Substantial	Moderate	Mild	Severe
Indicators						
210201	Reported pain	1	2	3	4	5
210204	Length of pain episode	1	2	3	4	5
210221	Rubbing affected area	1	2	3	4	5
210217	Moaning and crying	1	2	3	4	5
210206	Facial expressions of pain	1	2	3	4	5
210208	Restlessness	1	2	3	4	5
210222	Agitation	1	2	3	4	5
210223	Irritability	1	2	3	4	5
210224	Wincing	1	2	3	4	5
210225	Tearing	1	2	3	4	5
210226	Diaphoresis	1	2	3	4	5
210218	Pacing	1	2	3	4	5
210219	Narrowed Focus	1	2	3	4	5
210209	Muscle Tension	1	2	3	4	5
210215	Loss of appetite	1	2	3	4	5
210227	Nausea	1	2	3	4	5
210228	Food intolerance	1	2	3	4	5

Adopted from (Moorhead, 2013)

3. Application of Nursing Outcomes

The application of nursing outcomes using the three components can be carried out using two methods including: (Fadhilah, 2019)

a. Manual Documentation Method

Method of writing: After nursing interventions have been carried out for, then (Nursing Outcome) (Expectations) with outcome criteria:

- Criterion 1 (result)
- Criterion 2 (result)
- Criterion 3 (result)
- Etc.

Example:

After intervention for 3 hours, airway clearance increased with the following criteria:

- Effective cough
- Sputum production increases
- Wheezing decreased
- Respiratory frequency 12 - 20x/minute

b. Computer-Based Documentation Method

Method of writing: After nursing interventions have been carried out for, then (Nursing Outcome) (Expectations) with outcome criteria:

- Criterion 1 (score)
- Criterion 2 (score)
- Criterion 3 (score)
- Etc.

Example:

After intervention for 3 hours, airway clearance increased with the following criteria:

- Effective cough : 5
- Sputum production increases : 5
- Wheezing decreased : 5
- Respiratory frequency 12 - 20x/minute : 5

Writing nursing outcomes that apply based on the Indonesian Nursing Outcome Standards is to use the terminology of objectives and outcome criteria. However, other countries use only nursing outcomes. Below is an example of nursing outcomes that include goals and outcome criteria and nursing outcomes that only have outcome criteria.

An example of writings goals with outcomes can be seen in Table 6.3 (Astle et al., 2023).

Table 6.3 Example of writings goals with outcomes

Nursing Diagnoses	Goal	Expected Outcomes
Acute pain related to pressure on spinal nerves	The patient's level of comfort will improve before surgery	The patient will be able to turn without reported discomfort in 2 hours. The patient's self-report of pain will be three or less on a scale of 0 to 10 by the scheduled surgery.
Anxiety related to uncertainty over surgery	The patient will accept a plan for surgical care before a scheduled surgery.	The patient will express less uneasiness about surgery in the next 4 hours.

An example of writing outcomes can be seen in Table 6.4 (Astle et al., 2023).

Table 6.4 Examples of writings outcomes

Nursing Diagnoses	The example NOC Based Outcomes	Example Outcome Indicators
Deficient knowledge	Knowledge treatment procedures	Description of treatment procedures Description of steps in the procedure
	Patient satisfaction teaching	The explanation provided in understandable terms Explanation of activity restrictions
Activity intolerance	Activity tolerance	Oxygen saturation with activity Pulse rate with activity Respiratory rate with activity
	Self-care status	Bathes self Dresses self Prepare food and fluid for eating

Nurses, when writing goal or outcome statements, are beneficial if they use the acronym SMART, which has the meaning that goals/outcomes must be:(Ackley et al., 2022)

S = Smart

M = Measurable

A = Holdable

R = Realistic

T = Timed

C. NURSING INTERVENTION

1. Definition Intervention

The essence and reason for the existence of the nursing profession is intervention. Interventions are a central element of health care; careful selection and appropriate use are the basis of high-quality care. Healthcare providers must know about evidence-based interventions and measures designed to address health problems to make accurate, safe, and effective decisions. The nursing professional's responsibility is to provide safe, high-quality, evidence-based interventions to address critical nursing situations to promote health, well-being, and positive health outcomes. In making health decisions related to patient care, health professionals select treatment interventions and monitor responses to them (Bulechek, 2013). Intervention is like a road map that directs the best way to provide nursing care. If a nurse writes down nursing interventions more clearly, it will be easier to complete activities and goals to the expected outcomes (Ackley et al., 2022). Nursing interventions are all treatments carried out by nurses based on knowledge and clinical judgment to achieve the expected goals/outcomes (Fadhillah, 2018).

Classification of Nursing Interventions (NIC) is an intervention performed by nurses with a classification that is a comprehensive standard, which is helpful for planning care, clinical documentation, cross-setting care communication, cross-system and regulatory data integration, effectiveness research, productivity measurement, competency evaluation, cost reimbursement, teaching, and

curricular design. Success in the evolution of nursing science and practice can be proven by the use and development of this system (Bulechek, 2013).

2. Indications of NIC's Usefulness

The first NIC was recognized in the United States but now has increased recognition internationally. In 2006, the Nursing Practice Information Infrastructure Committee of the American Nurses Association (ANA) recognized NIC as the standard language or terminology of nursing. The ANA criteria that the NIC meets include that the classification is regularly updated, there is a reason for its development, and that the classification supports the nursing process by providing clinically helpful terminology. NIC is stationed at CNC at the University of Iowa, College of Nursing. The CNC was approved by the Iowa Board of Regents (the governing body for the state's three public universities) in 1995. The CNC facilitates a structure for ongoing classification maintenance and communication with the many nurses and others in education and healthcare facilities who use language in the curriculum and their documentation system (Bulechek, 2013).

3. Classification of Nursing Interventions

The Indonesian Nursing Intervention Standards consist of five categories and fourteen categories with the following descriptions (Fadhillah, 2018),(Bulechek, 2013).

1. Physiological

This category of nursing interventions is aimed at supporting physical function and homeostatic regulation, consisting of:

- a. Respiration: This includes groups of nursing interventions that restore respiratory function and oxygenation
- b. Circulation: This includes groups of interventions that restore the function of the heart and blood vessels.
- c. Nutrition and Fluids: This includes groups of interventions that restore gastrointestinal function, metabolism, and fluid/electrolyte regulation.

- d. Elimination: This includes intervention groups that restore fecal and urinary elimination functions.
 - e. Activity and rest: This includes intervention groups that restore musculoskeletal function, energy use, and rest/sleep.
 - f. Neurosensory: This includes intervention groups that restore brain and nerve function.
 - g. Reproduction and Sexuality: This includes groups of interventions involving reproductive functions and sexuality.
2. Psychological
- This category of psychological nursing interventions is intended to support mental functions and processes, consisting of:
- a. Pain and comfort: This includes groups of interventions that relieve pain and increase comfort.
 - b. Ego integrity: This includes intervention groups that restore one's emotional well-being.
 - c. Growth and development: This includes groups of interventions that restore growth and development functions.
3. Behavior
- This category of nursing interventions is intended to support changes in behavior or a healthy lifestyle, consisting of:
- a. Personal hygiene: which contains intervention groups that restore healthy behavior and self-care.
 - b. Counseling and learning: This includes intervention groups that increase knowledge and changes in healthy behavior.
4. Relational
- This category of nursing interventions is intended to support interpersonal relationships or social interaction, consisting of:
- a. Social interaction: which contains intervention groups that restore relationships between individuals with other individuals.
5. Environment
- This category of nursing interventions is intended to support environmental safety and reduce the risk of health problems, consisting of:

- a. Security and protection: this contains intervention groups that increase safety and reduce the risk of injury due to threats from the internal and external environment.

4. Nursing Intervention Components

Each nursing intervention consists of three components, including labels, definitions, and actions, with the following description: (Fadhillah, 2018),(Bulechek, 2013)

a. Labels

The label is the name of the nursing intervention, which is the keyword for obtaining information related to the nursing intervention. Nursing intervention labels consist of one or several words that begin with a noun, not a verb, which functions as a descriptor or explanation of nursing interventions. There are around 18 (eighteen) descriptors on the nursing intervention label, which can be seen in Table 6.5.

Table 6.5 The descriptors on the nursing intervention label

No	Descriptor	Definition
1.	Support	Facilitate or expedite
2.	Education	Teach or provide information.
3.	Collaboration	Create cooperation or interaction.
4.	Counseling	Giving guidance
5.	Consulting	Providing additional information or consideration
6.	Exercise	Teaching a skill or ability
7.	Management	Identify and manage
8.	Monitoring	Collecting and analyzing data
9.	Giving	Preparing and giving something.
10.	Examination	Observe carefully
11.	Prevention	Minimizing risks or complications
12.	Controlling	Trying to control
13.	Care	Identify and treat
14.	Promotion	Increase
15.	Referral	Arrange further management
16.	Resuscitation	Provide action quickly to maintain life.
17.	Screening	Early detection
18.	Therapy	Restore health and/or reduce risk.

b. Definition

This component explains the meaning of the nursing intervention label. The definition of a nursing intervention label begins with a verb in the form of behavior carried out by nurses, not patient behavior.

c. Action

This component is a series of behaviors or activities carried out by nurses to implement nursing interventions. Actions in nursing interventions consist of observation, therapeutic, education, and collaboration.

1) Observational action

Observation is intended to collect and analyze patient health status data. These actions generally use the words “check,” “identify,” or “monitor.” It is advisable to avoid using the word “assessment” because it is similar to the initial stage or assessment of the nursing process. So it is distinct from nursing actions which are the post-diagnosis stage, while assessment is the pre-diagnosis stage.

2) Therapeutic Measures

Therapeutic actions are actions that can directly have the effect of restoring the patient’s health status or can prevent the patient’s health problems from worsening. These actions generally use “give,” “do,” and other words.

3) Educational Action

Educational action is aimed at increasing the ability of patients to care for themselves by helping patients acquire new behaviors that can solve problems. These actions generally use “teach, suggest, or train.”

4) Collaborative action

Collaborative action requires collaboration with other nurses and other health professionals. This action requires a combination of knowledge and skills from various health professions. This action is only done if the nurse requires further treatment. These actions generally use the words “collaboration,” “refer,” or “consultation.”

5. Considerations in Selecting Interventions

Nurses should choose evidence-based nursing interventions because this is part of clinical reasoning and nurse decision-making. Six factors should be considered when selecting interventions: (Bulechek, 2013)

a. Expected outcomes

The expected outcome of the patient is determined before an intervention is selected. The expected outcome serves as a criterion for judging the success of nursing interventions. It describes people's responses, feelings, and behavior regarding the care provided. Many variables affect the expected results, including clinical problems; healthcare providers, interventions prescribed by healthcare providers; the environment in which care is received, genetic structure, pathophysiology, the motivations of the healthcare consumers themselves, and other important people.

b. Characteristics of the nursing diagnosis

Expected outcomes and interventions the nurse selects are related to the nursing diagnosis. A strategy that assists nurses in selecting appropriate nursing interventions is to make connections between specific nursing diagnoses or clinical conditions, outcomes, and interventions.

c. The research base for the intervention

Currently, nurses live nursing practice interventions with evidence-based practice (EBP). EBP is a nurse's approach to solving problems to provide care that integrates:

- 1) The best evidence is based on theory and well-designed research
- 2) The expertise of doctors and health workers in assessing patients to produce evidence
- 3) There are choices and abilities of people, families, groups, and populations.
- 4) Nurses, in determining best practice, must base evidence on research, which need to be assimilated and used in selecting interventions. Therefore, nurses should know the research

base. This is because research will show the effectiveness of using interventions with certain types of conditions.

d. Feasibility for performing the intervention

The nurse is involved in the comprehensive care plan for the patient. In feasibility, an intervention can be carried out if it can interact with other interventions. Things that need to be considered in feasibility are the cost of intervention, the amount of time needed, intervention from other providers, and the environment.

e. Acceptability to the care recipient

Interventions planned by nurses must be acceptable to healthcare consumers, including patients, families, or communities. When setting interventions, the nurse must make frequent efforts to provide several recommendations for intervention options to achieve the expected specific results. The nurse facilitates by informing the client of each intervention and how they expected to participate. When carrying out these activities, the nurse always considers the most important things, including the client's values, beliefs, and culture.

f. The capability of the nurse

To plan and determine interventions, nurses must have competence in this matter and must have: 1. knowledge of the scientific reasons for each intervention, 2. ability to process the psychomotor and interpersonal skills needed 3. Ability to function in a given setting in using health care resources effectively.

D. THE EXAMPLE OF NURSING CARE PLAN

Below is an example of nursing care planning, it can be seen in Table 6.6.

Table 6.6 The example of nursing care plan

No.	Nursing Diagnosis	Objectives and Outcome Criteria	Nursing Planning	Rational
1.	Nutritional deficit related to reluctance to eat as evidenced by verbal reports of no decrease in appetite due to nausea and vomiting, only spent three tablespoons, height 165 cm, weight 45 kg. (D.0019)	<p>Purpose: Objective:</p> <p>After nursing actions for 6 x 24 hours, the incoming nutrition is expected to be adequate.</p> <p>Result criteria:</p> <ul style="list-style-type: none"> - The portion served will be spent - Increased appetite - Normal weight (L.03030) 	<p>Nutrition Management (I.03119)</p> <p>Observation</p> <ol style="list-style-type: none"> 1. Identify nutritional status 2. Food allergy identification 3. Identify calories and nutrient types. 4. Assess for nausea and vomiting. <p>Therapeutic</p> <ol style="list-style-type: none"> 5. Encourage clients to eat small portions but often 6. Perform <i>oral hygiene</i> before eating <p>Education</p> <ol style="list-style-type: none"> 7. Provide information on balanced nutritional needs <p>Collaboration</p> <ol style="list-style-type: none"> 8. Collaboration in administering medication before meals, if necessary. 	<ol style="list-style-type: none"> 1. Identify nutritional deficiencies 2. Knowing the client's allergy to food 3. Know the type of nutrient needed by the client 4. Knowing the presence of nausea and vomiting 5. Smaller particles can increase food input. 6. Reduce the discomfort of oral stomatitis and unpleasant taste in the mouth that can affect food input. 7. Balanced nutrition can improve the client's state. 8. Provision of pain relief if necessary

SUMMARY

Planning is the third stage of the nursing process; the steps include setting priorities, setting goals and outcome criteria, and determining and developing nursing interventions. There are several ways to determine priorities, either by paying attention to immediate needs based on airway, breathing, and circulation, and can also based on Maslow's needs taking into account the patient's condition. Then, the nurse sets goals and outcome criteria by paying attention to the components, including labels, expectations,

and outcome criteria. Objectives and outcome criteria can be made in manual or computer-based methods. After doing this, then determine and develop nursing interventions. Nursing interventions can be used worldwide as NIC or in Indonesia in the SIKI PPNI book. There are several classifications of interventions ranging from physiological to environmental. The intervention components include labels, definitions, and actions. In deciding which intervention to take, there are several considerations, including expected results, characteristics of nursing diagnoses, interventions based on research results, ease of carrying out interventions, acceptance of care recipients, and nurses' ability.

REVIEW QUESTIONS

1. List of nursing problems

1. Changes in nutrition less than body requirements
2. Ineffective airway clearance
3. Risk for damage to skin integrity
4. Impaired physical mobility

Which order of priority of problems is most appropriate based on immediate needs that must be met?

- a. 1,2,3,4
- b. 2,3,4,1
- c. 2,4,1,3
- d. 2,1,4,3
- e. 2,3,4,1

2. List of nursing problems

1. Disturbance of sleep patterns
2. Impaired sense of comfort and pain
3. Lack of knowledge
4. Potential for infection

Which arrangement of priorities is most appropriate when done by looking at the patient's condition?

- a. 1,2,3,4
- b. 2,3,4,1

- c. 4,2,1,3
- d. 2,1,4,3
- e. 2,1,3,4

3. List of nursing problems

- 1. Impaired gas exchange
- 2. Anxious
- 3. Less able to care for themselves
- 4. Activity intolerance

Which is the most appropriate order of problem priority using Maslow's hierarchy?

- a. 1,2,3,4
- b. 1,3,4,2
- c. 1,4,3,2
- d. 1,4,2,3
- e. 1,3,2,4

4. Which statement of outcome criteria is most appropriate?

- a. The patient will feel less pain this Thursday
- b. The patient will increase his appetite on Wednesday
- c. The patient will know the four primary food groups this Friday
- d. The patient will demonstrate how he uses the walker this Saturday
- e. The patient will be able to follow the diet plan based on the needs in these two days

5. Based on Maslow's hierarchy of patient needs, what problem would the nurse set as the highest priority for the patient?

- a. safety
- b. Security
- c. belonging
- d. Rest and sleep
- e. Love and be loved

6. What intervention should the nurse do first in a patient with shortness of breath due to thick phlegm?
 - a. Do mucus suction
 - b. Elevate the head 30-45 degrees
 - c. Perform nebulization
 - d. Perform chest physiotherapy and postural drainage
 - e. collaboration in administering secretion-destroying drugs

7. Examples of expected outcomes from patients are...
 - a. Teach the patient leg exercises after one week of action
 - b. Help the patient to walk using crutches one week of action
 - c. Patients will show an increase in leg muscle strength after one week of action
 - d. Encourage the patient to eat regularly, in small portions but often after one week of action
 - e. Monitor the patient's vital signs, such as blood pressure, pulse, respiration, and digestion

8. A patient is admitted to the hospital with hypertension. His vital signs are temperature 36.50C, pulse 80x/minute, RR = 20x/minute, BP = 190/110 mmHg. The patient received antihypertensive drugs and a low-salt diet. What nursing interventions are appropriate for this patient?
 - a. Place the patient in the Trendelenburg position
 - b. Prescribe antihypertensive drugs and give them
 - c. Wear gloves when auscultating blood pressure
 - d. Assess temperature, pulse rate, and respiratory rate every hour
 - e. Assess the patient's blood pressure before administering the drug

9. A nurse is caring for a patient with decreased muscle strength due to a non-hemorrhagic stroke. What type of nursing therapy intervention will the nurse plan for this patient?

- a. Perform a joint range of motion
- b. Provide muscle strength treatment
- c. Present physiotherapy to warm up the muscles
- d. collaboration with the nutrition section for the proper diet
- e. Collaborative administration of drugs to increase muscle strength

10. A nurse is caring for a patient with shortness of breath and thick phlegm that is difficult to clear from the airway. What type of collaborative intervention would the nurse plan for this patient?

- a. Do chest physiotherapy
- b. Give anti-mucolytics as prescribed
- c. Motivate the patient to drink warm
- d. Teach the patient to cough effectively
- e. Teach the patient deep breathing exercises

Answer Keys: 1.d 2.d 3. c 4.d 5.d 6. b 7. c 8. e 9. a 10.b

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CHAPTER 7

CRITICAL THINKING IN NURSING

IMPLEMENTATION



LEARNING OBJECTIVE

- Determine the priority of problems every day
- Choose the correct type of action
- Explain the benefits of Standard Operating Procedures in implementation activities.

A. DEFINITION IMPLEMENTATION

Implementation is the fourth step in the nursing process, which involves implementing the nursing care plan developed during the planning phase. It is an effort to complete nursing activities to achieve predetermined goals and to make progress toward achieving specific outcomes (DeLaune et al., 2020). Implementation is an effort to carry out tasks and document the actions given. Nurses commonly use Critical thinking activities in the implementation stage are Responding, taking action, monitoring responses, reflecting, and making adjustments (Alfaro-LeFevre, 2020). Many factors must be considered in implementing a nursing plan. These factors are... (Yoost and Crawford, 2022)

1. Patient education and health literacy level
2. Relevant cultural, religious, or ethnic factors and possible limitations
3. Possible potential barriers to communication and language
4. Condition and ability status of the patient
5. Patient resources include an easily accessible support system and the client's ability to pay for treatment.
6. Patient choice of treatment

7. Competence and experience of nurses and health care providers
8. Best practices based on research findings
9. Standards of nursing practice and their scope
10. Institutional resources.

The goal of implementation is to direct action toward meeting the client's personal needs, which may result in health promotion, disease prevention, disease management, or health restoration in various care settings, including acute care, community care, outpatient clinics, and advanced care facilities. Implementation activities also involve the delegation of tasks and documentation of nursing interventions. The nurse needs to perform nursing implementation effectively. Because of that, requirements for effective implementation are (DeLaune et al., 2020).

1. Cognitive Skills

Cognitive skills enable the nurse to make appropriate observations, understand the activities' rationale, and appreciate how differences among individuals affect nursing care.

2. Psychomotor Skills

Nurses need psychomotor skills and proficiency so that nursing activities can be carried out effectively and to provide patient safety. Nurses must be able to handle medical equipment with a high level of competence and perform a variety of skills.

There are several activities at this stage, including continuing assessment and data collection, setting priorities every day, carrying out nursing interventions, and documenting nursing care.

B. CONTINUING ASSESSMENT AND DATA COLLECTION

After the nurse completes the initial assessment of the patient and develops a treatment plan, the next step is to implement it with continuous review to collect data regarding the detection of marked changes in the patient's condition and adjust the needs for the interventions described in the treatment plan. For example, a patient admitted to the hospital at the initial assessment was unresponsive, appeared unable to breathe independently, and needed ventilator assistance. When the patient's condition improves

and he is able to breathe independently, ventilator-assisted intervention can be removed from the treatment plan, and oxygen delivery is changed to through a nasal cannula (Yoost and Crawford, 2022).

C. PRIORITY SETTING EVERY DAY

A nurse needs the ability to prioritize an action plan every day before the activity is carried out. This is because no matter how good planning is, it cannot predict what will happen in the required number of days, so everyday nurses need to prioritize. There are several things that a nurse needs to be able to set priorities for every day, namely nursing knowledge, expertise in their field, and knowledge of the habits that occur when nurses carry out their daily tasks. Therefore, the key for a nurse to be able to take action is to have the ability to set priorities every day. Nurses should need to carry out activities in setting priorities every day. These activities are: (Alfaro-LeFevre, 2014)

1. Nurses should study all existing records, such as medical records and nursing notes, including action plans that have been prepared, then give full attention if there is a change in the report and conduct an assessment of the patient. After that, the bidder will determine the priority.
2. Nurses need a short time to examine critical issues before conducting a deeper assessment of all problems.
3. The nurse must determine the problem that requires a quick resolution and take appropriate action by adjusting the existing assessment. For example, after assessing the patient, can the nurse take independent action if it is appropriate, or needs to report to the nurse team leader or head of the room or to the doctor?
4. Nurses should register nursing diagnoses or problems and ask themselves the following questions?
 - a. Is there a patient problem that the nurse has to deal with at this time, and what is the impact if the nurse doesn't solve it immediately?

- b. What problems need attention from nurses today, and what are the effects if nurses ignore them?
 - c. What are the essential problems that must be addressed, eliminated, or controlled today in order to improve the overall nursing goals?
 - d. This is the first problem that must be done, followed by the second, and so on today by the nurse if the patient has several existing problems.
5. After the nurse has this list of patient problems, the nurse must determine the tasks performed to carry out nursing actions to solve patient problems. Nurses must make lists of tasks that must be done. For example, bathing the patient in the morning, doing back massages, feeding, exercising the limbs, etc.
 6. The nurse should study the list of tasks that will be carried out with the patient and/or family to determine what the patient and family can do and things that need help.
 7. The nurse should make a daily routine activity record that outlines the activities that have been carried out today. Take detailed notes with more frequency.

D. DOING NURSING IMPLEMENTATION

The nurse must manage many things when working on the implementation phase, such as time, personnel to act, and equipment (Potter et al., 2019).

1. Time management

Nurses will experience busy times when treating patients in the room. As a nurse, you will experience double busyness because apart from being a nurse, you are also part of an organization. Therefore, nurses must be able to manage the effectiveness and efficiency of the nursing care provided. Nurses must provide services promptly, safely, competently, and efficiently. Time constraints, being in a hurry, and suspending activities will lead to poor nursing care.

2. Personnel

Many nursing models can be applied in a hospital. The presence of a model will determine the type of maintenance personnel needed, both room heads, team leaders, and members who have different characteristics. Cooperation between every good staff will produce good nursing care. If the patient's problem is complicated and difficult, then the nurse needs to cooperate with other staff to be able to make the nursing care provided successfully. Many nursing models can be applied in a hospital. The presence of a model will determine the type of maintenance personnel needed, both room heads, team leaders, and members with different characteristics. Cooperation between every good staff will produce good nursing care. If the patient's problem is complicated, then the nurse needs to cooperate with other staff to make the nursing care provided successfully.

3. Equipment

One of the successes in carrying out the implementation is the availability and effectiveness of materials and tools used to provide nursing care to patients. This is because many patient problems require nursing care responses using the equipment. The tools used must be placed in a safe location; for example, if the material is made of iron, avoid locations that cause the material to rust; used in proper conditions; an infusion needle has a period of use, free from infection, for example, a wound care kit must be ensured it has been sterilized the right way.

4. Patient

The involvement of the patient in carrying out nursing actions is vital. Therefore, nurses should ensure that patients feel comfortable both physically and psychologically. Nurses need to take an adequate approach before action is given to the patient. For example, the doctor has prescribed a dose of an antibiotic for a patient, so the nurse, before giving it, first makes sure that the patient will feel comfortable with being given the drug. Patients

should be given medication beforehand; first, do a test to determine whether there is a drug allergy.

5. Anticipating and prevention complication

Nurses must understand that the patient's risk comes from the disease being faced and with the treatment. Therefore, nurses using existing knowledge and skills, should carry out medical examinations of patients carefully, identify the risks that exist in patients, plan and carry out interventions to prevent or minimize existing complications based on scientific rationale. For example, a patient experiencing a wound with nursing problems with impaired tissue integrity will be at risk of infection. Therefore, the wound nurse's intervention must be accompanied by skills with sterile principles, starting from tools, materials, and work steps so that the patient will be prevented from infection.

6. Recognize the patient's problem or intervention that requires specific assistance.

Every patient experience problems and interventions that are different and complex. This causes nurses to likely experience the need for assistance from other nursing staff. For example, nurses are still starting to handle nursing care in the room, unable to do a problematic action. Therefore, nurses need to ask for help from those more senior than themselves regarding the actions to be taken.

7. Skills in performing nursing care

Nursing practice requires various abilities such as knowledge, interpersonal relationships, and maximum skills to manage nursing care. Cognitive skills can be produced by nurses, one of which is through the use of critical thinking to find reasons and the right clinical decisions. Intrapersonal skills allow nurses to communicate effectively, build better trusting relationships, and provide care to patients. Nurses also need implementation skills to carry out nursing actions, either directly or indirectly. The nurse is responsible

for knowing what type of implementation skills are preferred by other people or patients and needs sufficient knowledge and skills to do so.

8. Direct care

Nurses will carry out various direct care to patients at the implementation stage. When doing so, the nurse must bear in mind the acute clinical condition of the patient, the values and beliefs he holds, and the expectations and cultural views of the patient. Nurses must provide implementation with competent and safe practice and with a caring approach to patients.

9. The activity of daily living

Some patients need assistance in daily activities temporarily, and some permanently. For example, a patient with a cast on his left leg temporarily requires bathing, defecating, and urinating in bed. Patients with spinal cord paralysis will experience paralysis for life and require permanent assistance with daily activities. Patients who experience obstacles in carrying out daily activities may need physical or occupational therapy assistance. If so, nurses can consult and include these activities in nursing plans so patients can be more independent and increase their self-esteem. Patients who experience obstacles in carrying out daily activities may need physical or occupational therapy assistance. If so, nurses can consult and include these activities in nursing plans so patients can be more independent and increase their self-esteem. For patients treated in an acute room, there will likely be a decrease in their ability to carry out physical activities. Hence, this assessment is necessary so that nurses can make referrals.

10. Physical care technique

Patients receive physical care techniques from nurses while undergoing treatment at the hospital. The type given can differ from one patient to another. Some physical treatment techniques given to patients include IV-line installation, catheter installation, wound

care, self-range of motion, and nebulizer installation. Nurses who carry out this activity require many things, including knowledge, skills, knowing clinical practice guidelines for each given technique, being able to do it to patients, knowing how often interventions are carried out according to standards, and whether the action, if carried out, will achieve the expected results.

11. Live saving measured

One or several patients may experience threats from a physical or psychological perspective, and if this occurs, it indicates that the patient is entering a condition called threatening. In this condition, life-saving actions are needed for patients because they aim to restore physical or psychological balance. Some actions that can be given include providing cardiac and pulmonary resuscitation and emergency drugs. Therefore, it is better in every room some nurses are trained and recognized by the hospital to treat patients who suddenly enter into a threatening status or to bring professional nurses who can handle this into the ward. An example is the presence of ICU nurses in patient wards.

12. Counseling

Hospitalization and illness can cause patients to experience psycho-socio-spiritual problems ranging from mild to severe, such as an increased patient's desire to know about the problem they are suffering from. It becomes a problem of anxiety, stress, grief, depression, or other problems. This condition causes patients to need counseling support when hospitalized. Counseling is not only to support the patient's emotions but can also provide intellectual, psychological, and spiritual support. Counseling aims to assist patients in solving problems they are facing, recognize and deal with stress and provide opportunities for forming interpersonal relationships with patients. Nurses should act as counselors to help enable patients to deal with the current situation or changes that will occur in the future due to illness or stress experienced.

13. Teaching

Some patients may experience an inability to carry out self-care because they have not received enough knowledge to solve the problem at hand. In this condition, the nurse's role as someone who will teach the patient becomes essential. Interaction between teachers and students is based on specific learning objectives, that is, the understanding of the teaching and learning process. Nurses and patients become part of the teaching and learning process, nurses as teachers, and patients as learners, and the process should be carried out with active and reciprocal interaction. It is intended that patients experience intellectual growth to gain knowledge and perform new skills. The nurse should be responsible for assessing the patient first to determine the patient's needs and readiness to participate in the teaching and learning process, and also be responsible for delivering quality health education.

14. Controlling for adverse reaction

An unwanted or harmful effect of a medication, diagnostic test, or therapeutic intervention and possibly following a nursing intervention is the notion of an adverse reaction. Nurses need to learn to prevent these conditions from occurring and be able to recognize these adverse reactions. When nursing actions are given, the nurse should pay attention to reducing these effects or neutralizing reactions when they occur. For example, the patient may need warm moist compresses. As a nurse, you should prevent burns to the patient's skin, starting with examining the patient's skin to be compressed, then checking the area every 5 minutes for any possible adverse reactions such as excessive redness of the skin affected by heat.

15. Preventive measures

Every patient has the ability to improve his health status through various actions given by nurses or health workers. Therefore, nurses need to take preventive measures according to patient needs. For example, immunization increases the patient's

immunity so that he will not be infected with diseases such as tuberculosis for BCG immunization, Diphtheria, Pertussis, Tetanus for DPT immunization, and others. Another example is a patient with weak legs who wants to do activities to increase muscle strength, whether because he is old or due to an illness such as a non-hemorrhagic stroke by learning to walk in his room, the nursing management will provide crutches or handrails around the room so that the patient can be helped to walk and avoid fall occurs.

Types of nursing actions based on the authority and responsibility of nurses in a professional manner include (DeLaune et al., 2020).

1. Independent

This action is the nurse's initiative due to her own knowledge and skills, without instructions and orders from doctors or other health workers. Actions based on nursing diagnoses are a nurse's response within their authority based on education and experience. The nurse's activity is to determine interventions that require the nurse concerned to handle them. Or delegate it to other nursing personnel. This can also be called autonomy in nursing practice.

This type consists of four types of action:

a. Diagnostic measures

Diagnostic measures are assessment activities through interviews, observations, physical examinations, and reading the results of laboratory tests and other diagnostic tests.

b. Therapeutic Measures

Therapeutic measures are activities aimed at preventing, reducing, and overcoming patient problems. For a pneumonia patient, to reduce and overcome shortness of breath due to sputum that is difficult to remove, nurses perform chest physiotherapy and postural drainage and teach effective deep breathing and coughing exercises.

c. Educational Action

Educational action is an activity that aims to change patient behavior through health promotion. Example: teaching non-

hemorrhagic stroke patients who want to learn to walk about how to use crutches.

d. Refer action

Referring is a nurse's activity that uses clinical decisions to collaborate with other health teams. Example: In post-operative bleeding evacuation patients with hemorrhagic strokes, intracranial signs are still found, so a consultation is made with the neurosurgeon's department.

2. Interdependent

Nurses carry out this action in collaboration with other health workers. For example, in a post-appendectomy patient, after moving to a room with a history of diabetes mellitus, health workers collaborate in patient care, nurses and nutritionists determine the patient's nutritional needs, doctors determine the patient's wound care needs, nutritionists determine the patient's nutritional plan, nurses teach the benefits of nutrition according to the patient's condition for patient healing.

3. Dependent

Actions related to the implementation of medical activities carry orders from medical under their supervision. For example, in a tuberculosis patient, a doctor prescribes anti-tuberculosis drugs once per 24 hours orally, so the nurse gives the drug according to the prescription to the patient.

E. STANDARD OPERATING PROCEDURES

After the action plan is prepared, then we should be able to see the desired results. We must know how to take steps to ensure that the improvements we make as planned can be incorporated into an orderly way of working and that we will see continued benefits. In other words, we have to standardize the actions contained in the plan in the form of work instructions (Godoy and Bessas, 2020). Standardization includes all the rules regarding systematic activities to maintain, use and evaluate standards concerning compliance with them and their effect on results.

Standard Operating Procedures (SOP) for nursing is a set of instructions or steps taken to complete routine work processes by nurses, made by nursing or health service facilities based on professional standards. The policies and procedures of institutions determine standard operating procedures. SPO can improve the quality of life of patients. A study that was conducted to retrospectively investigate the effect of implementing standard operating procedures (SOPs) in the prevention of venous thromboembolism (VTE), demonstrated that SOPs could reduce the incidence of VTE in patients, increase awareness of their disease, and increase their caregiver satisfaction ([Zhang et al., 2022](#)). Table 7.1 below is an example of a standard operating procedure (Tim Pokja Pedoman SPO Keperawatan DPP PPNI, 2021).

Table 7.1 The example of standard operating procedures

Capillary Refill Time Monitoring
<p>Definition: Monitor peripheral blood circulation by assessing the length of capillary filling after a momentary pressure on one of the nails.</p>
<p>Nursing Diagnoses: Ineffective peripheral perfusion Decreased cardiac output</p>
<p>Nursing Outcome: Peripheral perfusion increases Cardiac output increases</p>
<p>Procedure:</p> <ol style="list-style-type: none"> 1. Identification of patient identity using full name and date of birth and/or medical record number. 2. Describe the procedure, including objectives and steps. 3. Perform six-step hand washing 4. Determine the area of the nail tip to be used 5. Determine the area of the nail tip to be used 6. Press for 1-2 seconds 7. Release the pressed part of the nail 8. Calculate the time that it takes for the nail color to return to normal 9. Inform monitoring results if necessary 10. Perform six-step hand washing 11. Record the results of CRT monitoring

F. THE EXAMPLE OF NURSING IMPLEMENTATION

Below is an example of nursing implementation, it can be seen in Table 7.2.

Table 7.2 The example of nursing implementation

No.	Nursing Diagnosis	Nursing Measures	Signature
1.	Nutritional deficit related to reluctance to eat as evidenced by verbal reports of no decrease in appetite due to nausea and vomiting, only spent three tablespoons, height 165 cm, weight 45 kg. (D.0019)	Tuesday, 01-01-2011 09.50 1. Ask the patient if he is still nauseous R: Nausea usually occurs when eating 2. Provide a low-protein, low-salt diet to the patient R: The portion of food is not finished 3. Instruct the client to clean his mouth R: The patient does not follow the nurse's advice 4. Ask the client if he has a food allergy R: The client does not have allergies to any food	

SUMMARY

The fourth stage of the nursing process is implementation, which is an effort to carry out various nursing activities to achieve the expected goals, taking into account the various factors that aim to meet the client's needs. This stage begins with prioritizing daily problems, then determining and implementing nursing actions to be carried out based on the priority scale. To produce the best quality, the room or hospital should establish standard operating procedures for each nursing action.

REVIEW QUESTIONS

1. A patient has had a stoma due to colon cancer for the past two weeks. The nurse enters the room and finds the patient looking at the stoma area. What should the nurse do next?
 - a. Ask the patient why he is staring
 - b. Instruct the patient not to touch the stoma area
 - c. Tidying sheets and changing the topic of conversation
 - d. Leave the room quickly to avoid running into the patient
 - e. Encourage the patient to explore his understanding of the stoma

2. A 56-year-old male patient received a nursing diagnosis of ineffective airway clearance related to retained secretions due to tightness, cough, retained sputum with a respiratory rate of 32 times per minute, use of additional respiratory muscles, and crackles in the right upper lung on shift. Morning. During the afternoon shift, the nurse will continue caring for the patient. What will the first nurse do?
 - a. Maintain semi fowler's position
 - b. Perform a patient's airway assessment
 - c. Performing chest physiotherapy and postural drainage
 - d. Teaches deep breathing and practical coughing exercises
 - e. collaboration for the administration of antibiotics and mucolytics

3. A 62-year-old female patient received a nursing diagnosis of ineffective airway clearance related to retained secretions. What will the nurse do to act as a therapeutic form?
 - a. Maintain semi fowler's position
 - b. Perform a patient's airway assessment
 - c. Performing chest physiotherapy and postural drainage
 - d. Teaches deep breathing and practical coughing exercises
 - e. Collaboration for the administration of antibiotics and mucolytics

4. A 63 years old male patient with a non-hemorrhagic stroke experienced weakness in both legs, so he could not get out of bed. Patients get nursing diagnoses; "Impaired physical mobility related to muscle weakness marked by muscle strength in both legs with a score of 2. What therapeutic action will the nurse take?
 - a. Teaches how to do activities in bed
 - b. Assist patients in meeting daily needs in bed
 - c. Assess the muscle strength of the patient's legs
 - d. Exercising the range of motion of the joints of the patient's legs
 - e. Collaborate with physiotherapy to provide warm-up and physiotherapy on both legs.

5. The nurse entered the room to work the night shift on a ward and found a 45-year-old female patient with the nursing diagnosis "Pain related to inflammation secondary to trauma. What would the nurse do first for this patient?"
 - a. Teach infection prevention
 - b. Assess the patient's pain characteristics
 - c. Teaches deep breathing relaxation techniques
 - d. Treat the patient's wound using an aseptic technique
 - e. Collaborate with doctors for the administration of antibiotics

6. A nurse is reading a nursing intervention for a patient who is immobilized, making efforts to mobilize the patient every 2 hours. What type of action would the nurse implement?
 - a. Promotion
 - b. Dependent
 - c. Independent
 - d. Interdependent
 - e. Preventive Measures

7. According to the doctor's order, A nurse gives transamin one ampoule/iv. What type of action did the nurse perform?
 - a. Dependent
 - b. Independent
 - c. Interdependent
 - d. Live saving measures
 - e. Preventive measures

8. A team leader reads a care book about a patient who has been hospitalized for two days with a diagnosis of pulmonary tuberculosis. The patient has nursing problems, including airway clearance, risk of impaired gas exchange, and less nutrition than body requirements. What will the nurse do first in the implementation phase?
 - a. Reassess the patient
 - b. Perform nursing actions
 - c. Reconstruct patient care plans
 - d. Re-prioritize the patient's problems
 - e. Perform nursing actions after assessing the patient

9. A 45-year-old male patient received a nursing diagnosis of "Hyperthermia associated with secondary dehydration due to decreased appetite, characterized by an increase in temperature, 39°C, flushed skin, pulse: 100x/minute". Nurse A just entered the room to treat the patient on the second day of the afternoon shift. What will the nurse do first in the implementation phase for the patient?
 - a. Assess the patient's temperature
 - b. Motivate the patient to increase appetite
 - c. Motivate the patient to drink enough water
 - d. Teach the patient the importance of meeting fluid and nutritional needs

10. A nurse is examining a patient at the Puskesmas, a male, 54 years old, with complaints of coughing in the past week. Cough accompanied by thick phlegm, yellowish white, and difficult to cough up. General condition is good; *compos mentis*, temperature 36.90C, BP 120/80 mmHg, pulse 82x/minute, RR 24x/minute, chest expansion is symmetrical and pleasing, resonant in all lung fields, vesicular. At the time of auscultation, the nurse heard the sound of breath sounds, like water flowing over the apex of the right lung. What subsequent nursing intervention has the best potential to improve this patient's situation?
- Do mucus suction
 - Do chest physiotherapy regularly
 - Give deep oxygen by nasal cannula
 - Give nebulization in collaboration with pentholin
 - Encourage the patient to drink 2-3 liters per day and warm

Answer Keys: 1.e 2.b 3.c 4.d 5.b 6.c 7.a 8.a 9.a 10.e

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CHAPTER 8

CRITICAL THINKING IN NURSING

EVALUATION



LEARNING OBJECTIVE

- Summarize the achievement of objectives based on the results of the assessment
- Summarize the results of reviewing nursing care plans

A. DEFINITION OF EVALUATION

Evaluation is the fifth stage of the nursing process; the nurse's stage will determine whether the patient's goals are achieved, partially or not, then the nurse determines the nursing intervention, whether it is discontinued, continued, or modified according to the reassessment results (Gray, 2019). The evaluation phase occurs not only at the end of the nursing process but throughout the process. In other words, when evaluating, we must also reassess, re-diagnose, re-plan, and re-implement (Makic et al., 2023). Critical thinking activities that nurses usually use in the evaluation stage are reflection, repeating activities that have been carried out in the assessment, nursing diagnosis, planning, implementation and evaluation stages as indicated ([Alfaro-LeFevre, 2020](#)).

Nurses carry out evaluations based on the outcome criteria prepared previously. These criteria can be assessed in the implementation or evaluation phases. Suppose the assessment is carried out in the implementation phase. In that case, it aims to measure process criteria or is a process of assessing the course of the implementation of the nursing process in accordance with the conditions and needs of the patient. Meanwhile, suppose the

assessment is carried out in the evaluation phase. In that case, it aims to measure the outcome criteria or is an activity to assess nursing care as shown by changes in patient behavior. In the evaluation phase, the activities carried out are evaluating/assessing the achievement of goals, studying the variables that affect the achievement of goals, and modifying action plans or terminating nursing actions.

B. EVALUATING/ASSESSING THE ACHIEVEMENT OF GOALS

In this section, the nurse compares the findings obtained in the evaluation phase with the objectives and outcome criteria made in the planning phase. Nurses need critical thinking skills such as analysis, interpretation, and inductive thinking to evaluate. Nurses with various methods of assessment, such as interviews, observations, and documentary studies, should answer several questions when conducting an evaluation, including: (Potter et al., 2019)(Alfaro-LeFevre, 2014)

1. Has the patient achieved a level of well-being or health according to the outcome criteria?
2. Are there any factors that cause the problem to not be resolved?
3. Are there any new signs, symptoms, or problems that arise?

In the fifth stage of the nursing process, nurses need to evaluate the nursing care given. The results of the evaluation that has been carried out can be stated as: (Gray, 2019)

1. Goals are met if the patient shows changes according to the outcome criteria set at the planning stage. For example: if the nurse determines that the nursing diagnosis of airway clearance is ineffective, then the nurse arranges four outcome criteria, including stating that absent or reduced shortness of breath, standard respiratory rate, absence of additional respiratory muscle, clean breath sounds, and all are found at this stage, then goals met.

2. Goals are partially met if the patient shows a partial change from the established outcome criteria. From the example above, it is determined if at least one result criterion can be found.
3. Goals have not been met if the patient shows no change or progress. From the example above, it is determined if none of the criteria can be found, and it is even possible that new data or problems may arise.

Nurses carry out assessment techniques in various ways, including interviewing patients, families, or people who have a relationship with patients through observation and physical examination, notes from nurses, doctors, or other health workers who treat patients, laboratory results, and diagnostic tests.

C. THE VARIABLES THAT AFFECT THE ACHIEVEMENT OF GOALS

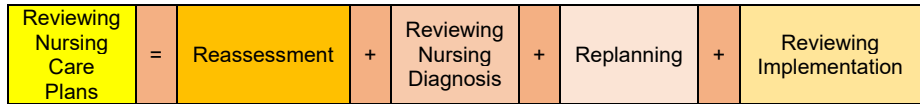
Nurses need to identify the variables that cause goals to be met or not by comparing current activities with plans that have been made. The nurse should use critical thinking skills to answer the following questions (Alfaro-LeFevre, 2014):

1. Are there goals and outcome criteria, as well as the interventions that are structured that can be used appropriately for each patient as an individual?
2. Are the interventions that have been prepared consistently carried out at the implementation stage according to the plan?
3. Are there any new symptoms, signs, or problems that can be concluded as detrimental, and it is time to modify the nursing plan appropriately?

D. REVIEWING NURSING CARE PLANS

In the next step, the nurse performs various activities to review the nursing care plan. This activity can be done if the goal is not or is achieved. The aim is to maintain a plan that can remain responsive to patients with changes experienced, such as changes in needs, health status, and medical treatment from clients, and is still appropriate to implement. This shows that nurses are

reassessing nursing care. Nurses are carrying out review activities, and reviewing diagnoses, planning, and implementation, which can be shown in scheme 8.1 (Alfaro-LeFevre, 2014)



Scheme 8.1 The formula for reviewing a nursing care plan

The results of the nursing care review activity lead to the emergence of a new nursing care plan, and this will then be implemented and re-evaluated. Then the review activity will be repeated.

1. Reassessment

Nurses conduct reassessments to obtain the latest information about patients being managed by continuously assessing patients in various ways. Nurses will get a new data set that will provide the latest data inventory to follow up to the next stage of the nursing process. The activities that the nurse will carry out in this activity are:

- a. The nurse checks the current data against the goals and outcome criteria developed at the planning stage and then decides whether it is still appropriate to maintain the patient's problem.
- b. The nurse checks the current data obtained while acting as the client, which is needed for the next stage of interpreting the nursing diagnosis, whether it is still appropriate to maintain or must form a new nursing diagnosis.

2. Reviewing Nursing Diagnoses

After the nurse has reviewed the assessment, the next activity is to review the nursing diagnoses. Nurse activities carried out in the activity of reviewing nursing diagnoses are

- a. The nurse analyzes the data by comparing the data at the initial assessment and the current data to determine whether the current nursing diagnoses are still accurate.
- b. Even though nursing diagnoses are still accurate, nurses must clarify each statement to determine whether the data obtained is needed to change the nursing diagnosis statement.
- c. The nurse finds new data on the reassessment activity and analyzes it to determine whether it is necessary to establish a new actual or potential nursing diagnosis.
- d. The nurse analyzes the data by comparing the goals and expected outcomes to determine if the problem no longer requires extended nursing care or the goals are being met.

This activity will produce nursing diagnoses according to the results of the evaluation, with the options being the nursing diagnoses remain the same and will become part of the planning, modified nursing diagnoses will be added, or nursing diagnoses that have been achieved will be eliminated.

If the nurse determines that the goal has not been achieved, then reassessment and review of nursing diagnoses will help to find a way out, such as incomplete or inappropriate data, inaccurate data analysis, which results in invalid nursing diagnoses or the development of new problems that affect the plans that have been prepared. If the nurse has found the data and decided the problem can be solved, the nurse can consider the patient's need for preventive nursing care if the patient is at risk for a problem.

3. Replanning

In this activity, nurses make several decisions, such as eliminating ineffective interventions and maintaining effective ones, finding new approaches so that interventions can achieve goals that the results of the decisions will create a nursing plan that is ready to be used. There are several activities carried out in this activity:

- a. The nurse reexamines the priority nursing diagnoses and determines whether they are still appropriate. Nurses change

priorities based on new data, diagnoses, medical management such as surgery, etc.

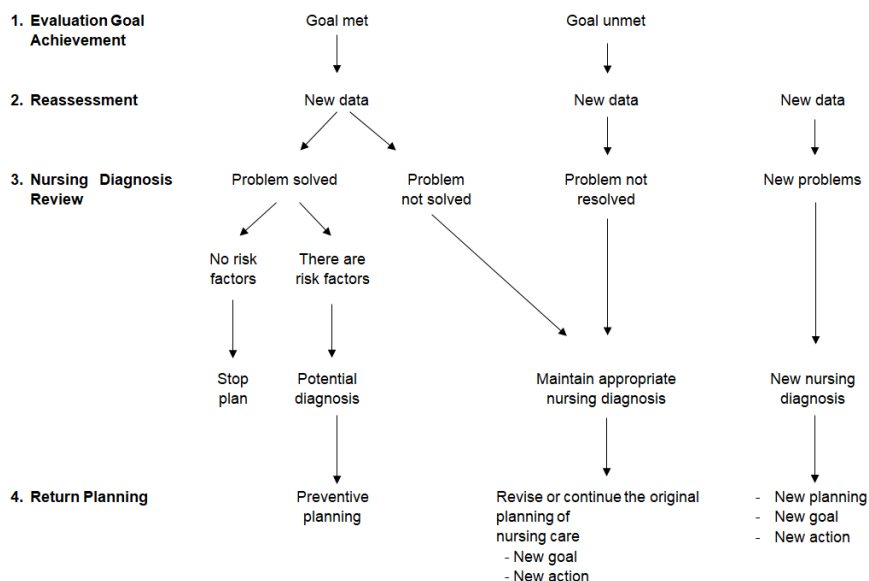
- b. The nurse re-examines the goals and outcome criteria and determines if they are still appropriate by considering several things such as the time frame, behavior, criteria, and patient's condition.
- c. The nurse identifies new goals with new nursing diagnoses and selects interventions.
- d. The nurse tests the nursing interventions that have been selected previously at the planning stage and determines whether they can still be used or need to be changed to make them more effective.

4. Reviewing Implementation

In this activity, the nurse examines and considers the factors that influence nursing actions, such as knowledge, beliefs about abilities and time and resources, behavior and skills of nurses, environment, and patient responses. The nurse's efforts to review during this implementation period will provide a solution to the patient's problem through an updated plan, especially if the goal is not achieved.

5. Termination of Nursing Actions

The nurse assesses that all the goals set have been achieved and determines that there are no more new problems, so the nurse has completed all the goals of nursing care. In the next step, the nurse completes the action plan and allows the individual to fully own his or her health. If the client has achieved all of the goals set and the nurse no longer defines a new problem, the nurse has achieved the overall goal of nursing care is to end the action plan and allow the individual to fully control his health.



Scheme 8.2 Reviewing nursing care plans

E. THE EXAMPLE OF NURSING EVALUATION

Below is an example of a nursing evaluation, it can be seen in Table 8.1

Table 8.1 The example of nursing evaluation

Nursing Diagnosis	Progress Notes	Signature
Activity intolerance related to an imbalance between supply and demand for oxygen is characterized by verbal reports of fatigue, shortness of breath after activity, pulse frequency before activity 84 times per minute and after activity 104 times per minute, blood pressure before activity 110/70 mmHg and after activity 140/90 mmHg. (D.0056)	Tuesday, 13-04-2021 S: - the client states that he is tired - the client states shortness of breath after activity O: - the pulse before is 70 beats per minute; after activity, is 98 beats per minute - BP before is 110/70 mmHg; after the activity is 140/90 mmHg A: The goal has not been met P: continue the intervention	

SUMMARY

The next step after carrying out the implementation of nursing is to evaluate. This activity does not only occur at this stage but can occur at other stages. There are two significant parts of the activity in this stage, the first is to decide whether the objectives are met, partially met, or not based on the nurse's review, and the second is to determine whether nursing interventions are still appropriate according results of the review of the assessment phase, nursing diagnoses, planning, and implementation.

REVIEW QUESTIONS

1. A nurse reading a patient's outcome criteria "will maintain good skin integrity, free from signs of infection." The nurse then compared the data with the observed data, including "intact skin with several red areas drawn on both elbows". What can the nurse conclude?
 - a. Goals met
 - b. Goals mostly met
 - c. Goals partially met
 - d. Very few goals met
 - e. Goals have not been met

2. The nurse reads the outcome criteria "The patient stated that he was able to move his left leg and hand on his own, the muscle strength in both legs was at least 4 on April 21, 2020. On that date, the nurse evaluated and obtained data that he felt helpless because he could not move since he had a stroke, could not move left leg and hand, muscle strength 2, lying in bed, found a reddish area of 5 cm around the patient's buttocks. What are the conclusions from the analysis?
 - a. Goals met
 - b. Goals partially met
 - c. Goals have not been met
 - d. Goals partially met, there is a new problem
 - e. Goals have not been met; there is a new problem

3. A postpartum patient has a nursing diagnosis of infection risk. The goal has been developed that the patient is free from infection during hospitalization. What assessment data will support that the objectives have been achieved?
 - a. Loss of appetite
 - b. Chilling presence
 - c. Reduced uterine size
 - d. Disappearance of fever
 - e. Swelling of the abdomen

4. A nurse performs nursing actions, training patients to do deep breathing and effective coughing. After the procedure was performed, the nurse asked how the patient was feeling, and the patient replied that the tightness had decreased. What best describes the reduced shortness of breath in this condition?
 - a. Subjective data
 - b. Assessment data
 - c. It's a patient problem
 - d. It is a process evaluation
 - e. Is an evaluation of the results

5. At the time of evaluation, the nurse found a new nursing diagnosis was "risk for impaired skin integrity related to immobility." What will the nurse do next?
 - a. Create new goals and interventions
 - b. Maintain existing goals and interventions
 - c. Some goals and interventions continued
 - d. Create goals and preventative interventions
 - e. Eliminate old unnecessary goals and interventions and create new ones

6. The nurse reads the outcome criteria "the patient shows fulfillment of a sense of security with the criteria stating a decrease in fear about the planned surgical activities, looks calm waiting for the surgery plan on May 3, 2018". Then, the nurse

evaluated on May 3, 2018, and got data “The patient stated that he was afraid and looked calm”. What is the nurse’s conclusion regarding the nursing intervention in this case?

- a. intervention stopped
- b. intervention continued
- c. Create a new intervention
- d. Some interventions continued
- e. Create preventive interventions

7. A nurse develops a care plan for a patient with traction attached and obtains a nursing diagnosis record of personal hygiene deficits. The nurse evaluates the care plan and determines which observations indicate successful criterion outcomes.

- a. The patient refuses the care given
- b. The patient allows the family to help with patient care
- c. The patient assists in his care as much as he can.
- d. The patient allows the nurse to complete primary care on a daily basis
- e. The patient is waiting for the nurse to help him perform personal hygiene

8. A nurse will evaluate the nursing process for a patient who has a nursing diagnosis of damage to tissue integrity related to poor circulation and compression. The nurse saw the nursing process notes that on the second of July, the patient showed a decubitus ulcer and would experience healing with a fused ulcer and dry wound, with no signs of infection in this one month. After one month, the nurse evaluates the results by examining the patient and finds that the decubitus ulcer is open and there is drainage. What is the next plan that the nurse will do next? The nurse will...

- a. Stop the plan
- b. Create a new plan
- c. Continuing with existing plans

- d. Revise or continue an existing plan
 - e. Continue existing plans and add new plans
9. A nurse performs a nursing evaluation and finds that all the goals that have been set are achieved, and the nurse no longer finds it necessary to determine the presence of new problems and the absence of risk factors for the patient. What will the nurse do next?
- a. Keep presenting the problem of risk as an effort to protect patients.
 - b. Continuing the care plan where the goals and interventions remain the same
 - c. Termination of the procedure and allowing the patient to take complete control of his health
 - d. Revise the nursing plan where there is a revision of goals, and there is a revision of nursing interventions
 - e. Create a new nursing plan where there is creation of goals and new nursing interventions
10. A nurse is making efforts to review a nursing care plan. What is the nurse's goal in carrying out these activities?
- a. Keeping the nursing plan appropriate and responsive to changing patient needs
 - b. Correcting the nursing actions that have been carried out are appropriate and realistic
 - c. Decide whether the patient has achieved the goals selected during the planning phase
 - d. Evaluating matters related to nursing assessment includes subjective data and objective data
 - e. Analyze nursing diagnoses to determine whether they are still appropriate or not with the patient's condition

Answer Keys: 1.e 2.e 3.b 4.d 5.a 6.a 7.c 8.b 9.c 10.b

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CHAPTER 9

APPLICATION OF THE NURSING PROCESS



LEARNING OBJECTIVES

- Perform nursing assessments
- Perform data analysis to determine nursing diagnoses
- Develop a nursing plan
- Perform implementation of nursing
- Perform nursing evaluations

A. ACTIVITY DESCRIPTION

This activity focuses on applying the nursing process that has been studied in theoretical learning, starting from assessment to evaluation. The implementation of activities leads to the synthesis of concepts and principles of nursing science in general through the application of knowledge and into the form of nursing care that experiences physical changes due to disturbances in the body's systems. This study is carried out in 1-semester credit system.

B. GUIDANCE PROCESS

The teaching and learning methods in applying the nursing process are pre- and post-conference, bedside teaching, case studies and assignments (reports), and case presentations. The time allocation used is 1 Semester Credit Unit x 170-minute x 14 weeks effectively = 2380 minutes/semester=39.7 hours/semester (39.7/7 hours/1 practice day = 6 days, 5 days of practical activities + 1 day of case presentation activities.

EVALUATION

The purpose of evaluating the results is to assess students' competence in applying the nursing process to patients who experience physical changes due to disturbances in the body's systems.

Outcome evaluation includes:

- Pre and Post Conference : 10%
- Individual Report : 30%
- Group report + presentation : 20%
- Implementation of the nursing process : 30%
- Attitude : 10%

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GLOSSARY

- ECG : an abbreviation of Electrocardiogram is a tool to record the electrical activity of the heart.
- Nasal Flaring : the nostrils that widen when breathing is often a sign of difficulty breathing
- Ronchi : an additional breath sound like running water is produced due to the movement of mucus with passing air.
- UKNI : it is an abbreviation of the *Ujian Kompetensi Ners Indonesia*, which is a national scale nurse professional competency test in Indonesia
- NCLEX-RN : an abbreviation of the National Council Licensure Examination for Registered Nurses is a national exam for licensing nurses in the United States
- CNRE : an abbreviation of the Canadian Nurse Registration Examination is a nurse license exam in Canada
- PROMETRIC-RN : the national nurse license exam in Saudi Arabia
- Hematocrit : the percentage of red blood cells in the blood, calculated taking into account both the number and size of these cells and expressed as a percentage of the blood volume. The normal value of hematocrit in women ranges from 37-48%, while in men it ranges from 42-52%.
- Hemoglobin : a protein in the blood that gives blood its red color, with the task of transporting oxygen and circulating it throughout the body, abbreviated as Hb. Normal levels

	range from 12-15 grams/dL in adult women and 13-17 grams/dL in adult men.
NANDA	: an abbreviation of the North American Nursing Diagnosis Association is one of the classification systems standardized nursing for the analysis process and final presentation of data assessment and identification of patient problems.
SDKI	: an abbreviation of the Standard Diagnosis Keperawatan Indonesia is a classification of nursing problems needed in nursing practice in Indonesia.
WSD	: an acronym for drainage water sail, which is a medical procedure aimed at removing fluid or air from the chest cavity through a tube.
ETT	: which stands for Endo Tracheal Tube, is a procedure for inserting a tube directly into the trachea, with the aim of ensuring that the airways remain free.
Wheezing	: additional breath sounds as the airways narrow, producing a whistling sound.
VTE	: an abbreviation of Venous Thromboembolism, is a condition in which a blood clot forms in a deep vein in the leg, groin, or arm or can reach the lungs.
Chest Physiotherapy	: an action to help expel phlegm using vibration and percussion techniques.
Mucolytic	: a type of cough medicine that is used as a medicine to thin, thick phlegm so that it can be easily expelled.
Nasal Cannula	: a tube that has two branches that are placed in the nostrils to drain oxygen into the patient's body.
Ventolin	: inhalation drugs that can be used to treat shortness of breath due to acute bronchospasm.

The development and publishing of this book have been supported by WHO Indonesia and Directorate General of Health Workforce, Ministry of Health Indonesia



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Kategori : Nursing

ISBN 978-623-02-7110-6



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