Nursing 209 / Catalano

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THEORIES AND MODELS OF NURSING

Learning Objectives

After completing this chapter, the reader will be able to:

1. Explain why theories and models are important to the profession of nursing.
2. Analyze the four key concepts found in nursing theories and models.
3. Interrelate systems theory as an important element in understanding nursing theories or models.
4. Evaluate how the four parts of all systems interact.
5. Synthesize three nursing theories, identifying how the different nursing theorists define the key concepts in their theories.

WHY THEORIES AND MODELS ARE IMPORTANT TO NURSING

For many nurses, and for most nursing students, the terms **theory** and **model** evoke images of thick textbooks filled with abstract, obscure words and convoluted sentences. The visceral response is often "Why is this important, I want to take care of real people!" The simple answer is: "Understanding and using nursing theories or models will help you to be a better nurse and provide better care to real people."

Although the terms **theory** and **model** are not exactly synonymous, in nursing practice they are often used interchangeably. Strictly speaking, a theory refers to a speculative statement concerning some element of reality that has not been proven. For example, the theory of relativity has never been proven, although the

results have often been observed. The nursing profession tends to use the term theory when attempting to explain apparent relationships between observed behaviors and their effect on a patient's health. In this nursing context, the goal of a theory is to describe and explain a particular nursing action in order to predict its effect on a patient outcome, such as improved health or recovery from illness. For example, turning unresponsive clients from side to side every 2 hours should help prevent skin breakdown and improve respiratory function.

A model, on the other hand, is a hypothetical representation of something that exists in reality. The purpose of a model is to attempt to explain a complex reality in a systematic and organized manner. For example, a hospital organizational chart is a model that attempts to demonstrate the interrelationships of the various levels of the hospital's administration.

Although a model tends to be more concrete than a theory, their common element is that they help explain and direct nursing actions. This ability, using a systematic and structured approach, is one of the key elements that raises nursing from a task-oriented job to the level of a real profession. With the use of a conceptual model, nurses can provide intelligent and thoughtful answers to the question: "What do nurses do?" (Nightingale/Harrison, 1966).

Consider this scenario: Mr. X had surgery for intestinal cancer 4 days ago. He has a colostomy and needs to learn how to take care of it at home because he is going to be discharged in 2 days. When the nurses attempt to teach him colostomy care, he looks away, makes sarcastic personal comments about the nurses, and generally displays a belligerent and hostile attitude.

Without an understanding of the underlying dynamics involved, the nurses' very human response to this client's behavior might be to become sarcastic and scold the client about his behavior, or to simply keep the amount of contact with him to a minimum (Aguilera, 1990). This type of response will not improve Mr. X's health status at all.

If the nurses knew, however, and understood the dynamics of the grief theory, they would realize that Mr. X was probably in the anger stage of the grief process. This understanding would direct the nurses to allow, or even to encourage, Mr. X to express his anger without condemnation, and to help him deal with his feelings in a constructive manner. Once Mr. X gets past the anger stage, he can move on to taking a more active part in his care, and thereby improve his health status. The goals of the nurses would then be achieved.

KEY CONCEPTS COMMON TO NURSING MODELS

Although nursing models vary in terminology and approach to health care, there are four concepts that are common to almost all of them. These concepts are patient or client (individual, or collective), health, nursing, and environment. Each nursing model has its own specific definition of these terms, but the underlying definitions of the concepts are similar.

Client

The concept of client (or patient) is central to all nursing models because it is the client who is the primary recipient of nursing care. Although the term **client** is usually used to refer to a single individual, it can also refer to small groups or to a large collective of individuals (for community health nurses, the community is the client).

The concept of client has changed over the years as the knowledge and understanding of human nature developed and increased. A client is more than simply a person who comes to a health care facility with an illness to be cured. Clients are now seen as complex entities affected by a variety of interrelating factors, such as the mind and body, the individual and the environment, and the person and the person's family. When nurses talk about clients, the term **biopsychosocial** is often used to express the complex relationship between the body, mind, and environment.

A client, in many of the nursing models, does not have to have an illness in order to be the central element of the model (this explains the current preference of using the term **client** over the term **patient**). This is also one of the clearest distinctions between medical models and nursing models. Medical models are almost exclusively devoted to curing diseases and to restoring health. Nursing models are concerned with disease cure and health restoration, but they also focus on prevention of disease and maintenance of health. A healthy person is just as important to many nursing models as the person with a disease.

Health

Health is the second common concept found in nursing models. Like the concept of client, the concept of health has undergone much development and change over the years as knowledge has increased. Originally thought of as an absence of disease, today's more realistic view often sees health as a continuum ranging from a completely healthy state where there is no disease, to a completely unhealthy state, which ends in death. At any given time in their lives, everyone is located somewhere along the health continuum and may move closer to one side or the other depending on circumstances and health status (Mitchell & Grippano, 1993).

Health is difficult to define because it varies so much from individual to individual. For example, a 22-year-old bodybuilder who has no chronic diseases perceives health differently than an 85-year-old who has diabetes, congestive heart failure, and problems seeing. The perception of health also varies from culture to culture, and at different historical periods within the same culture. In some past cultures, a sign of health was pure white skin, whereas in the American culture, a dark bronze suntan has been more desirable as a sign of health, until recently.

Environment

The concept of **environment** is also an element in most current nursing models. Nursing models often broaden the concept of environment from the simple

physical environment to elements such as living conditions, public sanitation, and air and water quality. Also included are factors such as interpersonal relationships and social interactions.

Some internal environmental factors that affect health include the personal psychologic processes, religious beliefs, sexual orientation, personality, and emotional responses. It has long been known that individuals who are highly self-motivated and internally goal directed (i.e., type A personality) tend to develop ulcers and have myocardial infarctions at a higher rate than the general population. Medical models, which are primarily illness oriented, although acknowledging this factor, may not consider it treatable. Nursing models that consider personality as one of the environmental factors that affect health are more likely to attempt to modify the individual's behavior (internal environment) to decrease the risk of disease.

Like the other key concepts found in nursing models, the concept of environment is used so that it is consistent within a particular model's overall context. Nursing models try to show how various aspects of environment interrelate and how they affect the client's health status. In addition, nursing models treat environment as an active element in the overall health care system and assert that positive alterations in the environment will improve the client's health status.

Nursing

The culminating concept in all the various nursing models is **nursing** itself. After consideration of what it means to be a client, what it means to be healthy, and how the environment influences the client's health status either positively or negatively, the concept of nursing delineates the function and role nurses have in their relationship with clients. Historically, the profession of nursing has been interested in providing basic physical care (i.e., hygiene, activity, nourishment), psychologic support, and relief of discomfort for clients. But modern nursing, although still including these basic elements of client care, has expanded into areas of health care only imagined a generation ago.

In the modern nurse-client relationship, the client is no longer the passive recipient of nursing care. The relationship has been expanded to include clients as key partners in curing and in the health maintenance process. In conjunction with the nurse, clients set goals for care and recovery, take an active part in achieving those goals, and help in evaluating whether or not those actions have achieved the goals (McCann-Flynn & Heffron, 1984).

Because of the broadened understanding of environment, several nursing models include manipulation of environmental elements affecting health as an important part of the nurse's role. The environment may be directly altered by the nurse with little or no input from the client, or the client may be taught by the nurse to alter the environment in ways that will contribute to curing disease, increasing comfort, or improving the client's health status (Riehl-Sisca, 1989).

When attempting to analyze and understand any nursing model, it is im-

portant to look for these four key concepts, client, health, environment, and nursing. These concepts should be clearly defined, closely interrelated, and mutually supportive. Depending on the particular nursing model, one element may be emphasized more than another. The resulting role and function of the nurse depend on which element is given greater emphasis.

GENERAL SYSTEMS THEORY

A widely accepted method for conceptualizing and understanding the world and what is in it is derived from a systems viewpoint. Generally understood as an organized unit with a set of components that interact and affect each other, a system acts as a whole because of the interdependence of its parts (Putt, 1978). As a result, when part of the system malfunctions or fails, it interrupts the function of the whole system rather than affecting merely one part. Humans, plants, cars, governments, the health care system, the profession of nursing, and almost anything that exists can be viewed as a system. The terminology and principles of systems theory pervade American society.

Although general systems theory in its pure form is rarely, if ever, used as a nursing model, its process and much of its terminology underlie many nursing models. Elements of general systems theory in one form or another have found their way into many textbooks and much of the professional literature. General systems theory often acts as the unacknowledged framework for many educational programs. Understanding the mechanisms and terminology of general systems theory is helpful in providing an orientation to understanding nursing models.

General systems theory, sometimes referred to simply as systems theory, is an outgrowth of an innate intellectual process. The human mind has difficulty comprehending large, complex entities as a single unit. As a result, the mind automatically divides that entity into smaller, more manageable fragments, and then examines each fragment separately. This is similar to the process of deductive reasoning in which a single complex thought or theory is broken down into smaller, interrelated pieces. All scientific disciplines, from physics to biology, and social sciences, such as sociology and psychology, use this method of analysis.

But systems theory takes the process a step further. After analyzing or breaking down the entity, systems theory attempts to put it back together by showing how the parts work individually and together within the *system*. This interrelationship of the parts makes the system function as a unit. And often, particularly where the system involves biologic or sociologic entities, the system that results is greater than the sum of its parts.

Although the early roots of general systems theory can be traced as far back as the 1930s, Ludwig von Bertalanffy is usually credited with the formal development and publication of general systems theory around 1950 (Stevens, 1984). His major achievement was to standardize the definitions of the terms used in

system theory, and make the concept useful to a wide range of disciplines. Systems theory is so widely applicable because it reflects the reality that underlies the basic human thought processes.

WHAT IS A SYSTEM?

Very simply, a **system** is defined as a set of interacting parts. The parts that compose a system may be similar or they may vary a great deal from each other, but they all have the common function of making the system work well to achieve its overall purpose. A school is a good example of how the dynamics and interrelatedness of a system works. A school as a system is composed of a large number of units including buildings, administrators, teachers, students, and a variety of other individuals, such as counselors, financial aid personnel, bookkeepers, and maintenance persons. Each of these individuals has a unique job but also contributes to the overall goal of the school, which is to provide an education for the students, and also to further the development of knowledge through research.

All systems are composed of four key parts. These parts are the system itself (that is, whether open or closed), input and output, throughput, and a feedback loop.

Open and Closed Systems

A system is categorized as either being open or closed. In reality, very few systems are completely open or completely closed. Rather, they usually are a combination of both open and closed systems.

Open systems are those in which relatively free movement of information, matter, and energy into and out of the system exists. In a completely open system there would be no restrictions on what moves in and out of the system, thus making its boundaries difficult to identify. Most systems have some control on the movement of information, energy, and matter around them. This control is maintained through the semipermeable nature of their boundaries, which allows some things in and keeps some things out, as well as allowing some out while keeping others in. This control on input and output leads to the dynamic equilibrium found in most well-functioning systems.

Theoretically, a closed system prevents any movement into and out of the system. In this case the system would be totally static and unchanging. Probably no absolutely closed systems exist in the real world, although there are systems that may tend to be closed to outside elements. A stone, for example, considered as a system, seems to be very nearly a perfectly closed system. It does not take anything in or put anything out. It does not change very much over long periods. In reality, though, it is affected by a number of elements in nature. It absorbs moisture when it is damp, freezes when cold, and becomes hot in the summer. Over long periods, these factors may cause the stone to crack, break down, and eventually turn into topsoil.

Systems that nurses deal with frequently are relatively open. Primarily, the client can be categorized as a highly open system that requires certain input elements and has output elements also. Other systems that nurses commonly work with, such as hospital administrators and physicians, are generally considered to be open systems, although their degree of openness may vary widely.

Input and Output

The processes by which a system interacts with elements in its environment are called input and output. **Input** is defined as any type of information, energy, or material that enters the system from the environment through its boundaries. Conversely, **output** is defined as any information, energy, or material that leaves the system and enters the environment through the system's boundaries. Open systems require relatively large amounts of input and output.

Throughput

A third term, sometimes used in relationship to the system's dynamic exchange with the environment, is **throughput.** Throughput is a process that allows the input to be changed so that it is useful to the system. For example, most automobiles run on some form of liquid fossil fuel (input) such as gasoline or diesel. Going to the gas station and pouring liquid fuel on the roof of the car probably will not produce the effects desired when most people buy fuel for their cars. But if the fuel is put into the gas tank, it can be transformed by the carburetor or fuel injection system into a fine mist, which when mixed with air and ignited by a spark plug burns rapidly to produce the force necessary to propel the car. Without this internal process (throughput) found in the car, liquid fuel is not a useful form of energy.

Feedback Loop

The fourth key element of a system is the **feedback loop.** The feedback loop allows the system to monitor its internal functioning so that it can either restrict or increase its input and its output. The feedback loop also provides for the system to monitor and regulate its own internal process so that it is maintained at the highest level of functioning.

Two basic types of feedback exist. Positive feedback leads to change within the system, with the goal of improving the system. Students in the classroom, for example, receive feedback from the teacher in a number of ways; it may be in the form of direct verbal statements such as "good work on this assignment," or feedback by examination and homework grades.

Feedback is considered positive if it produces a change in students' behavior, such as motivating them to study more, spend more time on assignments, or prepare for class in a more thorough manner. Negative feedback maintains sta-

bility; that is, it does not produce change. Negative feedback is not necessarily bad for a system. Rather, when a system has reached its peak level of functioning, negative feedback helps it maintain that level. For example, an athlete who has reached his or her peak level of performance through long hours of practice knows what type of practice is required to stay at that level of ability. Negative feedback in the form of optimal times in the case of runners, or number of pounds lifted in the case of weight lifters, indicates that no changes in practice patterns are required.

The feedback loop is an important element in systems theory. It makes the process circular, and links the various elements of the system together. Without a feedback loop, it is virtually impossible for the system to have any meaningful control over its input and output.

Other Terms Used in Systems Theory

Other terms used in speaking of systems theory carry over into nursing models in some degree.

The **hierarchy** of systems is an important concept. It is evident that there are some very large systems, some very small systems, and many intermediate-sized ones. Although these terms are somewhat relative to the overall system they are a part of, they do have distinct definitions.

The term **subsystem** is defined as one of the smaller, or less complex, systems that make up the total system. The study of human anatomy and physiology is a classic example of how the subsystem concept is used. Physiologic systems such as the nervous, cardiovascular, and endocrine systems are all subsystems of the total system we call the human being.

The smallest subsystems are called microsystems. The microsystem is the most basic, and least complex, element of the larger system. In human anatomy or physiology, the cell is usually considered a microsystem. Yet, the cell itself is composed of even smaller elements, such as cell membranes, nucleus, and mitochondria, which in turn could also be considered microsystems in themselves.

Equifinality is a term that is used in systems theory to describe the progressive complexity of interactions found in most systems. There is an innate tendency for systems to become more complex as they grow. Their increasing complexity is a result of the system's attempt to reach a final goal, regardless of the means. When the first self-rule government was established for the new United States of America, it was much less complex than it is now. Its primary goals were to keep internal order, to allow people to have a say in what happened to them, and to protect the country from invaders. Over the years as the country grew in population and developed as a nation, the goals remained the same, but the government, to carry out these goals, necessarily became more complex. Today, the government of the United States is an extremely complex macrosystem, with literally millions of subsystems in the form of agencies, bureaus, and programs.

Another term used in systems theory is **entropy**, the tendency systems have

to become disorganized and nonfunctional over time. As systems grow, an internal differentiation takes place within its subsystems. If input, particularly in the form of energy, does not keep pace with the growth and differentiation within the system, the increasing number of subsystems have fewer and fewer resources with which to carry out their functions. Unless the process is stopped or reversed, at some point the system stops functioning or may actually destroy itself. For the human body, the ultimate example of entropy is death and the subsequent deterioration of the body into its basic chemical elements.

The opposite of entropy is the process termed **negentropy** (negative entropy). Negentropy allows a system to control its input and output and maintain its internal equilibrium, thereby retaining a high degree of organization and functioning. Because negentropy goes against the natural, internal forces of the system, the system requires a very strong feedback loop and effective internal controls to make negentropy successful. Again, using the human body as an example of a system, negentropy is demonstrated in the complex subsystems that help keep that body healthy. The gastrointestinal system is designed to provide the nutrients that build, rebuild, and maintain the body. The endocrine system, regulated by the neurologic system, produces hormones that maintain the internal metabolic and electrolyte balances needed for normal functioning. The circulatory system distributes nutrients and hormones to the proper tissues at the proper time. The whole process requires a large amount of energy; a failure in any part of it affects all the other parts.

In systems theory, the term **nonsummativity** is defined as the degree of interdependence among the system's subsystems or parts. The higher the nonsummativity, the greater is the amount of interdependence of the system's parts. In a system with low nonsummativity, the parts of the system have a low degree of interdependence.

Some subsystems may be more important to generalized functioning than others. If a person suffers a severe head injury, major disruption of almost all the other subsystems usually occurs, whereas a skin laceration has less effect on other subsystems. All parts of a system need some degree of nonsummativity to remain even minimally functional (Putt, 1978).

MAJOR NURSING THEORIES AND MODELS

At last count, at least 15 published nursing models (or theories) have been used to direct nursing education and nursing care (Fawcett, 1989). The six nursing models discussed here (Table 2–1) have been selected because they are the most widely accepted and are good examples of how the concepts of client, health, environment, and nursing are used to explain and guide nursing actions. Discussion of these theories is not intended to be exhaustive, but rather to provide an overview of the theorists' main concepts. It is important to understand the terms used in the theories *as defined by their authors* and to see the interrelationship be-

TABLE 2–1. **Comparison of Selected Nursing Models**

Nursing Theory	Client	Health	Environment	Nursing
Roy Adaptation Model	Man—as a dynamic system with input and output	A continuum—the ability to adapt successfully to illness	Both internal and external stimuli that affect behaviors	Multistep process that helps the client adapt and reach the highest level of functioning
Orem Self-Care Model	Humans—biologic, psychologic social beings with the ability for self-care	Ability to live life to the fullest through self-care	The medium through which the client moves	Helping the client achieve health through assistance in self-care activities
King Model of Goal Attainment	Person—exchanges energy and information with the environment to meet needs	Dynamic process to achieve the highest level of functioning	Personal, interpersonal, and social systems and the external physical world	Dynamic process to identify and meet the health care needs of the person
Watson Model of Human Caring	Individual—has needs, grows, and develops to reach a state of inner harmony	Dynamic state of growth and development leading to full potential as a human being	Those factors the client must overcome to achieve health	Science of caring that helps clients reach their greatest potential
Johnson Behavioral System Model	Person—a behavioral system that is an organized and integrated whole composed of seven subsystems	A balanced and steady state within the behavioral system of the client	All those internal and external elements that affect client behavior	Activities that manipulate the environment and help clients achieve the balanced state of health
Neuman Health Care Systems Model	An open system that constantly interacts with internal and external environment	Relatively stable internal functioning of the individual in a high state of wellness (stability)	Internal and external stressors that produce change in the client	Identifies boundary disruption and helps clients in activities to restore stability

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