

# ROY ADAPTATION MODEL: *Sister Callista Roy*

## LEARNING OBJECTIVES

After completing this chapter the student should be able to

1. Describe the concepts of the Roy adaptation model as proposed by Roy
2. Explain the major concepts important to nursing as defined by Roy
3. Plan nursing care for a patient scenario utilizing the Roy adaptation model

## KEY TERMS

... Adaptation

... Adaptive modes

... Cognator subsystem

... Regulator subsystem

## BACKGROUND

SISTER CALLISTA ROY WAS BORN in 1939 in Los Angeles, California. She received a baccalaureate degree in nursing in 1963 from Mount Saint Mary's College. In addition to earning a master's degree in nursing in 1966 from the University of California–Los Angeles, Roy earned a master's degree in sociology in 1973, followed by a doctorate in sociology in 1977, both from the University of California (Phillips, 2010, p. 335).

Roy developed the basic concepts of her model while she was a graduate student at the University of California–Los Angeles after being challenged by Dorothy Johnson in a seminar to develop a conceptual model for nursing. The Roy adaptation model was first published in 1970. Since that time, Roy has published many books and articles, and has presented numerous lectures focusing on the model and its use in nursing practice. She has also continued to refine and redefine the model (Roy, 2009; Roy & Andrews, 1991, 1999) and has been awarded many honors for her contributions to nursing theory, practice, research, and education (Phillips, 2010).

Roy credits Harry Helson's adaptation theory for playing a key role in her early thinking and development of her own model. She also credits Rapoport's definition of systems as well as concepts from Lazarus and Selye (Roy & Roberts, 1981). In addition, Roy acknowledges the contributions made by other faculty and students to the development of the model. The Roy adaptation model is currently one of the most widely used frameworks in nursing practice, being applied by hundreds of thousands of nurses in countries all over the world.

## OVERVIEW OF THE *Roy* ADAPTATION MODEL

THE ROY ADAPTATION MODEL PRESENTS the person as a holistic adaptive system in constant interaction with the internal and the external environment. The main task of the human system is to maintain integrity in the face of environmental stimuli (Phillips, 2010). The goal of nursing is to foster successful adaptation.

According to Roy and Andrews (1999), **adaptation** refers to “the process and outcome whereby thinking and feeling persons as individuals or in groups, use conscious awareness and choice to create human and environmental integration” (p. 54). Adaptation leads to optimal health and well-being, to quality of life, and to death with dignity (Andrews & Roy, 1991). The adaptation level represents the condition of the life processes. Three levels are described by Roy: integrated, compensatory, and compromised life processes. An integrated life process may change to a compensatory process, which attempts to reestablish adaptation. If the compensatory processes are not adequate, compromised processes result (Roy, 2009, p. 33).

Coping processes in the Roy adaptation model include both innate coping mechanisms and acquired coping mechanisms. Innate coping processes are genetically determined or common to the species; they are generally viewed as automatic processes. In contrast, acquired coping processes are learned or developed through customary responses (Roy, 2009, p. 41).

The processes for coping in the Roy adaptation model are further categorized as “the regulator and cognator subsystems as they apply to individuals, and the stabilizer and innovator subsystems as applied to groups” (p. 33). A basic type of adaptive process, the **regulator subsystem** responds through neural, chemical, and endocrine coping channels. Stimuli from the internal and external environment act as inputs through the senses to the nervous system, thereby affecting the fluid, electrolyte, and acid–base balance, as well as the endocrine system. This information is all channeled automatically, with the body producing an automatic, unconscious response to it (p. 41).

The second adaptive process, the **cognator subsystem**, responds through four cognitive–emotional channels: perceptual and information processing, learning, judgment, and emotion. Perceptual and information processing includes activities of selective attention, coding, and memory. Learning involves imitation, reinforcement, and insight. Judgment includes problem solving and decision making. Defenses are used to seek relief from anxiety and make affective appraisal and attachments through the emotions (p. 41).

The cognator–regulator and stabilizer–innovator subsystems function to maintain integrated life processes. These life processes—whether

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integrated, compensatory, or compromised—are manifested in behaviors of the individual or group. Behavior is viewed as an output of the human system and takes the form of either adaptive responses or ineffective responses. These responses serve as feedback to the system, with the human system using this information to decide whether to increase or decrease its efforts to cope with the stimuli (Roy, 2009, p. 34).

Although one can identify specific processes inherent in the regulator–cognator subsystems, it is not possible to directly observe the functioning of these systems. The behaviors can be observed in four categories, or **adaptive modes**: physiologic–physical mode, self-concept–group identity mode, role function mode, and interdependence mode. It is through these four modes that responses to and interaction with the environment can be carried out and adaptation can be observed (p. 43).

Behavior in the *physiologic–physical mode* is the manifestation of the physiologic activities of all cells, tissues, organs, and systems making up the body. Five basic needs exist: oxygenation, nutrition, elimination, activity and rest, and protection. In addition, four processes are involved in physiologic adaptation: the senses; fluid, electrolyte, and acid–base balance; neurologic function; and endocrine function. The underlying need for the physiologic mode is physiologic integrity (p. 43). When viewing the first mode in relationship to a group of individuals, it is appropriate to use the terminology “physical mode” and to look at the group manifestation of adaptation in terms of basic operating resources, because the basic need associated with the physical mode for a group is resource adequacy or wholeness achieved by adapting to changes in physical resource needs (Roy, 2009, p. 43–44).

The *self-concept–group identity mode* includes the components of the physical self, including body sensation and body image, and the personal self, including self-consistency, self-ideal, and moral–ethical–spiritual self. The basic need underlying the self-concept mode for the individual is psychic and spiritual integrity—that is, the need to know who one is so that one can be or exist with a sense of unity (p. 44). “Group identity” is the term used to refer to the second mode with groups. This mode comprises interpersonal relationships, group self-image, social milieu,

culture, and shared responsibility of the group. Identity integrity is the need underlying this group adaptive mode (p. 44).

The *role function mode* focuses on the roles of the person in society and the roles within a group. The basic need underlying the role function mode is social integrity—that is, the need to know who one is in relation to others so that one will know how to act (p. 44).

Finally, the *interdependence mode* is a category of behavior related to interdependent relationships. This mode focuses on interactions related to the giving and receiving of love, respect, and value. The basic need of this mode is relational integrity, or the feeling of security in nurturing relationships. Thus it follows that two specific relationships are the focus within this mode for the individual: significant others and support systems. For the group, the interdependence mode relates to the social context in which the group operates; important factors in this case include infrastructure and member capability (Roy, 2009, p. 45).

In the Roy adaptation model, three classes of stimuli form the environment: the focal stimulus, contextual stimuli, and residual stimuli.

- ❖ “The focal stimulus is the internal or external stimulus most immediately in the awareness of the individual or group— the object or event most present in the consciousness” (p. 35).
- ❖ “Contextual stimuli are all other stimuli present in the situation that contribute to the effect of the focal stimulus. That is, contextual stimuli are all the environmental factors that present to the human adaptive system from within or outside but which are not the center of attention or energy” (p. 35). Even though the contextual stimuli are not the center of attention, these factors do influence how people deal with the focal stimulus.
- ❖ Residual stimuli are environmental factors within or outside human systems, the effects of which are unclear in the situation. The effects of these stimuli may be unclear if there is no awareness on the part of the patient that a stimulus is an influence, or it may not be clear to the observer that these stimuli are having an influence on the human system (p. 36).

## MAJOR CONCEPTS OF NURSING ACCORDING TO *Roy*

IN ADDITION TO THE CONCEPTS already presented, the four metaparadigm concepts of nursing are identified in the Roy adaptation model. These concepts are summarized in Table 10-1.

### *Person*

According to the Roy adaptation model, humans are holistic, adaptive systems. “The human system is described as a whole with parts that function as unity for some purpose. Human systems include people as individuals, or in groups, including families, organizations, communities, and society as a whole” (Roy & Andrews, 1999, p. 31). The person is the main focus of nursing and is the recipient of nursing care. The person is specifically defined as “an adaptive system with cognator and regulator subsystems acting to maintain adaptation in the four adaptive modes” (Roy, 2009, p. 12).

### *Environment*

Environment is the second major concept of the model. It is understood as the world within and around humans as adaptive systems (Roy, 2009, p. 46). The environment refers to “all conditions, circumstances, and

TABLE 10-1 Metaparadigm Concepts as Defined in the Roy Adaptation Model

<i>Person</i>	“An adaptive system with cognator and regulator subsystems acting to maintain adaptation in the four adaptive modes” (Roy, 2009, p. 12)
<i>Environment</i>	“All conditions, circumstances, and influences surrounding and affecting the development and behavior of persons and groups, with particular consideration of mutuality of person and earth resources” (Roy, 2009, p. 12)
<i>Health</i>	“A state and process of being and becoming an integrated and whole that reflects person and environment mutuality” (Roy, 2009, p. 12)
<i>Nursing</i>	The goal of nursing is “to promote adaptation for individuals and groups in the four adaptive modes, thus contributing to health, quality of life, and dying with dignity by assessing behavior and factors that influence adaptive abilities and to enhance environmental factors” (Roy, 2009, p. 12)


influences surrounding and affecting the development and behavior of persons and groups, with particular consideration of mutuality of person and earth resources” (p. 12). It is the changing environment that stimulates the person to make adaptive responses (Andrews & Roy, 1991, p. 18). However, any environmental change—even if positive—demands increasing energy to adapt to the situation. Factors in the environment that affect the person are categorized as focal, contextual, and residual stimuli (Phillips, 2010, p. 343).

## *Health*

Health is “a state and process of being and becoming integrated and whole that reflects person and environment mutuality” (Roy, 2009, p. 12). In her early writings, Roy wrote about health as existing along a continuum; she now views this conceptualization of health as “simplistic and unrealistic since it does not accommodate the coexistence of wellness and illness and excludes individuals with chronic disabilities or terminal illness who, in spite of their condition, are dealing effectively with life’s challenges” (p. 46–47). During the 1990s, Roy’s writings began to focus on health as a process in which health and illness can coexist (Roy & Andrews, 1999; Phillips, 2010, p. 342). In either conceptualization, health is viewed as a reflection of adaptation (Andrews & Roy, 1991, p. 21).

## *Nursing*

Roy defines nursing as a “health care profession that focuses on human life processes and patterns of people with a commitment to promote health and full life-potential for individuals, families, groups, and the global society” (Roy, 2009, p. 3). She defines nursing as the science and practice. The goal of nursing is “to promote adaptation for individuals and groups in the four adaptive modes, thus contributing to health, quality of life, and dying with dignity by assessing behavior and factors that influence adaptive abilities and to enhance environmental factors” (Roy, 2009, p. 12).



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## *Analysis of the Roy Adaptation Model*

The analysis presented here consists of an examination of assumptions and propositions as well as a brief critique of the adaptation model of nursing.

### *Assumptions of the Roy Adaptation Model*

Assumptions included in Roy's model are classified into three categories: philosophic assumptions, scientific assumptions, and cultural assumptions. Philosophic assumptions of the model include the following:

- ❖ Persons have a mutual relationship with the world and a God-figure.
- ❖ Human meaning is rooted in an omega point convergence of the universe.
- ❖ God is intimately revealed in the diversity of creation and is the common destiny of creation.
- ❖ Persons use human creative abilities of awareness, enlightenment, and faith.
- ❖ Persons are accountable for entering the process of deriving, sustaining, and transforming the universe (Roy, 2009, p. 31).

Scientific assumptions of the model include the following:

- ❖ Systems of matter and energy progress to higher levels of complex self-organization.
- ❖ Consciousness and meaning are constitutive of person and environment integration.
- ❖ Awareness of self and environment is rooted in thinking and feeling.
- ❖ Human decisions are accountable for integration of creative processes.
- ❖ Thinking and feeling mediate human action.
- ❖ System relationships include acceptance, protection, and fostering interdependence.
- ❖ Persons and earth have common patterns and integral relations.
- ❖ Person and environment transformations are created in human consciousness.
- ❖ Integration of human environment meanings results in adaptation (Roy, 2009, p. 31).



Cultural assumptions include the following:

- ❖ Experiences within a specific culture will influence how each element of the Roy adaptation model is expressed.
- ❖ Within a culture, there may be a concept that is central to the culture and that will influence some or all of the elements of the Roy adaptation model to a greater or lesser extent.
- ❖ Cultural expressions of the elements of the Roy adaptation model may lead to changes in practice activities such as nursing assessment.
- ❖ As Roy adaptation model elements evolve within a cultural perspective, implications for education and research may differ from the experience in the original culture (Roy, 2009, p. 31).

### *Propositions of the Roy Adaptation Model*

The following are the relational propositions of the Roy adaptation model (Fawcett, 2005, p. 382–383):

- ❖ Stimuli from the internal and external environments (through the senses) serve as inputs to the nervous system and affect the fluid, electrolyte, and acid–base balance, as well as the endocrine system. This information is channeled automatically in the appropriate manner, and an automatic, unconscious response is produced (Roy & Andrews, 1999, p. 46).
- ❖ Internal and external stimuli, including psychological, social, physical, and physiological factors, serve as inputs to the cognator subsystem (Roy & Andrews, 1999, p. 47).
- ❖ Stimuli and adaptation level serve as input to human adaptive systems; processing of this input through control processes results in behavioral responses (Roy & Andrews, 1999, p. 43).
- ❖ Human systems, as individuals, families, groups, organizations, or communities, must sense changes in the environment and make adaptations in the way they function to accommodate new environmental requirements (Roy & Andrews, 1999, p. 44).
- ❖ Adaptation level affects the human system's ability to respond positively in a situation (Roy & Andrews, 1999, p. 36).

- ❖ The changing environment stimulates the person to make adaptive responses. As the environment changes, the person has the opportunity to continue to grow, to develop, and to enhance the meaning of life for everyone (Andrews & Roy, 1991, p. 18).
- ❖ The characteristics of the internal and external stimuli influence the adequacy of cognitive and emotional processes (Roy & Andrews, 1999, p. 547).
- ❖ The characteristics of the internal and external stimuli influence (behavioral) responses (Roy & Andrews, 1999, p. 547).
- ❖ Human beings are described as adaptive systems that are constantly growing and developing within changing environments. Health for human adaptive systems can be described as a reflection of this interaction or adaptation (Roy & Andrews, 1999, p. 53–54).
- ❖ The goal of nursing is the promotion of adaptation in each of the four adaptive modes, thereby contributing to health, quality of life, or dying with dignity (Roy & Andrews, 1999, p. 55).
- ❖ The general goal of nursing intervention is to maintain and enhance adaptive behavior and to change ineffective behavior to adaptive (Roy & Andrews, 1999, p. 81).
- ❖ It is the nurse's role to promote adaptation in situations of health and illness and to enhance the interaction of human systems with the environment, thereby promoting health (Roy & Andrews, 1999, p. 55).

### *Brief Critique of the Roy Adaptation Model*

The concepts of the Roy adaptation model are clearly and consistently defined. The model is internally consistent, even though it is a complex model with several major concepts, subconcepts, and many relational statements. It has the level of complexity required to make it broad in scope and generalizable for both practice and research; however, once learned, the model is logical and easy to understand (Phillips, 2010).

**T**HE ROY ADAPTATION MODEL IS commonly used in nursing practice. To use the model in practice, the nurse follows Roy's six-step nursing process:

1. Assess the behaviors manifested from the four adaptive modes (physiological–physical mode, self-concept–group identity mode, role function mode, and interdependence mode).
2. Assess and categorize the stimuli for those behaviors.
3. Make a nursing diagnosis based on the person's adaptive state.
4. Set goals to promote adaptation.
5. Implement interventions aimed at managing stimuli to promote adaptation.
6. Evaluate achievement of adaptive goals (Phillips, 2010).

Andrews and Roy (1986) pointed out that by manipulating the stimuli rather than the patient, the nurse enhances “the interaction of the person with their environment, thereby promoting health” (p. 51).

**R**OY SPECIFICALLY ADDRESSES INCORPORATION OF a six-step nursing process within the context of her model, stressing that although steps are discussed separately for clarity, the process is ongoing and simultaneous (Roy, 2009, p. 57). Roy also states in relationship to each of the steps of the nursing process that “nurses rely on highly developed technical, interpersonal, and intuitive skills as they assess and initiate interventions involving approaches such as physical care, anticipatory guidance, health teaching, and counseling (p. 59).

**THE *Roy*  
ADAPTATION  
MODEL AS A  
FRAMEWORK  
FOR NURSING  
PRACTICE**

**THE NURSING  
PROCESS  
AND THE *Roy*  
ADAPTATION  
MODEL**

## *Assessment*

The first step of the process is the assessment of behavior—after all, behavior is the indicator of how a human adaptive system manages to cope with, or adapt to, changes in health status. Behaviors may be either observable or non-observable (Roy, 2009, p. 58). In the nursing situation, the primary concern is behavior that requires further adaptive responses as a result of environmental changes straining the coping processes of the adaptive system. The nurse must know how to assess for these behaviors, compare them to specific criteria to evaluate their contribution to the maintenance of integrity, and identify the strengths of the coping processes and the demands faced (p. 59).

During the assessment phase of the nursing process, the nurse systematically considers behaviors manifested from the four adaptive modes and assesses the stimuli for those behaviors, categorizing them as focal, contextual, or residual stimuli (Phillips, 2010, p. 435). The nurse uses observational skills, intuition, accurate measures (e.g., blood pressure reading, eye chart, or assessment scale), and interviewing skills to systematically collect data related to behaviors (Roy, 2009, p. 59–60).

The nurse must then make a tentative judgment of the behavior. In making this initial judgment as to whether a behavior is adaptive or ineffective, the nurse must continually involve the patient. Ultimately, the patient's perceptions associated with the effectiveness of behaviors are essential in determining if the behavior is adaptive or ineffective (p. 61).

In addition to the assessment of behaviors, the nurse must identify the internal and external stimuli that are influencing behaviors. The skills used for assessing stimuli are the same ones that the nurse used in assessing behaviors—namely, astute observation, sensitive intuition, accurate measurement, and perceptive interview. To set priorities, the nurse, in collaboration with the patient, identifies the focal, contextual, and residual stimuli that are influencing behavior (p. 62). In addition, “the nurse identifies the particular stimulus of the adaptation level, that is, integrated, compensatory, and compromised life processes that contribute to adaptive or ineffective behavior” (p. 62).

Analysis of the data results in a statement or nursing diagnosis reflective of the patient's adaptive state. In setting up a nursing diagnosis within the framework of her adaptation model, Roy suggests that nurse develop

statements that match behaviors and the most relevant stimuli. This type of wording of the diagnosis facilitates the step of goal setting (p. 66–67).

## *Planning*

During the next phase of the nursing process, the nurse and the patient set goals to promote adaptation. Goal setting within the framework of Roy's model involves the statement of behavioral outcomes of nursing care that will promote adaptation. "The goal statement should designate not only the behavior to be observed but the way the behavior will change (as observed, measured, or subjectively reported) and the time from in which the goal is to be attained" (Roy, 2009, p. 77).

## *Implementation*

During the implementation phase of the process, the nurse determines how best to assist the patient in attaining his or her goals and chooses interventions to promote the desired adaptation through either changing stimuli or strengthening adaptive processes (Roy, 2009, p. 78). The identification of possible approaches to nursing intervention includes the selection of which stimuli to change. To make this decision, the nurse lists the stimuli affecting specific behaviors and identifies the relevant coping processes. Then the consequences of changing the stimulus or affecting a coping process are identified together with the probability (low, moderate, or high) of their occurrence. In collaboration with the patient, the nurse judges the outcome of the consequence as either desirable or undesirable (p. 79). Once the appropriate nursing intervention has been selected, the nurse works with the patient to initiate steps that will alter the stimulus and enhance coping (p. 80).

## *Evaluation*

Evaluation focuses on judging the effectiveness of the nursing intervention in relation to the behavior of the individual or group. To determine if the adaptive goals have been met, the nurse uses the same skills as were employed in the assessment phase of the process—observation, intuition, measurement, and interviewing (Roy, 2009, p. 81).



What do you think about the six-step version of the nursing process advocated for use with the Roy adaptation model? Do you believe that it allows the nurse to meet the standards of care practice requirements for assessment, planning, implementation, and evaluation?

**SCENARIO  
ILLUSTRATING  
NURSING CARE  
FRAMED BY THE  
*Roy* ADAPTATION  
MODEL UTILIZING  
THE NURSING  
PROCESS**

THE FOLLOWING SCENARIO ILLUSTRATES NURSING care of the patient relative to one identified nursing problem framed by Roy's adaptation model. This scenario is not intended to cover all aspects of care, but rather is intended to stimulate thinking about how specific care might be approached using this theory as a framework for practice.

Mrs. M. is a 37-year-old single mother with two school-age children. Mrs. M. suffered multiple facial injuries as a result of a motor vehicle accident several months ago. The injuries have healed without complication, but she has moderate residual scarring.

Assessment of Mrs. M. begins with the behaviors manifested from the four adaptive modes. The nurse uses observational skills, intuition, measurements, and interviewing skills to collect data. The nurse involves Mrs. M. in the assessment to verify the nurse's own perceptions. The nurse verifies that Mrs. M. has generally adapted well following the motor vehicle accident. The exception is the self-concept mode: Some of her behaviors are ineffective in relation to adaptation, as evidenced by Mrs. M.'s avoidance of social gatherings, wearing dark glasses and big hats, and wearing heavy makeup to cover her scars.

Next, the nurse and Mrs. M. set goals to promote adaptation. Goal setting for Mrs. M. within the framework involves statements of measurable behavioral outcomes of nursing care that will promote adaptation related to body image within the self-concept adaptive mode. The nurse, in collaboration with Mrs. M., chooses interventions based on current best practices to promote adaptation by either changing stimuli or strengthening Mrs. M.'s adaptive processes. Evaluation focuses on judging the effectiveness of the nursing interventions in relation to Mrs. M.'s behaviors. In addition, if any other nursing problems are uncovered during the assessment, the nurse addresses those problems simultaneously using the process described and incorporating best practices to provide appropriate nursing care.

### CLASSROOM ACTIVITY 10-1

Form small groups. Each group should add to the plan of care for Mrs. M. in the preceding scenario based on other potential or actual nursing problems typical for a patient with same medical diagnosis or symptoms and demographics. Each group should develop a plan for one additional nursing problem using Roy's theory as the basis for practice, while considering at least one of the four adaptive modes. Each group should then share its plan with the class.

### CLASSROOM ACTIVITY 10-2

Form small groups. Using a case study provided by the instructor, develop a plan of care using Roy's nursing theory as the basis for practice. Each group should then share its plan of care with the class.

### CLASSROOM ACTIVITY 10-3

Form small groups. Using a case study provided by the instructor, develop a plan of care using one of the theories as the basis for practice; each group should select a different nursing theory. Each group should then share its plan of care with the class and discuss the similarities and differences in care.



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