

JACQUELINE FAWCETT

APPLYING CONCEPTUAL MODELS OF NURSING

QUALITY IMPROVEMENT,
RESEARCH, AND PRACTICE

APPLYING CONCEPTUAL MODELS OF NURSING

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Quality Improvement, Research, and Practice

Jacqueline Fawcett, PhD, ScD (Hon), RN, FAAN, ANEF



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PREFACE

Inasmuch as some nurses are advocating use of conceptual models from non-nursing disciplines rather than nursing conceptual models, nursing students and nurses at all levels of education and expertise are now rejecting nursing conceptual models even more than in the past. I believe that the major reason for rejection of nursing conceptual models is the lack of understanding of how these abstract and general perspectives of the discipline of nursing can be used to guide nursing practice, nursing quality improvement (QI) projects, and nursing research. Therefore, the purpose of this book is to present a practical guide for the application of nursing conceptual models to nursing practice, nursing QI projects, and several types of research, including literature reviews; instrument development; and descriptive, correlational, experimental, and mixed-methods designs for each of the nine conceptual models included in the book.

This book evolved from more than 40 years of teaching nursing students about the value of applying nursing discipline-specific knowledge to all nursing activities. It is the product of what I have learned from my students and faculty colleagues about the pragmatics of constructing conceptual-theoretical-empirical (CTE) structures to better understand and appreciate how the starting point for all practice, QI projects, and research always is a nursing conceptual model.

The first chapter of this book is an introduction to conceptual models of nursing and their use as guides for practical nursing activities. This chapter includes the definition and functions of a conceptual model of nursing, a discussion of the need for use of conceptual models to guide practical nursing activities, guidelines for selection of a conceptual model, and discussion of how to construct and apply the CTE structures that are used to guide practical nursing activities.

Each of the next nine chapters focuses on one nursing conceptual model. The nine conceptual models of nursing included in this book are: Johnson's Behavioral Systems Model, King's Conceptual System, Levine's Conservation Model, Neuman's Systems Model, Orem's Self-Care Framework, Rogers's Science of Unitary Human Beings, Roy's Adaptation Model, the Synergy

Model, and the Transitions Framework. A concise yet comprehensive summary of the content of each conceptual model is given, including concepts, definitions of the concepts (non-relational propositions), and associations between the concepts (relational propositions). **The practice methodology, QI methodology, and research methodology for each conceptual model are explicated, and downloadable templates for use of the methodologies are available, in the ancillary online material that accompanies this book. Qualified instructors can obtain this material by e-mailing Springer Publishing Company at textbook@springerpub.com.** The methodologies are applied in the form of CTE structures to a practice situation, a QI project, a literature review, an instrument development study, a descriptive qualitative study, a correlational study, an experimental study, and a mixed-methods study for each of the nine conceptual models. Applications of each conceptual model have been drawn from available published literature; if relevant literature was not available, a hypothetical application was constructed.

This book is designed as a required or recommended text for undergraduate and graduate students, nurse educators, nurse researchers, and practicing nurses, including novice nurses and advanced practice nurses. Specifically, the book is intended for associate degree, baccalaureate degree, master's degree, practice doctoral degree (e.g., doctor of nursing practice [DNP]), and research doctoral degree (e.g., PhD) nursing students, as well as for nurse educators, nurse researchers, and any other nurses who are interested in applying distinctive nursing knowledge to their particular practical nursing activities. The book may be used for any required or elective academic course and for continuing education workshops and courses for which the focus is the application of nursing discipline-specific knowledge to practice, QI, and/or research activities.

In undergraduate programs, the book is best used as part of the first clinical course or a course that is a pre- or corequisite of the first clinical course. The portion of each chapter of the book focusing on nursing practice is most appropriate for undergraduate students, although the portions focusing on nursing QI projects and nursing research could be used as required or recommended content for baccalaureate degree program undergraduate nursing research courses, as a companion to an undergraduate nursing research textbook. For graduate programs, this book would be best used in the first course addressing nursing knowledge in master's and DNP programs, or as a required or recommended book in master's, DNP, and PhD program research courses as a companion to a graduate-level nursing research textbook.

No other book includes the wide scope of examples of practical applications that are included in this book and no other book includes downloadable or printed templates for CTE structures for practice, QI projects, literature reviews, instrument development studies, descriptive qualitative studies, correlational studies, experimental studies, and mixed-methods studies.

Non-nursing conceptual models are not included in this book. As a champion of distinctive nursing knowledge, I do not believe that nursing practice, nursing QI projects, and nursing research should be guided by non-nursing knowledge.

I understand that many other nurses do not agree with me. Therefore, I encourage anyone who believes that non-nursing knowledge can and, perhaps, should guide nurses' practical activities to apply the content of Chapter 1 of this book to provide examples of application of those non-nursing conceptual models.

In addition, this book focuses on nursing conceptual models and the construction of CTE structures. Therefore, the book deliberately does not include chapters addressing nursing or non-nursing theories. When the starting point is theory, the conceptual model (C) component of the CTE structure may not be known and, therefore, a complete CTE structure cannot be constructed. Theories of change and theories of QI are, however, included in the book as methodological theories that guide the conduct of the methods portion of the QI projects included in Chapters 2 through 10 of this book.

I acknowledge the continuing stimulation to my thinking from colleagues and students. Their questions about more examples of explicit CTE structures were the catalyst for this book. I acknowledge and am grateful to the University of Massachusetts Boston for granting me a sabbatical leave, which provided the concentrated time to write much of this book. I also acknowledge the supportive comments of the peer reviewers for this book and for the continuing support of the editors and staff of Springer Publishing Company, especially Joseph Morita and Rachel Landes.

As always, I acknowledge the continuing love and support from my husband, John S. Fawcett. I wrote this book at our home in Maine, at a time during which we celebrated our 50th wedding anniversary.

Jacqueline Fawcett

CHAPTER 6

OREM'S SELF-CARE FRAMEWORK¹

Dorothea E. Orem's Self-Care Framework focuses on the actions taken by people who are considered legitimate patients to meet their own and their dependent others' therapeutic self-care demands, as well as on actions taken by nurses to effectively use nursing systems that will assist people who have limitations in their abilities to provide continuing and therapeutic self-care or care of dependent others (Orem, 2001). The goal of nursing guided by Orem's Self-Care Framework is "to compensate for or overcome patients' health-associated limitations in self-care or dependent care" (Orem, 2001, p. 289).

OREM'S SELF-CARE FRAMEWORK

This section of the chapter includes the concepts of Orem's Self-Care Framework and the definitions (non-relational propositions) of the concepts and the dimensions of the multidimensional concepts (Orem, 2001).

Patient is defined as a recipient of care from a health care professional. The two dimensions of the concept are individual and multiperson unit.

Individual is defined as one person or one member of a multiperson unit who is the unit of service for nursing practice.

Multiperson unit is defined as more than one person, all of whom are regarded as a whole.

Therapeutic Self-Care Demand is defined as the demand on the individual or multiperson unit for continuing effective care of self. The three dimensions of the concept are universal self-care requisites, developmental self-care requisites, and health deviation self-care requisites.

Universal self-care requisites is defined as a type of self-care requisite that is common to all people at all stages of life, but adjusted for age,

developmental stage, and the environment. The eight universal self-care requisites are:

1. The maintenance of a sufficient intake of air
2. The maintenance of a sufficient intake of water
3. The maintenance of a sufficient intake of food
4. The provision of care associated with elimination processes and excrements
5. The maintenance of a balance between activity and rest
6. The maintenance of a balance between solitude and social interaction
7. The prevention of hazards to human life, human functioning, and human well-being
8. The promotion of human functioning and development within social groups in accord with human potential, known human limitations, and the human desire to be normal (Orem, 2001, p. 225)

Developmental self-care requisites is defined as requirements for self-care at each stage of development.

Health deviation self-care requisites is defined as special demands for self-care that are associated with disease, injury, disfigurement, disability, and/or medical care interventions that physicians perform or prescribe.

Self-Care is defined as actions taken by individuals to regulate their function and development.

Self-Care Agent is defined as an individual who is able to identify his or her self-care requisites, decide what actions are needed to meet the requisites, and perform those actions.

Dependent Care is defined as actions taken by adults for dependent family members or friends who cannot perform adequate self-care.

Dependent-Care Agent is defined as an individual who provides care for children and dependent adult family members or friends.

Self-Care Agency is defined as the individual's ability to meet his or her continuing requirements for self-care, which may vary throughout the life span.

Dependent-Care Agency is defined as the individual's ability to provide care for dependent others.

Nursing Agency is defined as the power of individuals gained through education and training to master the knowledge and skills needed to practice nursing.

Basic Conditioning Factors is defined as factors that affect an individual's ability to perform required self-care. The 10 Basic Conditioning Factors are:

1. Age
2. Gender
3. Developmental state
4. Health state
5. Sociocultural orientation
6. Health care system factors, for example, medical diagnostic and treatment modalities

7. Family system factors
8. Patterns of living including activities regularly engaged in
9. Environmental factors
10. Resource availability and adequacy (Orem, 2001, p. 245).

Power Components is defined as the initiation of trains of events that enable the performance of required actions. The two dimensions of the concept are self-care agency power components and nursing agency power components.

Self-care agency power components is defined as human powers that enable the performance of actions required for self-care.

Nursing agency power components is defined as human powers that enable the performance of actions required for nursing.

Self-Care Deficit is defined as the relationship between self-care agency and therapeutic self-care demands of individuals; when therapeutic self-care demands exceed self-care agency, a self-care deficit occurs.

Dependent-Care Deficit is defined as the relationship between dependent-care agency and the therapeutic self-care demands of dependent others; when the therapeutic self-care demands of a dependent other exceed dependent-care agency, a dependent-care deficit occurs.

Environmental Features is defined as aspects of the environment that are relevant to self-care requisites. The two dimensions of the concept are physical, chemical, and biologic features; and socioeconomic–cultural features.

Physical, chemical, and biologic features is defined as the atmosphere of the earth, gaseous composition of air, solid and gaseous pollutants, smoke, weather conditions, and geologic stability of the Earth's crust, as well as pets, wild animals, and infectious organisms or agents along with their human and animal hosts.

Socioeconomic–cultural features is defined as family and community factors, such as family composition, relationships, dynamics, and lifestyle and community composition, functions, and resources.

Health State is defined as “the stage of an individual that reflects wholeness or soundness of the physical and mental self” (Orem, 2001, p. 186).

Well-Being is defined as the individual's perception of the condition of his or her existence, which may be characterized as feeling content, pleasure, happiness, fulfilling one's self-ideal, and having positive spiritual experiences.

Professional–Technological System of Nursing Practice is defined as the nursing process. The five dimensions of the concept are case management operations; diagnostic operations; prescriptive operations; regulatory operations—design of nursing systems for performance of regulatory operations, planning for regulatory operations, and production of regulatory care; and control operations.

Case management operations is defined as the nurse's use of a case management approach to control, direct, and check each of the nursing diagnostic, prescriptive, regulatory, and control operations.

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Diagnostic operations is defined as identification of the unit of service for nursing practice and why nursing is needed, as well as collection of demographic data and calculation of present and future therapeutic self-care demands.

Prescriptive operations is defined as specification of the means to be used to meet the therapeutic self-care demand.

Regulatory operations is defined as design and implementation of a nursing system and method(s) of helping. The subdimensions of regulatory operations are design of nursing systems for performance of regulatory operations, planning for regulatory operations, and production of regulatory care.

Design of nursing systems for performance of regulatory operations is defined as development of a nursing care plan for a wholly compensatory, partly compensatory, or supportive–educative nursing system of care and one or more methods of helping. The wholly compensatory nursing system is selected when the patient cannot or should not perform any self-care actions, and thus the nurse must perform them; the partly compensatory nursing system is selected when the patient can perform some, but not all, self-care actions; and the supportive–educative nursing system is selected when the patient can and should perform all self-care actions but requires physical, emotional, or social support and teaching. The methods of helping, which may be used with any of the three nursing systems, are acting for or doing for the patient, providing a developmental environment, supporting the patient physically or psychologically, guiding the patient, and teaching the patient.

Planning for regulatory operations is defined as specification of what is needed to produce the selected nursing system and method(s) of helping, including time, place, environmental conditions, equipment and supplies, number and qualifications of nurses and other health care providers necessary to produce the nursing system and to evaluate its effects, organization and timing of tasks to be performed, and designation of who (nurse and/or patient) is to perform the tasks.

Production of regulatory care is defined as implementation of the selected nursing system and method(s) of helping.

Control operations is defined as evaluation of the results of implementation of the selected nursing system and method(s) of helping.

OREM'S SELF-CARE FRAMEWORK: RELATIONAL PROPOSITIONS

The statements of associations (relational propositions) between concepts of Orem's Self-Care Framework are listed here.

- Basic Conditioning Factors are related to Self-Care Agency, such that the person's ability to perform self-care and the kind and amount of self-care that is required are influenced by Basic Conditioning Factors.

- The self-care agency power components dimension of the concept of Power Components is related to the concept of Self-Care Agency, such that the person's ability to perform self-care is influenced by the self-care agency power components.
- Self-Care Agency is positively related to Self-Care.
- The physical, chemical, and biologic features dimension of Environmental Features and the socioeconomic-cultural features dimension of Environmental Features are interrelated.
- Health State and Well-Being are associated. The experience of Well-Being may occur for an individual under adverse conditions, including disorders in human structure and function.
- Self-Care is positively related to Health State.
- Self-Care is positively related to Well-Being.
- Nursing Agency is related to the nursing agency power components dimension of Power Components, such that the nurse's ability to perform nursing is influenced by the nursing agency power components.
- The Professional–Technological System of Nursing Practice has a positive effect on Self-Care Agency.
- The Professional–Technological System of Nursing Practice has a positive effect on Self-Care.

OREM'S SELF-CARE FRAMEWORK: APPLICATION TO NURSING PRACTICE

The guidelines for Orem's Self-Care Framework nursing practice are listed in Box 6.1. A diagram of the practice methodology for Orem's Self-Care Framework, which is called the Professional–Technological System of Nursing Practice, is illustrated in Figure 6.1.

A practice tool that includes all aspects of the practice methodology is given in Box 6.2.

A Conceptual–Theoretical–Empirical Structure for Assessment

Fleck's (2012) journal article is an example of the use of Orem's Self-Care Framework to guide assessment of patients. Fleck developed the Nutrition Self-Care Inventory (NSCI) to assess overweight and obese young and middle-age adults' "perceived ability to make decisions regarding their nutrition practices" (p. 31).

The theory is assessment of nutrition practices. The conceptual model concept is Therapeutic Self-Care Demand. The relevant dimension is universal self-care requisites, and the relevant subdimension is "The promotion of human functioning and development within social groups in accord with human potential, known human limitations, and the human desire to be normal"

BOX 6.1 Guidelines for Orem's Self-Care Framework Nursing Practice

The distinctive purpose of Self-Care Framework-based nursing practice is to help individuals and multiperson units who seek and can benefit from nursing because of the presence of existent or predicted health-derived or health-related self-care or dependent-care deficits.

Practice problems of interest are individuals' and multiperson units' self-care deficits and dependent-care deficits. Those problems occur when the health focus is people across the life cycle, people in recovery, people with illnesses of undetermined origin, people with genetic and developmental defects or biologic immaturity, people experiencing cure or regulation of disease, people experiencing stabilization of integrated functioning, people whose quality of life is irreversibly affected, and people who have a terminal illness.

Nursing practice occurs in diverse settings, including people's homes, neighborhoods, group residential facilities, meeting places of various community-based groups, ambulatory clinics, rehabilitation and long-term care facilities, and tertiary medical centers.

An adult requires nursing when he or she does not have the ability to continuously maintain the amount and quality of self-care that is therapeutic in sustaining life and health; in recovering from disease, injury, or disability; or in coping with their effects. A child requires nursing when his or her parent or guardian cannot continuously maintain the amount and quality of care that is therapeutic.

The nursing process for the Self-Care Framework is Orem's Professional-Technological System of Nursing Practice. The components of the process are case management operations, diagnostic operations, prescriptive operations, regulatory operations, and control operations.

Self-Care Framework-based nursing practice contributes to the well-being of nursing participants by regulating self-care agency or dependent-care agency and meeting the therapeutic self-care demand.

Adapted from Fawcett and DeSanto-Madeya (2013), with permission.

(Orem, 2001, p. 225); this subdimension is henceforth referred to as desire for normalcy. Fleck (2012) explained, "Young and middle age adults often desire to lose weight. To be overweight is considered to be in the outside parameters of of normalcy" (p. 26).

The theory concept is Nutrition Decision Making, which represents the conceptual model concept subdimension of desire for normalcy. Nutrition Decision Making is assessed by the NSCI (Fleck, 2012). The results of the NSCI are used by nurses and overweight or obese young and middle-age adults to collaborate in making individualized meal plans.

The conceptual–theoretical–empirical (CTE) structure constructed from the content of Fleck's (2012) article is illustrated in Figure 6.2. The non-relational propositions for each component of the CTE structure are listed in Box 6.3.

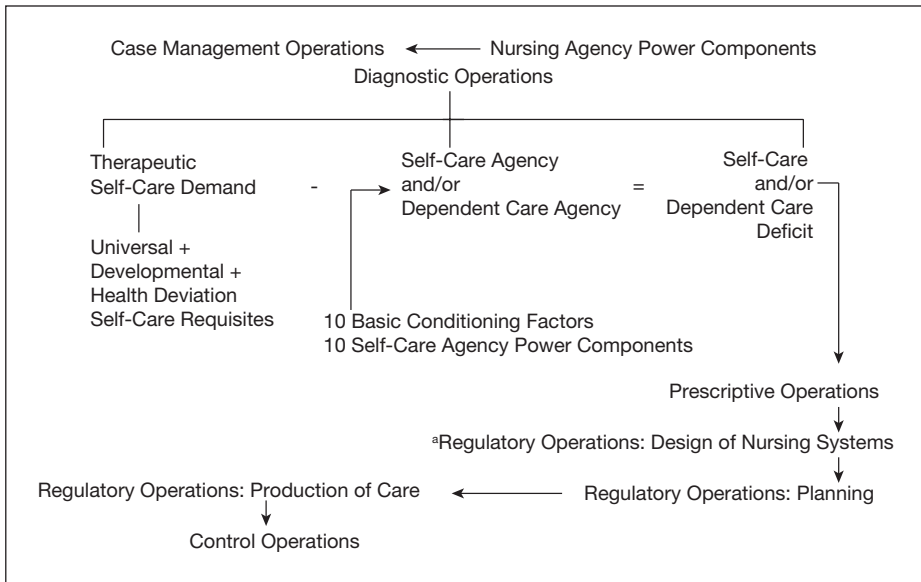


FIGURE 6.1 Orem's practice methodology: Professional–technological system of nursing practice.

^aThree Nursing Systems
Wholly Compensatory
Partly Compensatory
Supportive–Educative

Five Methods of Helping
Acting for or Doing for the Patient
Guiding the Patient
Supporting the Patient
Providing a Developmental Environment
Teaching the Patient

BOX 6.2 The Orem's Self-Care Framework Practice Methodology Tool

DIAGNOSTIC OPERATIONS

Therapeutic Self-Care Demand

The nurse extracts the following information about the patient's therapeutic self-care demand from the electronic health record:

- Universal self-care demands
- Developmental self-care demands
- Health deviation self-care demands

(continued)

BOX 6.2 The Orem's Self-Care Framework Practice Methodology Tool (continued)

Self-Care Agency

Nurse: Please rate each of the activities I will read to you using the rating scale of 1 = I am able to do this by myself, 2 = I am able to do this with help, or 3 = I cannot do this.

ACTIVITY	RATINGS AND COMMENTS
Personal hygiene and grooming (bathing, brushing teeth, combing hair)	1 2 3
Dressing	1 2 3
Eating and drinking fluids	1 2 3
Walking	1 2 3
Climbing stairs	1 2 3
Shopping for groceries	1 2 3
Attending social events in the community	1 2 3
Taking medications	1 2 3

Power Components

Nurse: What do you know about [health condition or medical diagnosis]?

Nurse: Would you like to learn about how to care for yourself to reduce the severity of your symptoms?

Basic Conditioning Factors

The nurse extracts information about basic conditioning factors (age, gender, family system factors, sociocultural factors, health state, health care system factors) from the electronic health record.

Nursing Diagnosis

The nurse and the patient determine that his or her therapeutic self-care demand currently is (greater than/less than/equal to) his or her self-care agency due to...

The patient (agrees/does not agree) with the nurse that he or she is highly motivated to learn what is needed to increase his or her ability to take care of self.

PRESCRIPTIVE OPERATIONS AND REGULATORY OPERATIONS: DESIGN OF NURSING SYSTEMS FOR PERFORMANCE OF REGULATORY OPERATIONS

The nurse and the patient (agree/do not agree) that he or she (lacks/does not lack) knowledge of what to do to "get better." The nurse selects the (wholly compensatory/

(continued)

BOX 6.2 The Orem's Self-Care Framework Practice Methodology Tool (continued)

partly compensatory/supportive–educative) nursing system with (indicate which one or more method[s] of helping) as the means to (increase/maintain current level of) the patient's self-care agency.

REGULATORY OPERATIONS: PLANNING FOR REGULATORY OPERATIONS

The nurse has sufficient nursing agency to implement the planned nursing system and method(s) of helping. (Add any other components of the plan.)

REGULATORY OPERATIONS: PRODUCTION OF REGULATORY CARE

The nurse and the patient carry out the plan of care (without/with) any difficulties or adjustments.

CONTROL OPERATIONS

The nurse and the patient evaluate the effectiveness of the nursing system and method(s) of helping.

Adapted from Fawcett and DeSanto-Madeya (2013).

A CTE Structure for Intervention

An example of Orem's Self-Care Framework–guided nursing practice focused on intervention is found in Green's (2012) journal article. Green explained how school nurses can use Orem's Self-Care Framework to develop and implement interventions for school-age children with special health care needs. According to the Centers for Disease Control and Prevention (as cited in Green, 2012, p. 35):

Children with special care needs are identified as those who “have a parent-reported medical, behavioral, or other health condition that has lasted or is expected to last 12 months or longer and that has resulted in functional limitations and/or elevated use of or need for medical care, mental health or educational services, specialized therapy, or prescription medications beyond what is usual for other children of the same age.”

Green (2012) discussed nursing care for a “middle school student who was born premature at 30 weeks and had been diagnosed with asthma as an infant” (p. 38). She explained that although “the school nurse was able to provide nursing care in the school clinic, . . . she could not ensure that dependent-care would continue at home” (p. 37).

BOX 6.3 An Example of a Conceptual–Theoretical–Empirical Structure for Orem's Self-Care Framework Nursing Practice: Assessment

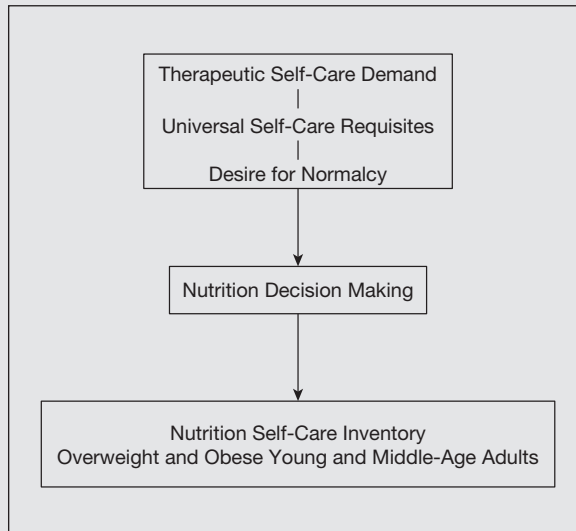


FIGURE 6.2 Conceptual–theoretical–empirical (CTE) structure for Orem's Self-Care Framework nursing practice: Assessment—theory of assessment of nutrition practices.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Therapeutic Self-Care Demand* is defined as the demand on the individual or multiperson unit for continuing effective care of self.
- The relevant dimension of Therapeutic Self-Care Demand is universal self-care requisites.
 - *Universal self-care requisites* is defined as a type of self-care requisite that is common to all people at all stages of life, but adjusted for age, developmental stage, and the environment.
 - The relevant subdimension of universal self-care requisites is desire for normalcy.
 - *Desire for normalcy* is defined as “the human desire to be normal” (Orem, 2001, p. 225).

The *non-relational proposition* for the *T* component of the CTE structure is:

- *Nutrition Decision Making* is defined as perceived confidence in ability to make decisions about nutrition practices (Fleck, 2012).

The *non-relational proposition* for the *E* component of the CTE structure is:

- Nutrition Decision Making is assessed by the Nutrition Self-Care Inventory (NSCI; Fleck, 2012). The NSCI includes 10 items that are rated on a scale of 1 = disagree, 2 = somewhat agree, or 3 = agree.

Source: Fleck (2012).

The theory is the effect of school nursing asthma interventions on asthma self-management. One conceptual model concept is Professional–Technological System of Nursing Practice. The relevant dimension of the concept is regulatory operations, and the relevant subdimension is production of regulatory care, including wholly compensatory, partly compensatory, and supportive–educative nursing systems designed to overcome self-care and dependent-care deficits. The other conceptual model concept is Self-Care. The theory concepts are School Nursing Asthma Interventions and Asthma Self-Management.

School Nursing Asthma Interventions represents the Professional–Technological System of Nursing Practice subdimension of production of regulatory care, and Asthma Self-Management represents Self-Care. School Nursing Asthma Interventions is operationalized by the School Nursing Asthma Interventions protocol. Asthma Self-Management is measured by extent of lack of occurrence of asthma symptoms.

The CTE structure constructed from an interpretation of the content of Green's (2012) article is illustrated in Figure 6.3. The non-relational and relational propositions for each component of the CTE structure are listed in Box 6.4.

OREM'S SELF-CARE FRAMEWORK: APPLICATION TO QUALITY IMPROVEMENT PROJECTS

The guidelines for Orem's Self-Care Framework quality improvement (QI) projects are listed in Box 6.5.

A CTE Structure for a QI Project

Ryan, Aloe, and Mason-Johnson's (2009) journal article contains an example of an Orem's Self-Care Framework–guided QI project. The purpose of their project was to develop and implement a multidisciplinary group discharge teaching plan to increase patients' heart failure self-care management. Ryan et al. noted that "Group teaching is one of many patient education methods that may promote positive patient outcomes and efficient, cost-effective care" (p. 218).

The theory is the effect of group discharge teaching on heart failure self-care management. One conceptual model concept is Professional–Technological System of Nursing Practice. The relevant dimension of the concept is regulatory operations, and the relevant subdimension is production of regulatory care with emphasis on the supportive–educative nursing system directed to enhancing patients' self-care to meet their heart failure–related health deviation self-care requisites (Ryan et al., 2009). The other conceptual model concept is Self-Care.

The theory concepts are Group Discharge Teaching Plan and Heart Failure Self-Care Management. Group Discharge Teaching Plan represents the Professional–Technological System of Nursing Practice subdimension of production of regulatory care, and Heart Failure Self-Care Management represents

BOX 6.4 An Example of a Conceptual–Theoretical–Empirical Structure for Orem’s Self-Care Framework Nursing Practice: Intervention

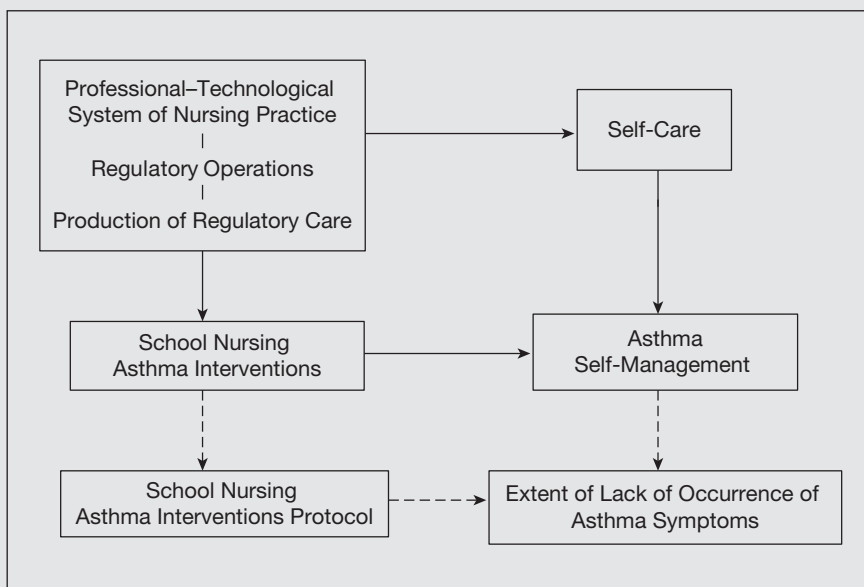


FIGURE 6.3 Conceptual–theoretical–empirical (CTE) structure for Orem’s Self-Care Framework nursing practice: Intervention—theory of the effect of school nursing asthma interventions on asthma self-management.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Professional–Technological System of Nursing Practice* is defined as the nursing process.
- The relevant dimension of *Professional–Technological System of Nursing Practice* is regulatory operations.
 - *Regulatory operations* is defined as design and implementation of a nursing system and method(s) of helping.
 - The relevant subdimension of regulatory operations is production of regulatory care.
 - *Production of regulatory care* is defined as implementation of the selected nursing system and method(s) of helping.
- *Self-Care* is defined as actions taken by individuals to regulate their function and development.

The *non-relational propositions* for the *T* component of the CTE structure are:

- *School Nursing Asthma Interventions* is defined as nursing interventions that enhance self-management of asthma symptoms.

(continued)

BOX 6.4 An Example of a Conceptual–Theoretical– Empirical Structure for Orem's Self-Care Framework Nursing Practice: Intervention (continued)

- *Asthma Self-Management* is defined as control of asthma symptoms.

The *non-relational propositions* for the *E component* of the conceptual–theoretical–empirical (CTE) structure are:

- School Nursing Asthma Interventions is operationalized by the School Nursing Asthma Interventions protocol, which includes “assisting [the student] and his [or her] family with coping strategies, and ongoing assistance through case management that involved both formal and informal networking among the family’s network of community resources and support. The school nurse assumed the informal role of case manager to establish ongoing communication among a variety of providers and access to a patchwork quilt of services” (Green, 2012, p. 37).
- Asthma Self-Management is measured by the extent of the lack of occurrence of asthma symptoms (Green, 2012).

The *relational propositions* for the *C and T components* of the CTE structure are:

- The Professional–Technological System of Nursing Practice has a positive effect on Self-Care.
- Therefore, School Nursing Asthma Interventions have a positive effect on Asthma Self-Management.

The *relational proposition* for the *E component* of the CTE structure is:

- Implementation of the School Nursing Asthma Interventions protocol has a negative effect on occurrence of asthma symptoms, such that implementation of the protocol is associated with a reduction in the occurrence of asthma symptoms.

Source: Green (2012).

Self-Care. Group Discharge Teaching Plan is operationalized by the Group Discharge Teaching Plan protocol and the “Managing Your Congestive Heart Failure” booklet. Ryan et al. (2009) stated that they used the evidence-based practice approach of the PICOT (P = Patient Population, I = Intervention, C = Comparison, O = Outcome, T = Time) clinical question (Melnik & Fineout-Overholt, 2005), which is a QI methodological theory (see Appendix A), to guide development of the protocol.

Heart Failure Self-Care Management is measured by an investigator-developed Evaluation Form (Ryan, 2009), as well as by patient readmission rates obtained from a hospital database. The differences in scores for patients who received group discharge education and those who received usual care are analyzed using descriptive statistics (numbers, percents, means; see Appendix B).

BOX 6.5 Guidelines for Orem's Self-Care Framework Quality Improvement Projects

The purpose of quality improvement (QI) projects is to test the effectiveness of nurses' use of Orem's practice methodology (Professional–Technological System of Nursing Practice) on nurses' nursing agency and/or patients' self-care agency or dependent-care agency and self-care or dependent care.

The phenomenon of interest for a QI project is the extent of nurses' use of Professional–Technological System of Nursing Practice on nurses' nursing agency and/or patients' self-care agency or dependent-care agency and self-care or dependent care.

Data for QI projects are to be collected from nurses and/or patients in various settings, such as patients' homes, nurses' private offices, ambulatory clinics, hospitals, and communities.

Any methodological theory of change or QI may be used to guide the design of the QI project and the times for data collection. Checklists, rating scales, and responses to open-ended questions may be used to determine the extent to which nurses actually implement one or more components of the Professional–Technological System of Nursing Practice. Descriptive statistics may be used to analyze data obtained from checklists or rating scales, and content analysis may be used to identify categories or themes found in responses to open-ended questions.

The results of Orem's Self-Care Framework–based QI projects enhance understanding of how using the Professional–Technological System of Nursing Practice influences nursing agency and/or self-care agency or dependent-care agency and self-care or dependent care.

The CTE structure constructed from an interpretation of the content of Ryan et al.'s (2009) article is illustrated in Figure 6.4. The non-relational and relational propositions for each component of the CTE structure are listed in Box 6.6.

OREM'S SELF-CARE FRAMEWORK: APPLICATION TO NURSING RESEARCH

The guidelines for Orem's Self-Care Framework nursing research are listed in Box 6.7.

A CTE Structure for a Systematic Literature Review

The content of Kelo, Martikaninen, and Eriksson's (2011) journal article is an example of a report of a systematic literature review guided by Orem's Self-Care Framework. The purpose of their review of literature "was to synthesize findings from empirical studies on self-care in school-age children with type 1 diabetes, thus giving insight into opportunities to develop empowering patient education" (p. 2097).

BOX 6.6 An Example of Orem's Self-Care Framework Quality Improvement Projects

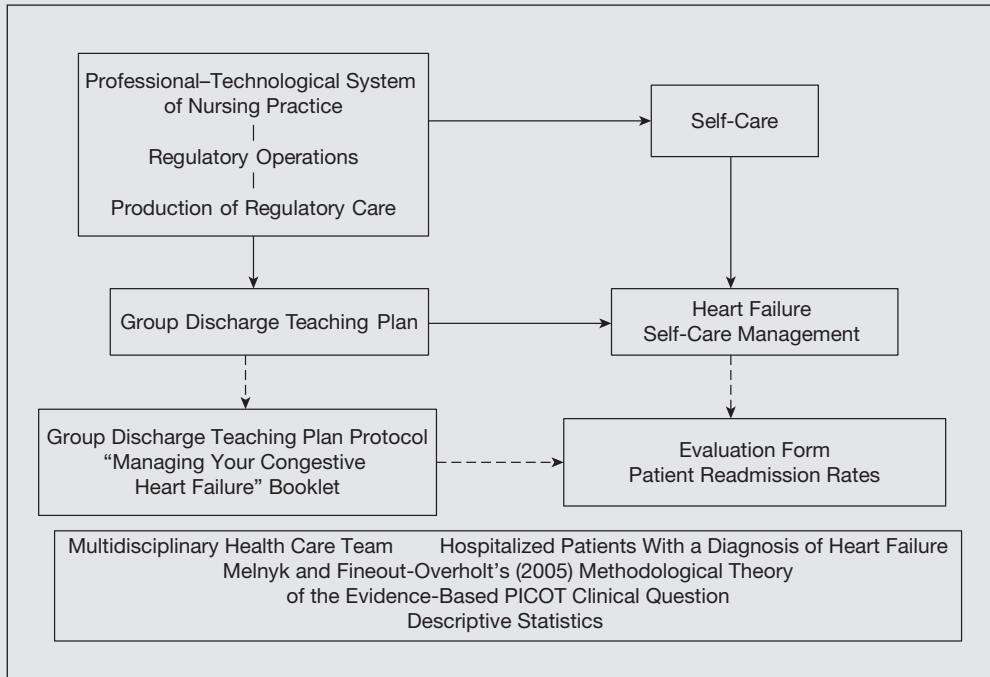


FIGURE 6.4 Conceptual-theoretical-empirical (CTE) structure for Orem's Self-Care Framework quality improvement (QI) project—theory of effects of group discharge teaching on heart failure self-care management.

PICOT, P = patient population, I = intervention, C = comparison, O = outcome, T = time.

The *non-relational propositions* for the *C* component of the conceptual-theoretical-empirical (CTE) structure are:

- *Professional-Technological System of Nursing Practice* is defined as the nursing process.
- The relevant dimension of Professional-Technological System of Nursing Practice is regulatory operations.
 - o *Regulatory operations* is defined as design and implementation of a nursing system and method(s) of helping.
 - o The relevant subdimension of regulatory operations is production of regulatory care.
 - *Production of regulatory care* is defined as implementation of the selected nursing system and method(s) of helping.
- *Self-Care* is defined as actions taken by individuals to regulate their function and development.

(continued)

BOX 6.6 An Example of Orem's Self-Care Framework Quality Improvement Projects (continued)

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Group Discharge Teaching Plan* is defined as an effective method of patient education (Ryan et al., 2009).
- *Heart Failure Self-Care Management* is defined as "cognitive decision making based on signs and symptoms (i.e., actions taken when signs/symptoms worsen or when new symptoms emerge)" (Ryan et al., 2009, p. 218).

The *non-relational propositions* for the *E* component of the CTE structure are:

- Group Discharge Teaching Plan is operationalized by the Group Discharge Teaching Plan protocol. Ryan et al. (2009) explained, "The group discharge education intervention included a 60-minute, group teaching session presented initially by the nurse manager and then by a staff nurse with participation from dietary and home care personnel. The main tenet of this intervention is to link the disease, its symptoms, and the selection of appropriate treatment to skill building in critical target patient behaviors. To accomplish this, the group facilitator discussed [heart failure] HF-specific information on the causes of HF, rationale for pharmaceutical therapies, causes of intravascular volume overload in HF, diuretic therapy, dietary sodium restrictions, common HF symptoms, and instructions on when to call the physician if symptoms worsened. The rationale for self-management behaviors was discussed. Patients viewed a PowerPoint presentation, 'What You Should Know About Heart Failure.' Questions and concerns stemming from patients' experiences with HF and reading previously distributed educational material were encouraged and addressed by the group leader and participating disciplines" (p. 219). In addition, the patients received the "Managing Your Congestive Heart Failure" booklet. Development of the protocol was guided by the quality improvement methodological theory of the PICOT (P = Patient Population, I = Intervention, C = Comparison, O = Outcome, T = Time) clinical question (Melnik & Fineout-Overholt, 2004). The clinical question for the quality improvement project is: "In adults with HF [P], does comprehensive group discharge education [I] compared with usual care [C] decrease the readmission rate [O, T]?" (Ryan et al., 2009, p. 219).
- Heart Failure Self-Care Management is measured by an investigator-developed Evaluation Form, which is made up of four items that are rated on a 5-point scale of 1 = strongly disagree to 5 = strongly agree, and that "was constructed to evaluate whether patients [thought] they had acquired information about HF and its management and if they liked learning in a group session" (Ryan et al., 2009, p. 218).
- Heart Failure Self-Care Management also is measured by patient readmission rates obtained from a hospital database (Ryan et al., 2009).

The *relational propositions* for the *C* and *T* components of the CTE structure are:

- The Professional–Technological System of Nursing Practice has a positive effect on Self-Care.

(continued)

BOX 6.6 An Example of Orem's Self-Care Framework Quality Improvement Projects (continued)

- Therefore, Group Discharge Teaching Plan has a positive effect on Heart Failure Self-Care Management.

The *relational proposition* for the *E component* of the CTE structure is:

- Implementation of the Group Discharge Teaching Plan protocol has a positive effect on Evaluation Form scores and a negative effect on patient readmission rates, such that implementation of the protocol is associated with an increase in Evaluation Form scores and a decrease in patient readmission rates.

Source: Ryan, Aloe, and Mason-Johnson (2009).

Kelo et al. (2011) used Whittemore and Knafl's (2005) literature review approach (see Appendix A). They searched several electronic databases (Cumulative Index to Nursing and Allied Health Literature [CINAHL], MEDLINE, PubMed, Cochrane, PsycINFO, and PsycARTICLES) using the search terms "Self-Care" AND "Self-Manage" with "Child" AND "Diabetes" OR "Diabetes Mellitus," as well as combining "Diabetes" WITH "Child" OR "Parent" AND "Experience," "Self-Report" OR "Interview." They also did manual searches of journal article reference lists. Explaining the inclusion and exclusion criteria for literature, Kelo et al. (2011) stated:

As the treatment of diabetes has changed over the years, the search was limited to the period 01/1998–08/2010. In addition, only English-language and original research articles were accepted. An article was included if it described the self-care of school-age children with type 1 diabetes, if the mean age of the children was between 6 and 12 years and if it described children's or parents' opinions on self-care. Because technical treatment equipment was outside the scope of this review, articles focusing on evaluating the effect of a technical treatment method on self-care were excluded. (p. 2098)

The search yielded 653 articles, of which 22 were retained for the review. Twelve of the 22 articles were reports of quantitative studies, nine were reports of qualitative studies, and one was a report of a mixed-methods study.

The theory of the diabetes self-care learning process was generated from the results of the literature review. The conceptual model concept is Self-Care, which guided the search of the literature. The theory concept is Diabetes Self-Care Learning Process, which has three dimensions—related factors, content, and goals. The related factors dimension has three subdimensions—child characteristics, illness and care, and support. The content dimension has two

BOX 6.7 Guidelines for Orem's Self-Care Framework Research

The purpose of Self-Care Framework–based nursing research is to develop knowledge for the practical sciences of nursing.

Specific variables that make up nursing knowledge from the perspective of the Self-Care Framework are in the categories of the self-care requisites making up the therapeutic self-care demand, basic conditioning factors, power components, self-care agency, dependent-care agency, self-care deficits, dependent-care deficits, self-care practices, dependent-care practices, health state, health results sought, nursing requirements, nursing situations, nursing systems, nursing technologies, methods of helping, and outcomes of production of nursing systems.

The precise problems to be studied are those that reflect actual or predictable self-care deficits or dependent-care deficits.

Study participants are the individuals and multiperson units who are considered legitimate patients of nurses, that is, people with deficit relationships between their current or projected capability for providing self-care or dependent-care and the qualitative and quantitative demand for care due to the health state or health care needs of those requiring care.

Data may be collected from individuals and multiperson units in the person's home; in hospitals, clinics, and resident-care facilities; and in various other settings in which nursing occurs, using one or more Self-Care Framework–based research instruments. Descriptive, case study, correlational, and experimental research designs associated with the empiricist research paradigm are consistent with Orem's Self-Care Framework. Furthermore, ethnographic, grounded theory, and phenomenological research designs associated with the interpretive research paradigm are consistent with the Self-Care Framework, as are mixed-method designs that integrate the empiricist and interpretive paradigms. In contrast, research designs associated with the critical theory research paradigm are not consistent with Orem's Self-Care Framework, due to the focus of that paradigm on emancipation of the study participants from beliefs and values that may be oppressive, as well as to the fact that Orem did not address such major issues in the critical theory paradigm as having power over others and exercising control and domination of others.

Data analysis techniques associated with qualitative and/or quantitative data are appropriate.

Self-Care Framework–based research findings enhance understanding of patient and nurse variables that affect the performance of continuing therapeutic self-care and dependent-care.

Adapted from Fawcett and DeSanto-Madeya (2013), with permission.

subdimensions—knowledge and skills. The goals dimension has three subdimensions—normality, being able to cope, and independence. The concept of Self-Care Learning Process and its dimensions and subdimensions were generated from the integrative review of the 22 research reports.

The CTE structure constructed from the content of Kelo et al.'s (2011) article is illustrated in Figure 6.5. The non-relational propositions for each component of the CTE structure are listed in Box 6.8. The two relational propositions for the

BOX 6.8 An Example of a Conceptual–Theoretical–Empirical Structure for Orem's Self-Care Framework Literature Review

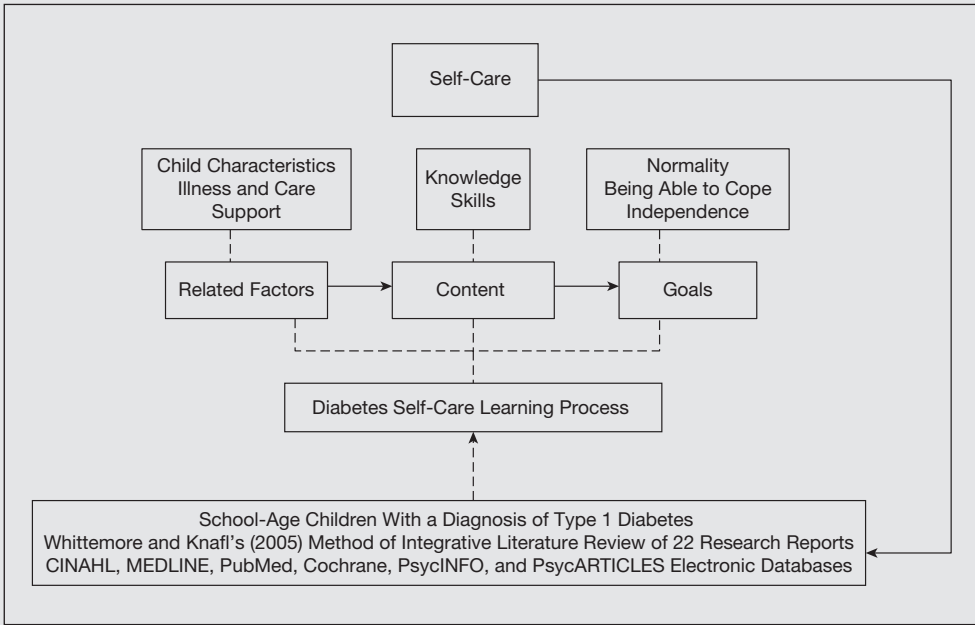


FIGURE 6.5 Conceptual–theoretical–empirical (CTE) structure for Orem's Self-Care Framework literature review—theory of the diabetes self-care learning process.

The *non-relational proposition* for the *C* component of the conceptual–theoretical–empirical (CTE) structure is:

- *Self-Care* is defined as actions taken by individuals to regulate their function and development.

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Diabetes Self-Care Learning Process* is defined as learning "health-related activities required to live an everyday life" by school-age children with a diagnosis of type 1 diabetes (Kelo et al., 2011, p. 2097).
- The three dimensions of Diabetes Self-Care Learning Process are related factors, content, and goals.
 - *Related factors* is defined as variables related to self-care.
 - The three subdimensions of related factors are child characteristics, illness and care, and support.
 - *Child characteristics* is defined as children's attitude, motivation, gender, and age (Kelo et al., 2011).

(continued)

BOX 6.8 An Example of a Conceptual–Theoretical–Empirical Structure for Orem's Self-Care Framework Literature Review (continued)

- *Illness and care* is defined as children's emotions, duration of diabetes, and control of diabetes (Kelo et al., 2011).
- *Support* is defined as provision of assistance from parents, peers, health care team members, and the school environment (Kelo et al., 2011).
- *Content* is defined as information about self-care.
- The two subdimensions of content are knowledge and skills.
 - *Knowledge* is defined as children's "understanding [of] the principles of treatment, such as the relationship between insulin, food and blood sugar; diet; physical symptoms and the need for appropriate treatment;...and the benefits of good diabetes control and risks of poor control...gained...from their experience of living with diabetes" (Kelo et al., 2011, p. 2102).
 - *Skills* is defined as children's learning psychomotor skills necessary for "blood glucose monitoring, insulin and diet management and hypoglycaemia treatment" (Kelo et al., 2011, p. 2102).
- *Goals* is defined as desired achievement of objectives.
- The three subdimensions of goals are normality, being able to cope, and independence.
 - *Normality* is defined as children's desire to "feel normal and accepted...to be seen and treated in the same way as their friends" (Kelo et al., 2011, p. 2102).
 - *Being able to cope* is defined as children's desire to "cope with the illness and thus live a normal life...[and their adjustment] to the diabetic lifestyle and [accept] its demands eventually" (Kelo et al., 2011, p. 2102).
 - *Independence* is defined as children's desire "to be independent in their choices and decisions concerning diabetes management" (Kelo et al., 2011, p. 2102).

The *non-relational proposition* for the *E component* of the CTE structure is:

- The concept of Diabetes Self-Care Learning Process and its dimensions and subdimensions were extracted from an integrative literature review of 22 research reports.

The *relational propositions* for the *T component* of the CTE structure are:

- Related factors is associated with content.
- Content is associated with goals.

Source: Kelo, Martikaninen, and Eriksson (2011).

T component that were generated from the results of the literature review are also included in Box 6.8; these propositions state the relations among the three dimensions of Diabetes Self-Care Learning Process.

A CTE Structure for Instrument Development

The journal article by Srikan and Phillips (2014) presents an example of a report of development of an instrument derived from Orem's Self-Care Framework.

They explained that they developed the Dietary Salt Reduction Self-Care Behavior (DSR-SCB) Scale “to acquire a comprehensive understanding of hypertensive older adults’ perceptions toward their behavior in managing salt reduction in daily life” (p. 235).

The theory is dietary salt reduction behavior. The conceptual model concept is Self-Care, which is represented by the theory concept of Dietary Salt Reduction Behavior. The DSR-SCB Scale measures Dietary Salt Reduction Behavior. Srikan and Phillips (2014) reported that estimates of the psychometric properties of the DSR-SCB Scale are adequate. They estimated internal consistency reliability with Cronbach’s alpha. Construct validity was estimated with principal components factor analysis, which yielded one factor, indicating that the theory concept of Dietary Salt Reduction Behavior is unidimensional. Validity also was estimated with Rasch analysis (see Appendix B).

The CTE structure constructed from the content of Srikan and Phillips’s (2014) article is illustrated in Figure 6.6. The non-relational propositions for each component of the CTE structure are listed in Box 6.9.

A CTE Structure for Descriptive Qualitative Research

A journal article by Fex, Flensner, Ek, and Söderhamn (2011) is an example of a report of descriptive qualitative research guided by Orem’s Self-Care Framework. The purpose of Fex et al.’s study was to “gain a deeper understanding of the meaning of living with an adult family member using advanced medical technology at home” (p. 338). They used a hermeneutic research design developed by Fleming, Gaidys, and Robb (2003; see Appendix A).

The theory of the meaning of living with an adult family member using advanced medical technology at home was generated from the study data. The conceptual model concept is Dependent-Care. The theory concept is Meaning of Living With an Adult Family Member Using Advanced Medical Technology at Home. The theory concept has 10 dimensions—focusing on the patient, supporting practically and psychologically and being constantly there, favoring and learning to deal with technology, adjusting home and means of transport, being autonomous and changing roles, regretting life as having changed and worrying about the future, seeking explanation, getting used to and making the best of the situation, needing support from health care professionals, and needing support from significant others.

Dependent-Care guided the selection of research methods and overall interpretation of the data. The theory concept and its dimensions were discovered in the responses of 11 family member caregivers of persons requiring home-based advanced medical technology to an open-ended interview question and follow-up questions to clarify responses to the open-ended question (Fex et al.,

BOX 6.9 An Example of a Conceptual–Theoretical–Empirical Structure for Orem’s Self-Care Framework Instrument Development

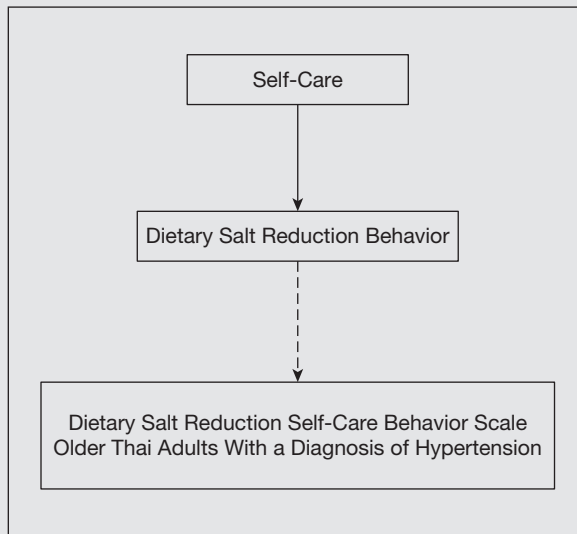


FIGURE 6.6 Conceptual–theoretical–empirical (CTE) structure for Orem’s Self-Care Framework instrument development research—theory of dietary salt reduction behavior.

The *non-relational proposition* for the *C component* of the conceptual–theoretical–empirical (CTE) structure is:

- *Self-Care* is defined as actions taken by individuals to regulate their function and development.

The *non-relational proposition* for the *T component* of the CTE structure is:

- *Dietary Salt Reduction Behavior* is defined as “hypertensive older adults’ perceptions toward their behavior in managing salt reduction in daily life” (Srikan & Phillips, 2014, p. 235).

The *non-relational proposition* for the *E component* of the CTE structure is:

- Dietary Salt Reduction Behavior is measured by the Dietary Salt Reduction Self-Care Behavior (DSR-SCB) Scale. Srikan and Phillips (2014) explained that they generated an initial pool of 58 items—which was eventually reduced to nine items—for the DSR-SCB Scale from a review of “research related to salt reduction behavior, hypertension, and health behavior in a variety of topics, including dietary sources of salt, effects of excessive salt consumption on blood pressure, daily salt recommendations, checking food labels for sodium, initiating strategies to reduce daily salt consumption, and other factors influencing salt consumption” (p. 235). The items are rated on a 5-point scale of 1 = never, 2 = seldom, 3 = sometimes, 4 = often, and 5 = always. An English-language version and a Thai-language version of the DSR-SCB Scale are available.

Source: Srikan and Phillips (2014).

2011). The caregivers' responses to the interview question are analyzed using a hermeneutic method of data analysis (see Appendix B).

The CTE structure constructed from the content of Fex et al.'s (2011) research report is illustrated in Figure 6.7. The non-relational propositions for each component of the CTE structure are listed in Box 6.10.

A CTE Structure for Correlational Research

White's (2013) journal article is an example of Orem's Self-Care Framework-guided correlational research (see Appendix A). The purpose of her study was to test an expansion of Orem's framework by adding spiritual self-care as a mediator of the relation between self-care and well-being.

The theory is the relation of heart failure self-care practices, spiritual self-care practices, and quality of life. White (2013) tested the theory with a sample of "142 African American patients diagnosed with heart failure who were being treated in two outpatient clinics associated with a large medical center in a major urban area" (p. 26).

The conceptual model concepts are Self-Care, Spiritual Self-Care, and Well-Being. White (2013) explained that she added Spiritual Self-Care Practices to Orem's Self-Care Framework as a conceptual model concept that is distinct from Self-Care.

The theory concepts are Heart Failure Self-Care Practices, Spiritual Self-Care Practices, and Quality of Life. Heart Failure Self-Care Practices represents Self-Care, Spiritual Self-Care Practices represents Spiritual Care, and Quality of Life represents Well-Being. Heart Failure Self-Care Practices is measured by the Heart Failure Self-Care Behavior Scale (HFSCBS; Artinian, Magnan, Sloan, & Lange, 2002). Spiritual Self-Care Practices is measured by the Spiritual Self-Care Practices Scale (SSCPS; White, 2010). Quality of Life is measured by the World Health Organization—Quality of Life-Brief (WHOQOL-BREF; World Health Organization, 1996).

The CTE structure constructed from the content of White's (2013) research report is illustrated in Figure 6.8, as is the mediation method of correlational data analysis (Baron & Kenny, 1986; Kenny, 2012/2016; see Appendix B). The non-relational and relational propositions for each component of the CTE structure are listed in Box 6.11.

A CTE Structure for Experimental Research

Nazik and Eryilmaz's (2013) journal article is an example of a report of experimental research guided by Orem's Self-Care Framework. The purpose of their study was to examine the effects of Orem's Self-Care Framework-based home care on problems and complications experienced by women following birth of their first child and on the women's care of themselves.

BOX 6.10 An Example of a Conceptual–Theoretical–Empirical Structure for Orem's Self-Care Framework Descriptive Qualitative Research

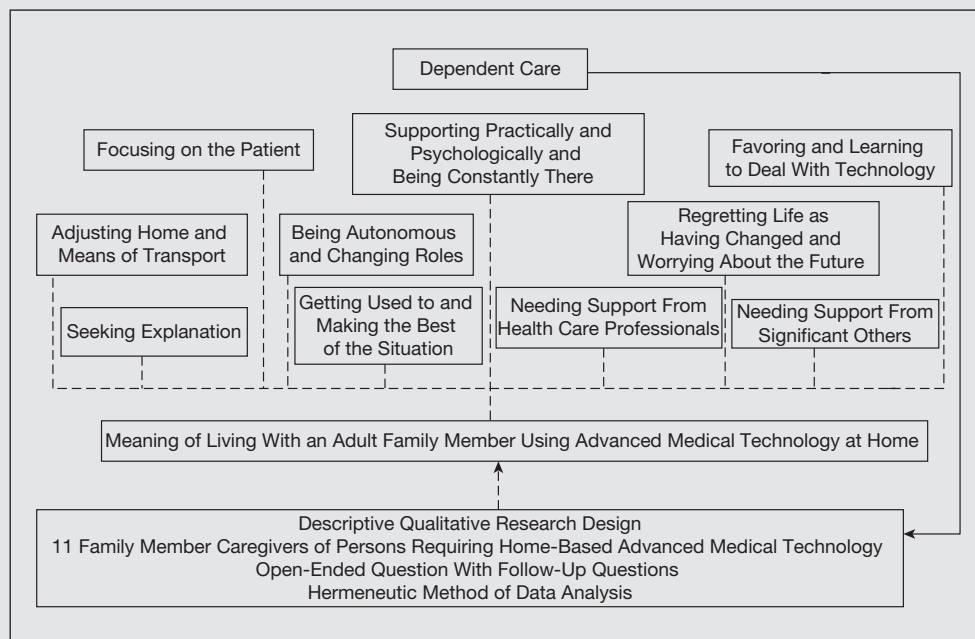


FIGURE 6.7 Conceptual–theoretical–empirical (CTE) structure for Orem's Self-Care Framework descriptive qualitative research—theory of the meaning of living with an adult family member using advanced medical technology at home.

The *non-relational proposition* for the *C* component of the conceptual–theoretical–empirical (CTE) structure is:

- *Dependent-Care* is defined as actions taken by adults for dependent family members or friends who cannot perform adequate self-care.

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Meaning of Living With an Adult Family Member Using Advanced Medical Technology at Home* is defined as “being closely connected to, but on the other hand also being separated from, him or her. It means sorrow, but there is also reconciliation. Further, dependence on others is shown in the need for support from healthcare professionals and significant others” (Fex et al., 2011, p. 346).
- *Meaning of Living With an Adult Family Member Using Advanced Medical Technology at Home* has 10 dimensions—focusing on the patient, supporting practically and psychologically and being constantly there, favoring and learning to deal with technology, adjusting home and means of transport, being autonomous and changing roles, regretting life as having changed and worrying about the future,

(continued)

BOX 6.10 An Example of a Conceptual–Theoretical–Empirical Structure for Orem's Self-Care Framework Descriptive Qualitative Research (continued)

seeking explanation, getting used to and making the best of the situation, needing support from health care professionals, and needing support from significant others.

- o *Focusing on the patient* is defined as focusing “on the patient’s needs, even when the patient was away” (Fex et al., 2011, p. 340).
- o *Supporting practically and psychologically and being constantly there* is defined as “bringing various things when the patient was in treatment” (practical support) and “being someone who listens and is engaged, and a source of security” (psychological support and being constantly there) (Fex et al., 2011, p. 342).
- o *Favoring and learning to deal with technology* is defined as supporting the person’s decision to use health-related technology at home and learning how to manage the technology, frequently from health care professionals, as well as learning to recognize signs and symptoms of illness (Fex et al., 2011).
- o *Adjusting home and means of transport* is defined as adapting the home and car or van to accommodate the demands of the technology (Fex et al., 2011).
- o *Being autonomous and changing roles* is defined as “switching the focus from the patients’ needs to the participants’ [needs, while] sometimes disregarding interests was a learning process of letting go...[and taking] responsibility for more demanding domestic duties while the patients performed the less strenuous ones, like cooking” (Fex et al., 2011, p. 343).
- o *Regretting life as having changed and worrying about the future* is defined as “sorrow to realize that earlier hopes for their old age, like frequent trips to distant countries, were unattainable...[and worrying] about what might happen the day their strength lessened: where would they live, and how would they manage daily life activities” (Fex et al., 2011, p. 343).
- o *Seeking explanation* is defined as finding “explanations for the disease and the need for technology” (Fex et al., 2011, p. 343).
- o *Getting used to and making the best of the situation* is defined as “a learning process to get used to the patient’s impaired strength and daily life with technology...[and striving to not] let technology restrict their activities and to have an eventful life” (Fex et al., 2011, p. 343).
- o *Needing support from health care professionals* is defined as receiving support “from healthcare professionals by telephone whenever a question arose [which] was considered vital. Just knowing that expert advice was always available meant security, allowing the participants to become confident in solving problems themselves” (Fex et al., 2011, p. 343).
- o *Needing support from significant others* is defined as having “a social network of family and friends to confide in, and who understood and accepted the situation concerning the technology” (Fex et al., 2011, p. 343).

The *non-relational proposition* for the *E* component of the CTE structure is:

- Meaning of Living With an Adult Family Member Using Advanced Medical Technology at Home and its dimensions were discovered in responses of 11 family member caregivers to an open-ended question—“What [is] the meaning of living with someone who is using advanced medical technology at home?” (Fex et al., 2011, p. 339)—and follow up elucidating questions.

Source: Fex, Flensner, Ek, and Söderhamn (2011).

BOX 6.11 An Example of a Conceptual–Theoretical–Empirical Structure for Orem's Self-Care Framework Correlational Research

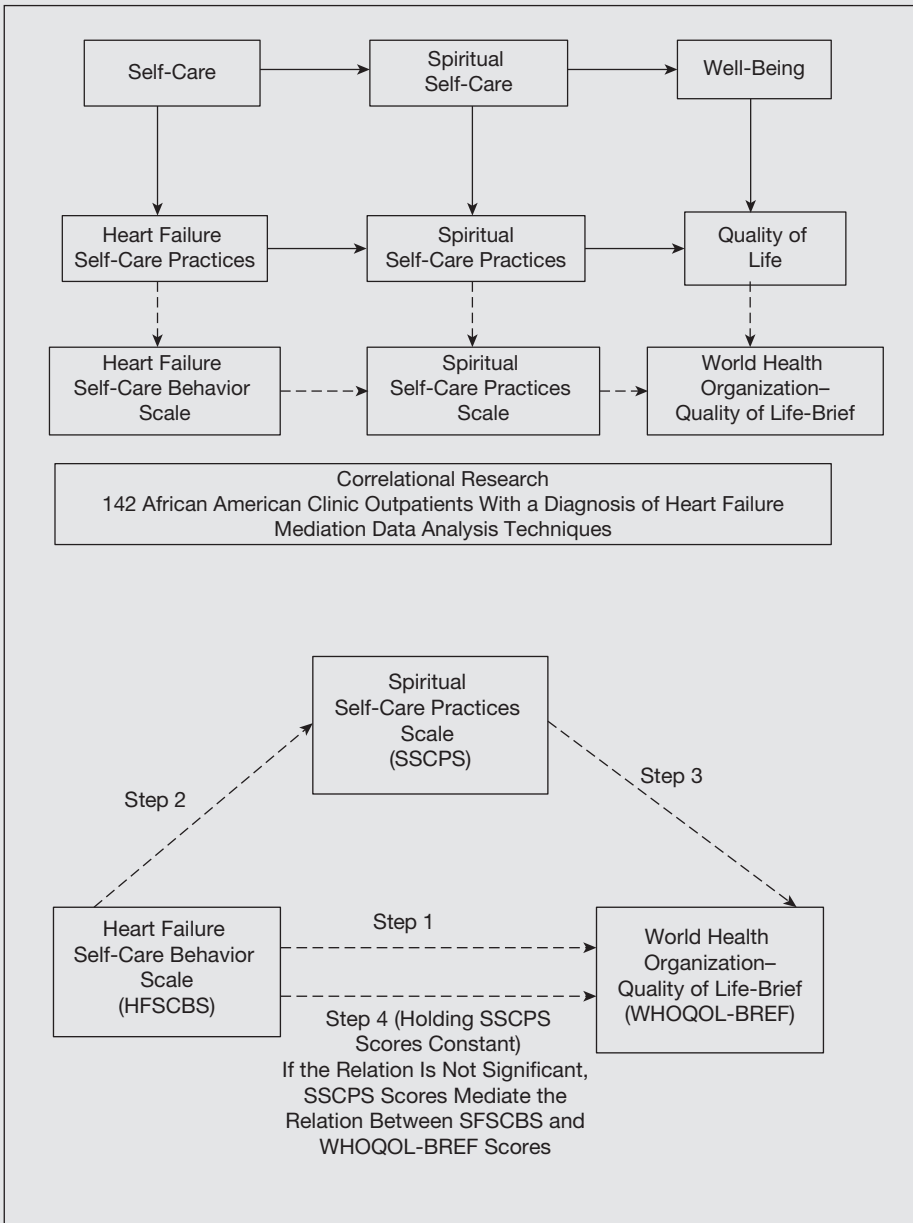


FIGURE 6.8 Conceptual–theoretical–empirical (CTE) structure for Orem's Self-Care Framework correlational research—theory of the relations of heart failure self-care practice, spiritual self-care practices, and quality of life.

(continued)

BOX 6.11 An Example of a Conceptual–Theoretical– Empirical Structure for Orem's Self-Care Framework Correlational Research (continued)

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Self-Care* is defined as actions taken by individuals to regulate their function and development.
- *Spiritual Self-Care* “is defined as the set of spiritually-based practices in which people engage to promote continued personal development and well-being in times of health and illness” (White, 2013, p. 24).
- *Well-Being* is defined as the individual's perception of the condition of his or her existence, which may be characterized as feeling content, pleasure, happiness, fulfilling one's self-ideal, and having positive spiritual experiences.

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Heart Failure Self-Care Practices* is defined as focusing primarily on health deviation self-care requisites, specifically “those activities that persons engage [in] to manage ongoing limitations in structural or functional integrity” (Freitas & Mendes, as cited in White, 2013, p. 25). “Health care practitioners (HCPs) routinely advise patients diagnosed with [heart failure] HF about obtaining daily weights, monitoring swelling, taking medications, eating a low-sodium diet, obtaining routine vaccinations (e.g., yearly flu vaccine), exercising daily, and seeing their HCP regularly” (White, 2013, pp. 25–26).
- *Spiritual Self-Care Practices* is defined as focusing on developmental self-care requisites “based on an individual's mind/spirit/body connection, upbringing, moral and religious background, and life experiences that originate from faith, feelings, and emotions. Examples of spiritual self-care can include building social networks or volunteering... listening to inspirational music... meditation... and developing a sense of inner peace and quiet... Other examples of spiritual self-care include practicing yoga or Tai Chi, attending religious services, reading sacred or inspirational texts, prayer or [meditation], hiking, walking or otherwise enjoying nature, and developing or mending personal relationships” (White, 2013, p. 26).
- *Quality of Life* is defined as “an individually defined and perceived state of well-being... [individuals'] perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards, and concerns” (World Health Organization, as cited in White, 2013, p. 25) [that includes] physical, emotional, and social effects on the individual's perception of daily life” (White, 2013, p. 25).

The *non-relational propositions* for the *E* component of the CTE structure are:

- Heart Failure Self-Care Practices is measured by the Heart Failure Self-Care Behavior Scale (HFSCBS; Artinian, Magnan, Sloan, & Lange, 2002). The HFSCBS contains 29 heart failure behaviors that are rated on a 6-point scale of 0 = none of the time to 5 = all of the time.

(continued)

BOX 6.11 An Example of a Conceptual–Theoretical– Empirical Structure for Orem's Self-Care Framework Correlational Research (continued)

- Spiritual Self-Care Practices is measured by the Spiritual Self-Care Practices Scale (SSCPS; White, 2010). The SSCPS includes 36 spiritual self-care actions that are rated on a 4-point scale of 1 = not a spiritual practice to 4 = very much a spiritual practice.
- Quality of Life is measured by the World Health Organization—Quality of Life-Brief (WHOQOL-BREF; World Health Organization, 1996). The WHOQOL-BREF contains 26 questions about physical capacity, psychological state, social relationships, and the environment that are rated on a 5-point scale of 1 = not at all to 5 = extremely.

The *relational propositions* for the *C* and *T* components of the CTE structure are:

- Self-Care is positively related to Well-Being.
- Spiritual Self-Care mediates the relation between Self-Care and Well-Being (White, 2013).
- Therefore, Spiritual Care Practices mediates the relation between Heart Failure Self-Care Practices and Quality of Life, such that Heart Failure Self-Care Practices is positively related to Spiritual Self-Care, which is positively related to Quality of Life.

The *relational proposition* for the *E* component of the CTE structure is:

- Scores on the SSCPS mediate the relation between scores on the HFSCBS and the WHOQOL-BREF, such that scores on the HFSCBS are related to the scores on the SSCPS, and scores on the SSCPS are related to the scores on the WHOQOL-BREF.

Source: White (2013).

The theory is the effects of home care on postpartum problems and complications and on care of self. Nazik and Eryilmaz (2013) used a quasi-experimental one group pretest–posttest research design (see Appendix A) to test the theory with 63 randomly selected primiparous women residing in Turkey. Each woman had a normal vaginal delivery of one infant and was discharged from the hospital 8 to 12 hours following delivery of the infant.

One conceptual model concept is Professional–Technological System of Nursing Practice. The relevant dimension of the concept is regulatory operations, and the relevant subdimension is production of regulatory care, focusing on the supportive–educative nursing system. The other conceptual model concepts are Self-Care Agency and Self-Care. The theory concepts are Home Care

Visits, Care of Self, and Postpartum Problems and Complications. The production of regulatory care subdimension of the Professional–Technological System of Nursing Practice is represented by Home Care Visits. Self-Care Agency is represented by Care of Self, and Self-Care is represented by Postpartum Problems and Complications.

Home Care Visits is operationalized by the Home Care Visits protocol. Care of Self is measured by the Self-Care Agency Scale (Nahcivan, 2004). Problems and Complications are measured by the investigator-developed Maternity Follow-Up Form (Nazik & Eryilmaz, 2013). *t*-test and McNemar statistics (see Appendix B) were used to test the differences in care of self and in the number and type of postpartum problems and complications between the first and seventh week postpartum.

The CTE structure constructed from the content of Nazik and Eryilmaz's (2013) research report is illustrated in Figure 6.9. The non-relational propositions for each component of the CTE structure are listed in Box 6.12.

A CTE Structure for Mixed-Methods Research

Burdette's (2012) journal article is an example of a report of mixed-methods (QUAN + qual) research (see Appendix A) guided by Orem's Self-Care Framework. The purpose of the QUAN portion of her study was to examine the relations of education, age, number of chronic conditions, distance from health care provider, body mass index, and self-care power to self-care activities. The purpose of the QUAL portion of her study was to "illuminate the experience of rural midlife women" (p. 8).

For the QUAN portion of the study, Burdette (2012) used a correlational path model research design (see Appendix A) to test the theory with 224 midlife women residing in a rural area of the upper midwestern United States. For the qual portion of the study, she used a simple descriptive qualitative research design (see Appendix A).

The theory is the relations of education, age, number of chronic conditions, distance from health care provider, body mass index, and self-care power to self-care activities. The conceptual model concepts are Basic Conditioning Factors, Self-Care Agency, Self-Care, and Health Status. The theory concepts are Education, Age, Number of Chronic Conditions, Distance From Health Care Provider, Body Mass Index, Self-Care Power, Self-Care Activities, Meaning of Self-Care, and Meaning of Health.

Basic Conditioning Factors is represented by Education, Age, Number of Chronic Conditions, Distance From Health Care Provider, and Body Mass Index. Self-Care Agency is represented by Self-Care Power, and Self-Care is represented by Self-Care Activities.

Burdette (2012) developed the Demographic Data Instrument to measure Education, Age, Number of Chronic Conditions, and Distance From Health Care Provider. Body Mass Index is measured by a mathematical calculation of anthropomorphic measurements (height and weight). Self-Care Power is measured by

BOX 6.12 An Example of a Conceptual–Theoretical–Empirical Structure for Orem’s Self-Care Framework–Guided Experimental Research

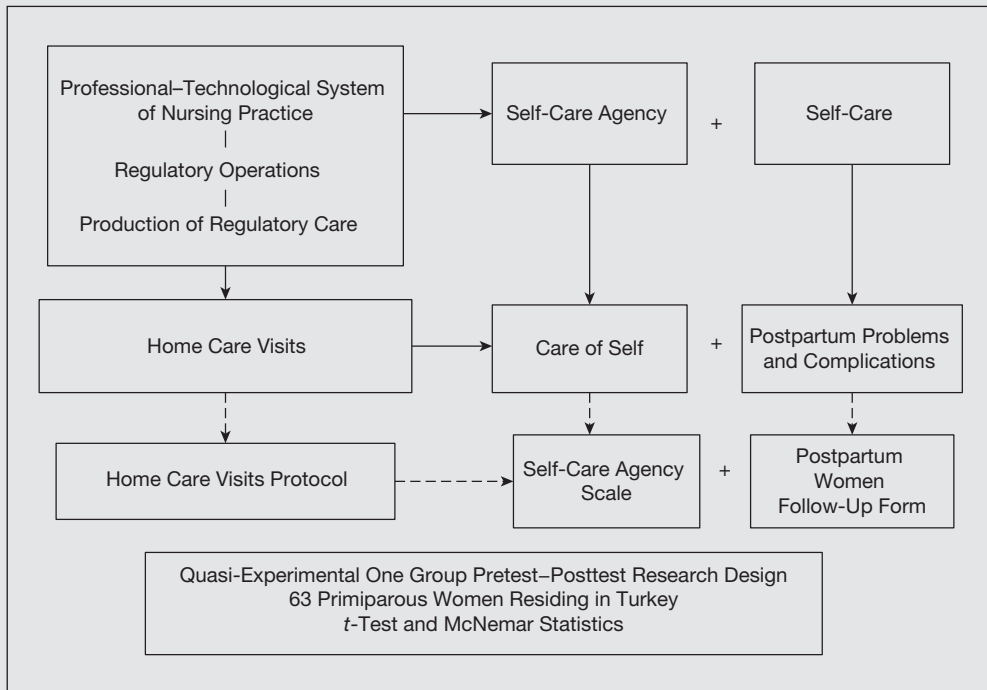


FIGURE 6.9 Conceptual–theoretical–empirical (CTE) structure for Orem’s Self-Care Framework experimental research—theory of the effects of home care visits on postpartum problems and complications and on care of self.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Professional–Technological System of Nursing Practice* is defined as the nursing process.
- The relevant dimension of *Professional–Technological System of Nursing Practice* is regulatory operations.
 - *Regulatory operations* is defined as design and implementation of a nursing system and method(s) of helping.
 - The relevant subdimension of regulatory operations is production of regulatory care.
 - *Production of regulatory care* is defined as implementation of the selected nursing system and method(s) of helping.
- *Self-Care Agency* is defined as the individual’s ability to meet his or her continuing requirements for self-care, which may vary throughout the life span.

(continued)

BOX 6.12 An Example of a Conceptual–Theoretical– Empirical Structure for Orem's Self-Care Framework–Guided Experimental Research (continued)

- *Self-Care* is defined as actions taken by individuals to regulate their function and development.

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Home Care Visits* is defined as nursing care provided to women in their homes for 7 weeks following childbirth.
- *Care of Self* is defined as actions taken by women to care for themselves during the postpartum.
- *Postpartum Problems and Complications* is defined as occurrence following childbirth of inadequate nutrition, inadequate intake of fluids, sleep disturbances, fatigue, loneliness, inadequate hygiene, infections, inadequate breastfeeding, hemorrhoids, discomfort, pain, and inadequate knowledge of family planning (Nazik & Eryilmaz, 2013).

The *non-relational propositions* for the *E* component of the CTE structure are:

- Home Care Visits is operationalized by the Home Care Visits protocol, which stipulates that “The Postpartum Women Follow-Up Form and Self-Care Agency Scale were given to postpartum women, and the pretest data were collected just before the women were discharged from the hospital. Women who were given care using Orem's Self-Care [Framework] were evaluated on the basis of the North American Nursing Diagnosis Association (NANDA) nursing diagnoses and necessary nursing interventions were undertaken. After women were discharged from the hospital, the women were visited at their homes [eight] times (twice in the first week, then once a week). New nursing diagnoses were identified with the Postpartum Women Follow-Up Form and also old diagnoses were assessed at every home visit. Nursing care was given for the new diagnoses. Care results were evaluated and the Self-Care Agency Scale was completed with the Postpartum Women Follow-Up Form again, and posttest data were obtained at the end of the postpartum period (7 weeks). An appointment was made for the next meeting after each visit, and the researcher's phone number was given to women if they needed to make contact” (Nazik & Eryilmaz, 2013, p. 362).
- Care of Self is measured by the Self-Care Agency Scale (Nahcivan, 2004). The Self-Care Agency Scale, which is the Turkish version of the Exercise of Self-Care Agency scale developed by Kearney and Fleischer (1979), includes 35 items that are rated on a 5-point scale of 0 = it never defines me, 1 = it does not define me, 2 = I have no idea, 3 = it defines me little, and 4 = it defines me much, for positively worded items; negatively worded items are reverse scored (Nazik & Eryilmaz, 2013).
- Postpartum Problems and Complications is measured by the investigator-developed Postpartum Women Follow-Up Form, which includes questions about “Orem's universal self-care needs, developmental self-care needs, and health deviations relevant to nursing diagnoses” (Nazik & Eryilmaz, 2013, p. 361).

(continued)

BOX 6.12 An Example of a Conceptual–Theoretical– Empirical Structure for Orem's Self-Care Framework–Guided Experimental Research (continued)

The *relational propositions* for the *C* and *T* components of the CTE structure are:

- The Professional–Technological System of Nursing Practice has a positive effect on Self-Care Agency.
- Therefore, Home Care Visits have a positive effect on Care of Self, such that Home Care Visits increase Care of Self.
- The Professional–Technological System of Nursing Practice has a positive effect on Self-Care.
- Therefore, Home Care Visits have a positive effect on Postpartum Problems and Complications such that Home Care Visits prevent the occurrence of Postpartum Problems and Complications.

The *relational propositions* for the *E* component of the CTE structure are:

- Implementation of the Home Care Visits protocol results in higher scores on the Self-Care Agency Scale.
- Implementation of the Home Care Visits protocol results in lower scores on the Postpartum Women Follow-Up Form.

Source: Nazik and Eyilmaz (2013).

the Denyes Self-Care Agency Instrument (DSCAI-90; Denyes, 1988, 1990a), and Self-Care Activities is measured by the Denyes Self-Care Practice Instrument (DSCPI-90; Denyes, 1988, 1990b). The conceptual model concepts Self Care and Health Status guided the QUAL portion of the study.

Burdette (2012) analyzed the number data using path analysis with hierarchical regression analysis (see Appendix B). Meaning of Self-Care and Meaning of Health were discovered in the responses of the women to open-ended questions on the investigator-developed Demographic Data Instrument. Burdette (2012) analyzed the word data using content analysis (see Appendix B).

The CTE structure constructed from the content of Burdette's (2012) research report is illustrated in Figure 6.10. The non-relational and relational propositions for each component of the CTE structure are listed in Box 6.13.

CONCLUSION

Orem's Self-Care Framework represents a substantial contribution to nursing knowledge by providing an explicit and specific focus for nursing actions that is different from that of other health care professions. Orem fulfilled her goal of identifying the domain and boundaries of nursing as a science and an art. The Self-Care Framework has, as Orem (2001) pointed out, been widely accepted "by

BOX 6.13 An Example of a Conceptual–Theoretical–Empirical Structure for Orem's Self-Care Framework–Guided Mixed-Methods Research

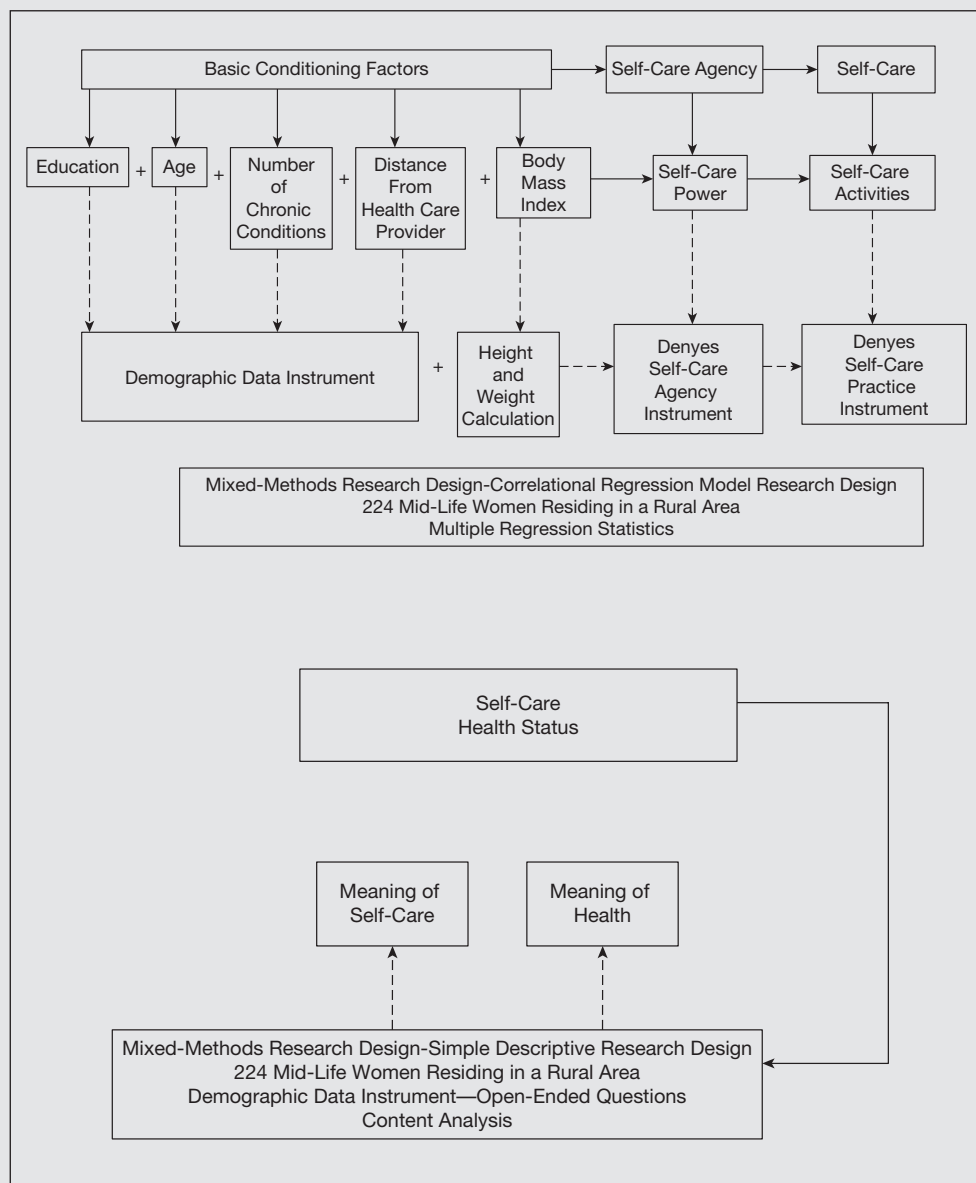


FIGURE 6.10 Conceptual–theoretical–empirical (CTE) structure for Orem's Self-Care Framework mixed-methods research—theory of the relations of education, age, number of chronic conditions, distance from health care provider, body mass index, and self-care power to self-care activities—quantitative and qualitative portions.

(continued)

BOX 6.13 An Example of a Conceptual–Theoretical– Empirical Structure for Orem's Self-Care Framework–Guided Mixed-Methods Research (continued)

The *non-relational propositions* for the *C component* of the conceptual–theoretical–empirical (CTE) structure are:

- *Basic Conditioning Factors* is defined as factors that affect an individual's ability to perform required self-care.
- *Self-Care Agency* is defined as the individual's ability to meet his or her continuing requirements for self-care, which may vary throughout the life span.
- *Self-Care* is defined as actions taken by individuals to regulate their function and development.
- *Health State* is defined as "the stage of an individual that reflects wholeness or soundness of the physical and mental self" (Orem, 2001, p. 186).

The *non-relational propositions* for the *T component* of the CTE structure are:

- *Education* is defined as number of years of schooling.
- *Age* is defined as chronological age in years.
- *Number of Chronic Conditions* is defined as the number of chronic diseases experienced by each person.
- *Distance From Health Care Provider* is defined as miles from the person's residence to his or her health care provider.
- *Body Mass Index* is defined as size of the body as determined by height and weight.
- *Self-Care Power* is defined as ability to care for self, including "ego strength, valuing of health, health knowledge and decision-making capability, energy, feelings, and attention to health" (Denyes, as cited in Burdette, 2012, p. 7).
- *Self-Care Activities* is defined as "actions to promote self-care for health or wellness" (Medias, Clark, & Guevara, as cited in Burdette, 2012, p. 6).
- *Meaning of Self-Care* is defined as "taking care of and responsibility for self by making good choices and remaining independent" (Burdette, 2012, p. 12).
- *Meaning of Health* is defined as "well-being of mind, body, and soul supporting the ability to work and play" (Burdette, 2012, p. 12).

The *non-relational propositions* for the *E component* of the CTE structure are:

- Education is measured by an item on the investigator-developed Demographic Data Instrument (Burdette, 2012).
- Age is measured by an item on the investigator-developed Demographic Data Instrument.
- Number of Chronic Conditions is measured by the sum of several items on the investigator-developed Demographic Data Instrument (Burdette, 2012).
- Distance From Health Care Provider is measured by an item on the investigator-developed Demographic Data Instrument (Burdette, 2012).
- Body Mass Index is measured by a mathematical calculation of anthropomorphic measurements—weight (in kilograms) divided by height (in meters, squared).

(continued)

BOX 6.13 An Example of a Conceptual–Theoretical– Empirical Structure for Orem's Self-Care Framework–Guided Mixed-Methods Research (continued)

- Self-Care Power is measured by the Denyes Self-Care Agency Instrument (DSCAI-90; Denyes, 1988, 1990a). The DSCAI-90 includes 24 items arranged in six subscales—“ego strength, valuing of health, health knowledge and decision-making capability, energy, feelings, and attention to health” (Denyas as cited in Burdette, 2012, p. 7). Items are rated on a ratio scale that yields a score ranging from 0% to 100%. Total and subscale scores can be calculated.
- Self-Care Activities is measured by the Denyes Self-Care Practice Instrument (DSCPI-90; Denyes, 1988, 1990b). The DSCPI-90 is made up of 18 items, which are rated on a ratio scale that yields a score ranging from 0% to 100%.
- Meaning of Self-Care was extracted by content analysis of responses to an open-ended question—“What does self-care mean to you?”—on the investigator-developed Demographic Data Instrument (Burdette, 2012, p. 12).
- Meaning of Health is extracted by content analysis of responses to an open-ended question on the investigator-developed Demographic Data Instrument asking for the definition of health (Burdette, 2012).

For the quantitative portion of the study, the *relational propositions* for the *C* and *T* components of the CTE structure are:

- Basic Conditioning Factors are related to Self-Care Agency, such that the person's ability to perform self-care and the kind and amount of self-care that is required are influenced by the Basic Conditioning Factors.
- Therefore, Education, Age, Number of Chronic Conditions, Distance From Health Care Provider, and Body Mass Index are related to Self-Care Power.
- Self-Care Agency is positively related to Self-Care.
- Therefore, Self-Care Power is positively related to Self-Care Activities.

For the quantitative portion of the study, the *relational propositions* for the *E* component of the CTE structure are:

- Scores for the Demographic Data Instrument items are related to scores on the DSCAI-90.
- Scores on the Denyes Self-Care Agency Instrument are related to scores on the DSCPI-90.

Source: Burdette (2012).

nursing practitioners, by nursing curriculum designers, by teachers of nursing, by nursing researchers and scholars as a valid general comprehensive [nursing conceptual model]” (p. 420). It is noteworthy that the Self-Care Framework presents an optimistic view of patients' contributions to their health care that is in keeping with contemporary social values.

Perhaps, the most important contribution of the Self-Care Framework is its explicit focus on what matters to nurses and how that focus helps nurses to

retain a nursing perspective in the multidisciplinary milieu of health care. Dodd (1997) explained,

Orem's [framework] provides a nursing-based focus and systematic guidelines for examining the balance between a person's needs, capabilities, and limitations in exercising self-care actions to enhance personal health. . . . Although we have incorporated knowledge from other disciplines (e.g., physiology, pharmacology, dentistry), Orem's [framework] assisted us in maintaining a focus on issues salient to nursing practice. (p. 987)

The wide acceptance and application of Orem's Self-Care Framework is evident in the examples of its use as a guide for practice, quality improvement projects, and research given in this chapter.

NOTE

1. Portions of this chapter are adapted from Fawcett, J., & DeSanto-Madeya, S. (2013). *Contemporary nursing knowledge: Analysis and evaluation of nursing models and theories* (3rd ed., Chapter 8). Philadelphia, PA: F. A. Davis, with permission.

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CHAPTER 8

ROY'S ADAPTATION MODEL¹

Sister Callista Roy's Adaptation Model focuses on changes experienced by human beings as they respond to environmental stimuli to maintain their integrity (Roy, 2009). The goal of Roy's Adaptation Model nursing is promotion of an integrated level of adaptation for individuals and groups that will advance wellness, the quality of life, and death with dignity (Roy, 2009).

ROY'S ADAPTATION MODEL: CONCEPTS AND NON-RELATIONAL PROPOSITIONS

This section of the chapter includes the concepts of Roy's Adaptation Model and the definitions (non-relational propositions) of the concepts and the dimensions of the multidimensional concepts (Roy, 2009).

Human Adaptive System is defined as a unified whole made up of parts (Roy, 2009). The two dimensions of the concept are individual persons and groups or relational persons.

Individual persons is defined as a single person.

Groups or relational persons is defined as a collective or aggregate who relate within the context of the collective, such as families, organizations, communities, nations, and society as a whole.

Coping Processes is defined as "innate coping processes [that] are genetically determined or common to the species and are generally viewed as automatic process; people do not have to think about them...[and] acquired coping processes [that] are developed through strategies such as learning" (Roy, 2009, p. 41). The two dimensions of the concept that pertain to individual persons are regulator coping subsystem and cognator coping subsystem. The two dimensions that pertain to groups or relational persons are stabilizer subsystem control process and innovator subsystem control process.

Regulator coping subsystem, which pertains to individuals, is defined as a major coping process that “responds through neural, chemical, and endocrine coping channels” (Roy, 2009, p. 41).

Cognator coping subsystem, which pertains to individuals, is defined as a second major coping process that involves “four cognitive-emotive channels: perceptual and information processing, learning, judgment, and emotion” (Roy, 2009, p. 41).

Stabilizer subsystem control process, which pertains to groups, is defined as “the established structure, values, and daily activities whereby participants accomplish the primary purpose of the group and contribute to common purposes of society” (Roy, 2009, p. 42).

Innovator subsystem control process, which pertains to groups, is defined as “the internal subsystem that involves structures and processes for change and growth in human social systems” (Roy, 2009, p. 43).

Behavior is defined as “All [observable and nonobservable] responses of the human adaptive system including capacities, assets, knowledge, skills, abilities, and commitments” (Roy, 2009, p. 39). The two dimensions of the concept are adaptive responses and ineffective responses.

Adaptive responses is defined as responses that promote “integrity of the human adaptive system in terms of the goals of survival, growth, reproduction, mastery, and human and environment transformations” (Roy, 2009, p. 58).

Ineffective responses is defined as responses that “can, in the immediate situation or if continued over a long time, threaten the human system’s survival, growth, reproduction, mastery, or people and environment transformations” (Roy, 2009, p.40).

Adaptive Modes is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes. The four dimensions of the concept are physiological/physical mode, self-concept/group identity mode, role function mode, and interdependence mode.

Physiologic Mode, which pertains to individuals, is defined as “the manifestation of the physiologic activities of all the cells, tissues, organs, and systems comprising the human body” (Roy, 2009, p. 90). The nine subdimensions of Physiological Mode are oxygenation; nutrition; elimination; activity and rest; protection; senses; fluid, electrolyte, and acid–base balance; neurological function; and endocrine function.

Oxygenation is defined as “The processes (ventilation, gas exchange, and transport of gases [to and from the tissues]) by which cellular oxygen supply is maintained in the body” (Roy, 2009, p. 111).

Nutrition is defined as “The series of processes by which a person takes in nutrients and assimilates and uses them to maintain body tissue, promote growth, and provide energy” (Roy, 2009, p. 130).

Elimination is defined as a life process that concerns elimination of waste products from the body, including intestinal elimination and urinary elimination (Roy, 2009).

Activity and rest is defined as "body movement and serves various purposes such as carrying out daily living chores and protecting self or others from bodily injuries... Rest... involves changes in activity in which energy requirements are minimal" (Roy, 2009, p. 166).

Protection is defined as "two basic life processes: nonspecific defense processes and specific defense processes. Together these two functional defense systems work to protect the body from 'foreign' substances such as bacteria, viruses, parasites, and abnormal body cells" (Roy, 2009, p. 200).

Senses is defined as "seeing [vision], hearing, and feeling, [which] are processes by which an individual receives and exchanges information needed for the activities of life, including relating to others" (Roy, 2009, p. 224).

Fluid, electrolyte, and acid-base balance is defined as "Fluid balance [refers to the balance of fluids] between intracellular and extracellular compartments... Electrolyte balance addresses concentrations of salts within the body... [Acid-base balance refers to the] status of body fluids[,] is related to the concentration of hydrogen ions and is described in terms of pH" (Roy, 2009, pp. 256, 257, 258).

Neurological function is defined as the components of the central nervous system (brain and spinal cord) and the peripheral nervous system (cranial and spinal nerves) (Roy, 2009).

Endocrine function is defined as integration and maintenance of "all the body's physiologic processes to promote normal growth, development, and maintenance of structure and function" (Roy, 2009, p. 302).

Physical Mode, which pertains to people interacting in groups, is defined as the "way in which the group adaptive system manifests adaptation concerning basic operating resources" (Roy, 2009, p. 91).

Self-Concept Mode, which pertains to individuals, is defined as behavior "pertaining to the personal aspect of human systems" (Roy, 2009, p. 95). The two subdimensions of self-concept mode are physical self and personal self.

Physical self is defined as "appraisal of one's own physical being, including physical attributes, functioning, sexuality, health and illness states, and appearance [that encompasses] body sensation and body image... Body sensation [refers to] how one feels and experiences the self as a physical being... Body image [refers to] how one views oneself physically and one's view of personal appearance" (Roy, 2009, pp. 322, 323).

Personal self is defined as "appraisal of one's own characteristics, expectations, values, and worth, including self-consistency, self-ideal, and the moral-ethical-spiritual self... Self-consistency [refers to] that part of the personal self... which strives to maintain a consistent self-organization and to avoid disequilibrium; an organized system

of ideas about self....Self-ideal [refers to] that aspect of the personal self that relates to what the person would like to be or is capable of doing....Moral-ethical-spiritual self [refers to] that aspect of the personal self which includes a belief system and an evaluation of who one is in relation to the universe" (Roy, 2009, p. 323).

Group Identity Mode, which pertains to groups, is defined as referring to "shared relations, goals, and values, which act within and create a social milieu and culture, a group self-image, and coresponsibility for goal achievement" (Roy, 2009, p. 433). The four subdimensions of group identity mode are interpersonal relationships, group self-image, social milieu, and group culture.

Interpersonal relationships is defined as a component of the group identity mode.

Group self-image is defined as a component of the group identity mode.

Social milieu is defined as a component of the group identity mode that is the "total human-made environment that surrounds the group in which it is embedded" (Roy, 2009, p. 433).

Group culture is defined as a component of the group identity mode that addresses the "group's agreed upon expectations, including values, goals, and norms for relating" (Roy, 2009, p.433).

Role Function Mode, which pertains to both individuals and groups, is defined as behaviors—or activities—that are associated with ascribed and acquired roles (Roy, 2009). The seven subdimensions of the role function mode are primary role, secondary role, tertiary role, instrumental behavior, expressive behavior, role-taking, and integrating roles.

Primary role is defined as an "ascribed role based on age, sex, and developmental stage; it determines the majority of behaviors engaged in by a person during a particular growth period of life" (Roy, 2009, p. 359).

Secondary role is defined as a "role that a person assumes to complete the tasks associated with a developmental stage and primary role" (Roy, 2009, p. 359).

Tertiary role is defined as a "role that is freely chosen by a person, temporary in nature, and often associated with the accomplishment of a minor task in a person's current development" (Roy, 2009, p. 360).

Instrumental behavior is defined as "goal-oriented behavior; role activities the person performs" (Roy, 2009, p. 359).

Expressive behavior is defined as the "feelings and attitudes held by the person about role performance" (Roy, 2009, p. 359).

Role-taking is defined as a "process of looking at or anticipating another person's behavior by viewing it within a role attributed to the other" (Roy, 2009, p. 359).

Integrating roles is defined as the "process of managing different roles and their expectations" (Roy, 2009, p. 466).

Interdependence Mode, which pertains to individuals and groups, is defined as “interactions related to the giving and receiving of love, respect, and value” (Roy, 2009, p. 45). The eight subdimensions of the interdependence mode are affectional adequacy, developmental adequacy, resource adequacy, significant others, support systems, context, infrastructure, and resources.

Affectional adequacy, which pertains to both individuals and groups, is defined as the “need to give and receive love, respect, and value satisfied through effective relations and communication” (Roy, 2009, p. 385).

Developmental adequacy, which pertains to both individuals and groups, is defined as “learning and maturation in relationships achieved through developmental processes” (Roy, 2009, p. 385).

Resource adequacy, which pertains to both individuals and groups, is defined as the “need for food, clothing, shelter, health, and security achieved through interdependent processes” (Roy, 2009, p. 485).

Significant others pertaining to individuals is defined as the “individuals to whom the most meaning or importance is given [by a person]” (Roy, 2009, p. 385).

Significant others pertaining to groups is defined as “other groups to whom the most meaning or importance is given [by the group]” (Roy, 2009, p. 485).

Support systems pertaining to individuals is defined as the “persons, groups, [and] organizations with whom one associates in order to achieve affectional, developmental, and resources requirements” (Roy & Andrews, 1999, p. 475).

Support systems pertaining to groups is defined as “persons, groups, [and] organizations with which a group associates in order to achieve affectional, developmental, and resources requirements” (Roy, 2009, p. 485).

Context, which pertains to groups, is defined as “external (economic, social, political, cultural, belief, family systems) and internal (mission, vision, values, principles, goals, plans) influences within relationships” (Roy & Andrews, 1999, p. 474).

Infrastructure, which pertains to groups, is defined as the “affectional, resource, and developmental processes that exist within a relationship” (Roy & Andrews, 1999, p. 474).

Resources, which pertains to groups, is defined as food, clothing, shelter, meeting places, physical facilities for organizations, supplies, equipment, technology, and finances (Roy & Andrews, 1999).

Stimuli is defined as “factor[s] in the internal... and external environment... that provoke a response, or more generally, the point of interaction of the human system and the environment” (Roy, 2009, p. 27). The three dimensions of the concept are focal stimulus, contextual stimuli, and residual stimuli.

Focal stimulus is defined as the internal or external environmental stimulus most immediately confronting the adaptive system (Roy, 2009, p. 63).

Contextual stimuli is defined as other than the focal stimulus, "all other internal or external [environmental] stimuli affecting the situation" (Roy, 2009, p. 63).

Residual stimuli is defined as "those stimuli having an indeterminate effect on the behavior of the individual or group adaptive system" (Roy, 2009, p. 64).

Adaptation is defined as 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" (Roy, 2009, p. 26). The five dimensions of the concept are survival, growth, reproduction, mastery, and person and environment transformations.

Survival is defined as a goal of adaptation.

Growth is defined as a goal of adaptation.

Reproduction is defined as a goal of adaptation that includes "the continuation of the human species by having children, but it also involves the many ways that people extend themselves in time and space by creative works and moral presence" (Roy, 2009, p. 39).

Mastery is defined as a goal of adaptation.

Person and environment transformations is defined as a goal of adaptation.

Adaptation Level is defined as the "condition of the life processes as a significant focal, contextual, or residual stimulus in a situation... The pooled effect of focal, contextual, and residual stimuli determines the adaptation level" (Roy, 2009, pp. 33, 38). The three dimensions of the concept are integrated life process, compensatory life process, and compromised life process.

Integrated life process is defined as the "Adaptation level at which the structures and functions of a life process are working as a whole to meet human needs" (Roy, 2009, p. 27).

Compensatory life process is defined as the "Adaptation level at which the cognator and regulator [or stabilizer and innovator] have been activated by a challenge to the integrated life processes" (Roy, 2009, p. 26).

Compromised life process is defined as the "Adaptation level resulting from inadequate integrated and compensatory life process; an adaptation problem" (Roy, 2009, p. 26).

Health is defined as a "state and process of being and becoming an integrated and whole human being" (Roy, 2009, p. 48).

Roy's Adaptation Model Nursing process is defined as the nursing process. The six dimensions of the concept are assessment of behaviors, assessment of stimuli, nursing diagnosis, goal setting, intervention, and evaluation.

Assessment of behaviors is defined as systematic collection of data about the behavior of the human adaptive system and judgment about the current state of the coping process and of adaptation in each adaptive mode—physiological/physical mode, self-concept/group identity mode, role function mode, and interdependence mode.

Assessment of stimuli is defined as identification of the internal and external focal and contextual stimuli that are influencing the behaviors of particular interest, in the order of priority established at the end of the

assessment of behaviors dimension of Roy's Adaptation Model Nursing Process.

Nursing diagnosis is defined as a statement conveying the adaptation status of the human adaptive system of interest, specifically a statement about the behaviors of interest together with the most relevant influencing stimuli.

Goal setting is defined as a clear statement of the desired behavioral outcomes in response to nursing provided for the human adaptive system.

Intervention is defined as management of stimuli using nursing approaches that have a high probability of changing stimuli or strengthening adaptive processes. Stimuli may be altered, increased, decreased, removed, or maintained.

Evaluation is defined as judgment about the effectiveness of nursing interventions in relation to the behaviors of the human adaptive system.

ROY'S ADAPTATION MODEL: RELATIONAL PROPOSITIONS

The statements of associations (relational propositions) between concepts of the Roy Adaptation Model are listed here.

- Stimuli are related to Coping Processes.
- Coping Processes are related to Adaptive Modes.
- Stimuli are related to Adaptive Modes.
- Roy's Adaptation Model Nursing Process has an effect on Adaptive Modes.
- The four dimensions of Adaptive Modes—physiological/physical mode, self-concept/group identity mode, role function mode, and interdependence mode—are interrelated.

ROY'S ADAPTATION MODEL: APPLICATION TO NURSING PRACTICE

The guidelines for Roy's Adaptation Model nursing practice are listed in Box 8.1. A diagram of the practice methodology for Roy's Adaptation Model, which is called the Roy Adaptation Model Nursing Process, is illustrated in Figure 8.1.

A practice tool that includes all aspects of the practice methodology is given in Box 8.2.

A Conceptual–Theoretical–Empirical Structure for Assessment

Roy and Zhan's (2010) book chapter includes a practice exemplar, one section of which focuses on assessment. They described the use of Roy's Adaptation Model Nursing Process with three generations of a Chinese American family. The family members are a 50-year-old man, his wife, and their 7-year-old daughter, the man's uncle, the man's 32-year-old cousin and her husband and 5-year-old son, and the man's 75-year-old mother, who has a medical diagnosis

BOX 8.1 Guidelines for Roy's Adaptation Model Practice

The broad purpose of Roy's Adaptation Model-based nursing practice is to promote the ability of human adaptive systems to adjust effectively to changes in the environment and also to create changes in the environment. The more specific purpose of Roy's Adaptation Model-based nursing practice is to promote the human adaptive system's adaptation in the physiological/physical, self-concept/group identity, role function, and interdependence modes.

Practice problems of interest encompass adaptive and ineffective behavioral responses of human adaptive systems in the physiological/physical, self-concept/group identity, role function, and interdependence adaptive modes.

Nursing may be practiced in any setting in which nurses encounter individuals and groups, ranging from virtually every type of health care institution to people's homes and the community at large.

Legitimate participants in nursing practice are human adaptive systems—including individuals, families, and other groups, communities, and society—considered sick or well. Those adaptive systems may or may not manifest specific adaptation problems and ineffective behavioral responses.

The practice methodology is Roy's Adaptation Model Nursing Process. The components of the process are assessment of behaviors, assessment of stimuli, nursing diagnosis, goal setting, intervention, and evaluation.

Roy's Adaptation Model-based nursing practice contributes to the well-being of human adaptive systems by maintaining or enhancing the adaptation level and adaptive behavioral responses.

Adapted from Fawcett and DeSanto-Madeya (2013).

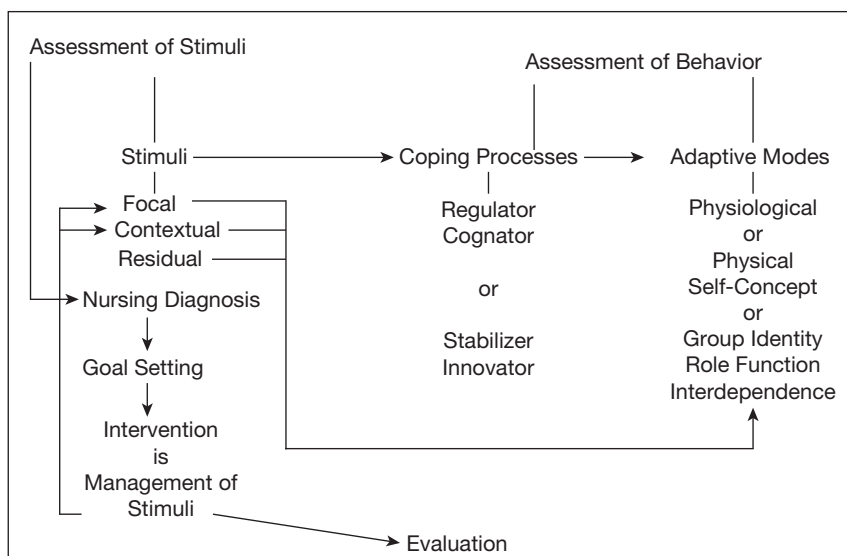


FIGURE 8.1 Roy's Adaptation Model practice methodology: Roy's Adaptation Model nursing process.

BOX 8.2 The Roy's Adaptation Model Practice Methodology Tool for Individuals or Groups

ASSESSMENT OF BEHAVIORS AND STIMULI

Physiological/Physical Mode Assessment

Note: Physiological mode assessment may also include the patient's vital signs, results of laboratory tests, and other physiological parameters.

Nurse: On a scale of 0 to 10, with 0 indicating "very sick" and 10 indicating "very well," how do you feel physically?

Patient:

Nurse: What is happening right now to make you feel that way? [Asking about focal and contextual stimuli]

Patient:

Self-Concept/Group Identity Mode Assessment

Nurse: On a scale of 0 to 10, with 0 indicating "very sad" and 10 indicating "very excited," how do you feel emotionally?

Patient:

Nurse: What is happening right now to make you feel that way? [Asking about focal and contextual stimuli]

Patient:

Role Function Mode Assessment

Nurse: On a scale of 0 to 10, with 0 indicating "not at all" and 10 indicating "totally," to what extent do you think you will maintain your usual activities when you have recovered from [the health condition]?

Patient:

Nurse: What do you think will happen to help you or hinder you in doing your usual activities? [Asking about focal and contextual stimuli]

Patient:

Interdependence Mode Assessment

Nurse: On a scale of 0 to 10, with 0 indicating "none" and 10 indicating "a lot," to what extent are you receiving help from your family and friends?

Patient:

Nurse: In what areas do you need more help? [Asking about focal and contextual stimuli]

Patient:

Regulator Coping Processes

Assessment of regulator coping processes requires information for autonomic nervous system activity evident in tests for fluid, electrolyte, and acid-base balance and hormones.

(continued)

BOX 8.2 The Roy's Adaptation Model Practice Methodology Tool for Individuals or Groups (continued)

Cognator Coping Processes/Stabilizer and Innovator Subsystem Control Processes

Nurse: On a scale of 0 to 10, with 0 indicating "not well" and 10 indicating "very well," to what extent are you managing to cope with all that is happening right now?

Patient:

NURSING DIAGNOSIS

Note: Adaptive behaviors are those indicating the patient's goals for survival, growth, mastery, and person–environmental transformation have been achieved, that is, the patient's needs have been met. Ineffective behaviors are those indicating that the goals have not been achieved, that is, that the patient's needs have not been met and that nursing intervention is required.

The nursing diagnosis is stated as behaviors of interest with the most relevant influencing focal and/or contextual stimuli.

Physiologic Mode: Physiologic mode behaviors are (adaptive or ineffective) due to the environmental stimulus/stimuli of ...

Self-Concept Mode: Self-concept mode behaviors are (adaptive or ineffective) due to the environmental stimulus/stimuli of ...

Role Function Mode: Role function mode behaviors are (adaptive or ineffective) due to the environmental stimulus/stimuli of ...

Interdependence Mode: Interdependence mode behaviors are (adaptive or ineffective) due to the environmental stimulus/stimuli of ...

GOAL SETTING

Goals are established in collaboration between the nurse and the patient and are stated as objectives to be achieved within a specific time frame.

INTERVENTION

The nurse and the patient discuss and select one or more interventions to be used to meet the goals.

EVALUATION

The nurse and the patient determine the extent to which the goals were met and the effectiveness of the interventions.

Adapted from Fawcett and DeSanto-Madeya (2013).

of dementia. Roy and Zhan explained, "As [the man's] mother's cognitive function deteriorated, [he] was virtually overwhelmed by caring for his mother [in his home] while keeping his responsibility of managing the [family's Chinese] restaurant" (pp. 176–177).

The theory used to guide practice is assessment of family coherence. The conceptual model concept is Roy's Adaptation Model Nursing Process. The relevant dimensions of the concept are assessment of behavior and assessment of stimuli. The theory concept is Family Coherence. One dimension of Family Coherence is family structure, function, relationships, and consistency. The other two dimensions are demands and problems.

The assessment of behaviors dimension of Roy's Adaptation Model Nursing Process is represented by the family structure, function, relationships, and consistency dimension of Family Coherence. The assessment of stimuli dimension of Roy's Adaptation Model Nursing Process is represented by the demands and problems dimensions of Family Coherence. Roy and Zhan (2010) used the assessment of behavior and assessment of stimuli sections of Roy's Adaptation Model Practice Methodology to assess Family Coherence and its dimensions.

The conceptual–theoretical–empirical (CTE) structure that was constructed from the assessment content of Roy and Zhan's (2010) practice exemplar is illustrated in Figure 8.2. The non-relational propositions for each component of the CTE structure are listed in Box 8.3.

BOX 8.3 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Nursing Practice: Assessment

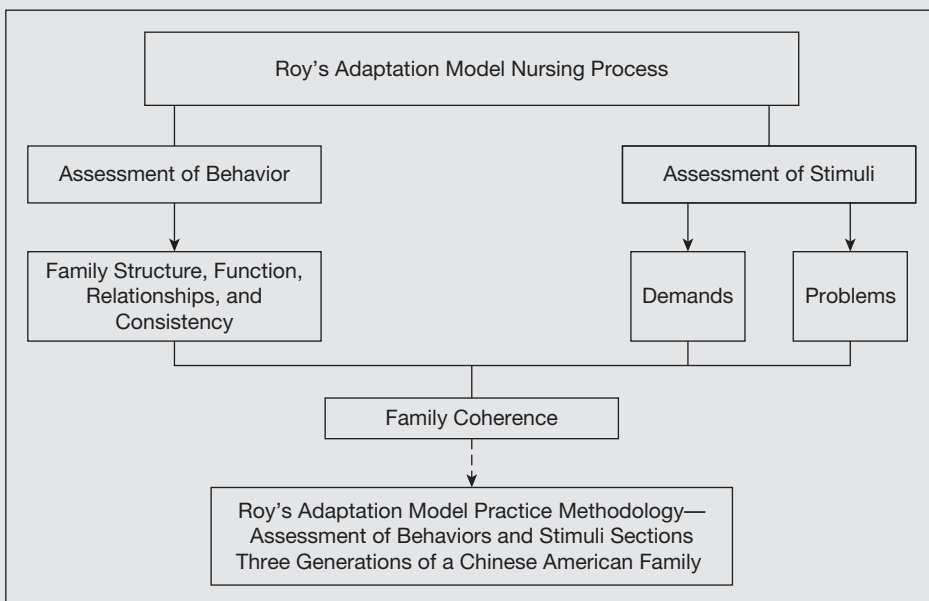


FIGURE 8.2 Conceptual–theoretical–empirical (CTE) structure for Roy's Adaptation Model nursing practice: Assessment—theory of family coherence.

(continued)

BOX 8.3 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Nursing Practice: Assessment (continued)

The *non-relational propositions* for the *C component* of the conceptual–theoretical–empirical (CTE) structure are:

- *Roy's Adaptation Model Nursing Process* is defined as the nursing process.
- The relevant dimensions of Roy's Adaptation Model Nursing Process are assessment of behaviors and assessment of stimuli.
 - *Assessment of behaviors* is defined as systematic collection of data about the behavior of the human adaptive system and judgment about the current state of the coping processes and of adaptation in each adaptive mode—physiological/physical mode, self-concept/group identity mode, role function mode, and interdependence mode.
 - *Assessment of stimuli* is defined as identification of the internal and external focal and contextual stimuli that are influencing the behaviors of particular interest, in the order of priority established at the end of the assessment of behaviors dimension of the Roy's Adaptation Model Nursing Process.

The *non-relational propositions* for the *T component* of the CTE structure are:

- *Family Coherence* is defined as “an indicator of positive adaptation [that] refers to a state of unity or a consistent sequence of thoughts that connects family members who share group identity, goals, and values” (Roy & Zhan, 2010, p. 176).
- The dimensions of Family Coherence are family structure, function, relationships, and consistency; demands; and problems.
 - *Family structure, function, relationships, and consistency* is defined as “division of chores such as housekeeping, shopping, and/or repairs; their employment status; the living arrangement and space allocation for family members; and division of family caregiving responsibilities...[and] how decisions are made in the family, from small daily decisions to larger, health care-related decisions” (Roy & Zhan, 2010, p. 177).
 - *Demands* is defined as demands faced by the family, including continuing to work while caring for a family member with a medical diagnosis of dementia (Roy & Zhan, 2010).
 - *Problems* is defined as problems faced and to be solved by the family, including finding “Chinese-speaking home health aides from [the] community” for respite care of the family member with a medical diagnosis of dementia, who does not speak English, which is very challenging due to the social stigma attached to dementia in the Chinese community (Roy & Zhan, 2010, pp. 177–178).

The *non-relational proposition* for the *E component* of the CTE structure is:

- Family Coherence and its three dimensions are assessed by Roy's Adaptation Model Practice Methodology—assessment of behaviors and assessment of stimuli sections.

Source: Roy and Zhan (2010).

A CTE Structure for Intervention

Another section of Roy and Zhan's (2010) practice exemplar focuses on use of Roy's Adaptation Model to guide intervention. They described how strategies to manage stimuli were used with the members of a three-generation Chinese American family; details about the family are given in the "An Example of a Conceptual-Theoretical-Empirical Structure for Roy's Adaptation Model Nursing Practice: Assessment" section of this chapter.

The theory used to guide practice is effects of focusing on stimuli on family coping strategies and family resources. One conceptual model concept is Roy's Adaptation Model Nursing Process. The relevant dimension of the concept is intervention. The other conceptual model concepts are Coping Processes and Adaptive Modes. The relevant dimension of Coping Processes is stabilizer subsystem control process, and the relevant dimension of Adaptive Modes is role function mode.

The theory concepts are Focus on Stimuli, Family Coping Strategies, and Family Resources. The intervention dimension of Roy's Adaptation Model Nursing Process is represented by Focus on Stimuli. The stabilizer subsystem control process dimension of Coping Processes is represented by Family Coping Strategies. The role function mode dimension of Adaptive Modes is represented by Family Resources.

Focus on Stimuli is operationalized by the intervention section of Roy's Adaptation Model Nursing Process. Family Coping Strategies is measured by data from evaluation of the Coping Processes–stabilizer subsystem control process section of Roy's Adaptation Model Practice Methodology. Family Resources is measured by data from evaluation of the adaptive modes–role function mode section of Roy's Adaptation Model Practice Methodology.

The CTE structure that was constructed from an interpretation of the intervention content of Roy and Zhan's (2010) practice exemplar is illustrated in Figure 8.3. The non-relational and relational propositions for each component of the CTE structure are listed in Box 8.4.

APPLICATION TO QUALITY IMPROVEMENT PROJECTS

The guidelines for Roy's Adaptation Model quality improvement (QI) projects are listed in Box 8.5.

A CTE Structure for a QI Project

Kaur and Mahal's (2012) journal article is an example of a report of Roy's Adaptation Model QI project. The purpose of their project was to determine "the acceptability for utilization of [the] Roy Adaptation [Model] based nursing assessment tool" (p. 133).

The theory is the effect of an educational program on utilization of Roy's Adaptation Model Assessment Tool. One conceptual model concept is Roy's

BOX 8.4 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Nursing Practice: Intervention

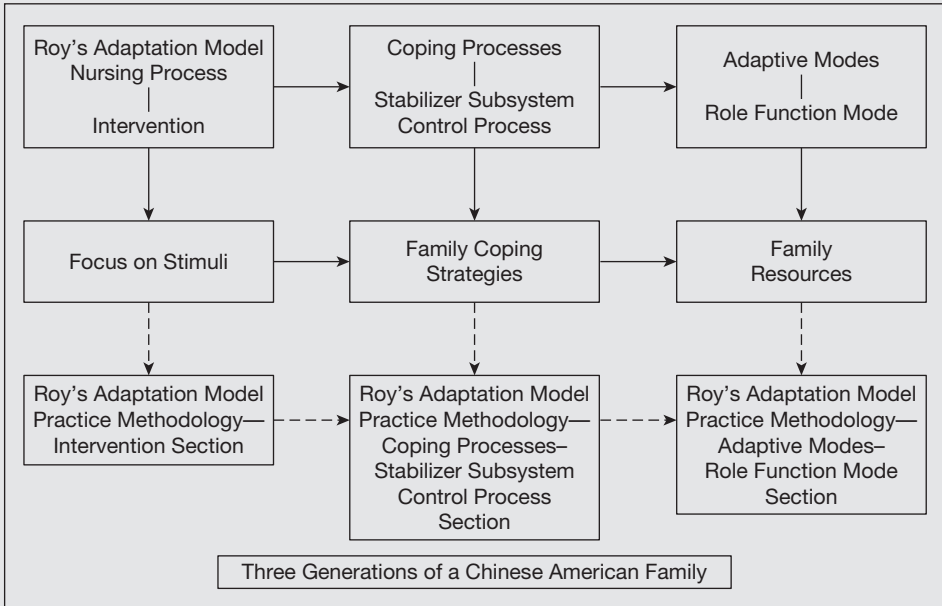


FIGURE 8.3 Conceptual–theoretical–empirical (CTE) structure for Roy's Adaptation Model nursing practice: Intervention—theory of effects of focus on stimuli on family coping strategies and family resources.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Roy's Adaptation Model Nursing Process* is defined as the nursing process.
- The relevant dimension of *Roy's Adaptation Model Nursing Process* is intervention.
 - *Intervention* is defined as management of stimuli using nursing approaches that have a high probability of changing stimuli or strengthening adaptive processes. Stimuli may be altered, increased, decreased, removed, or maintained.
- *Coping Processes* is defined as "innate coping processes [that] are genetically determined or common to the species and are generally viewed as automatic process; people do not have to think about them ...[and] acquired coping processes [that] are developed through strategies such as learning" (Roy, 2009, p. 41).
- The relevant dimension of *Coping Process* is stabilizer subsystem control process.
 - *Stabilizer subsystem control process* is defined as "the established structure, values, and daily activities whereby participants accomplish the primary purpose of the group and contribute to common purposes of society" (Roy, 2009, p. 42).
- *Adaptive Modes* is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes.
- The relevant dimension of *Adaptive Modes* is role function mode.

(continued)

BOX 8.4 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Nursing Practice: Intervention (continued)

- o *Role function mode* is defined as behaviors—or activities—that are associated with ascribed and acquired roles (Roy, 2009).

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Focus on Stimuli* is defined as “focusing on the stimuli affecting the behaviors and managing the stimuli by altering, increasing, or decreasing, removing, or maintaining stimuli as proposed by the Roy Adaptation Model” (Roy & Zhan, 2010, p. 179).
- *Family Coping Strategies* is defined as “use [of] effective coping strategies to strengthen compensatory processes by acknowledging how good the family is at transcending the crisis” (Roy & Zhan, 2010, p. 179).
- *Family Resources* is defined as “working with the family to identify additional resources in support of family caregiving and by reinforcing their shared goals, values, relations, and group identity” (Roy & Zhan, 2010, p. 179).

The *non-relational propositions* for the *E* component of the CTE structure are:

- Focus on Stimuli is operationalized by the intervention section of Roy's Adaptation Model Practice Methodology.
- Family Coping Strategies is measured by the Coping Processes–stabilizer subsystem control processes section of Roy's Adaptation Model Practice Methodology.
- Family Resources is measured by the Adaptive Modes–role function mode section of Roy's Adaptation Model Practice Methodology.

The *relational propositions* for the *C* and *T* components of the CTE structure are:

- Stimuli are related to Coping Processes.
- Therefore, Focus on Stimuli is related to Family Coping Strategies.
- Coping Processes are related to Adaptive Modes.
- Therefore, Family Coping Strategies are related to Family Resources.

The *relational propositions* for the *E* component of the CTE structure are:

- Implementation of the intervention section of Roy's Adaptation Model Practice Methodology is related to data from evaluation of the Coping Processes–stabilizer subsystem control processes section of Roy's Adaptation Model Practice Methodology.
- Data from evaluation of the Coping Processes–stabilizer subsystem control process section of Roy's Adaptation Model Practice Methodology are related to data from evaluation of the Adaptive Modes–role function mode section of Roy's Adaptation Model Practice Methodology.

Source: Roy and Zhan (2010).

BOX 8.5 Guidelines for Roy's Adaptation Model Quality Improvement Projects

The purpose of quality improvement (QI) projects is to test the association between nurses' use of Roy's Adaptation Model practice methodology (Roy's Adaptation Model Nursing Process) and nurse and/or patient adaptation to environmental stimuli.

The phenomenon of interest for QI projects is the extent of nurses' use of Roy's Adaptation Model Nursing Process.

Data for QI projects are to be collected from nurses and/or patients in various settings, such as patients' homes, nurses' private practice offices, ambulatory clinics, hospitals, and communities.

Any methodological theory of change or QI may be used to guide the design of the QI project and the times for data collection. Checklists, rating scales, and responses to open-ended questions may be used to determine the extent to which nurses actually implement one or more components of Roy's Adaptation Model Nursing Process—assessment of stimuli, assessment of behavior, nursing diagnosis, goal setting, intervention, evaluation.

Descriptive statistics may be used to analyze data obtained from checklists or rating scales, and content analysis may be used to identify categories or themes found in responses to open-ended questions.

The results of Roy's Adaptation Model Nursing Process-based QI projects enhance understanding of how using Roy's Adaptation Model Nursing Process affects nurse and/or patient adaptation to environmental stimuli.

Adaptation Model Nursing Process; the relevant dimensions are assessment of behaviors and assessment of stimuli. The other conceptual model concept is Adaptive Modes; the relevant dimension of this concept is role function mode. The theory concepts are Roy Adaptation Model Assessment Tool Educational Program and Roy Adaptation Model Assessment Tool Utilization.

Roy Adaptation Model Assessment Tool Educational Program represents the assessment of behavior and assessment of stimuli dimensions of Roy's Adaptation Model Nursing Process. Roy Adaptation Model Assessment Tool Utilization represents the role function mode of Adaptive Modes.

Roy Adaptation Model Assessment Tool Educational Program is operationalized by the Roy Adaptation Model Assessment Tool Educational Program protocol. Kaur and Mahal (2012) cited Ryan's (2009) Integrated Theory of Health Behavior Change (ITHBC), which may be considered the methodological theory for their quality improvement project (see Appendix A).

Roy Adaptation Model Assessment Tool Utilization is measured by the investigator-developed Acceptability Scale and by the investigator-developed Like–Dislike Scale. Descriptive statistics (numbers, percents, means, standard deviations; see Appendix B) were used to analyze nurses' responses to the Acceptability Scale items and the Like–Dislike Scale items.

The CTE structure that was constructed from an interpretation of the content of Kaur and Mahal's (2012) journal article is illustrated in Figure 8.4. The non-relational and relational propositions for each component of the CTE structure are listed in Box 8.6.

BOX 8.6 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Quality Improvement Project

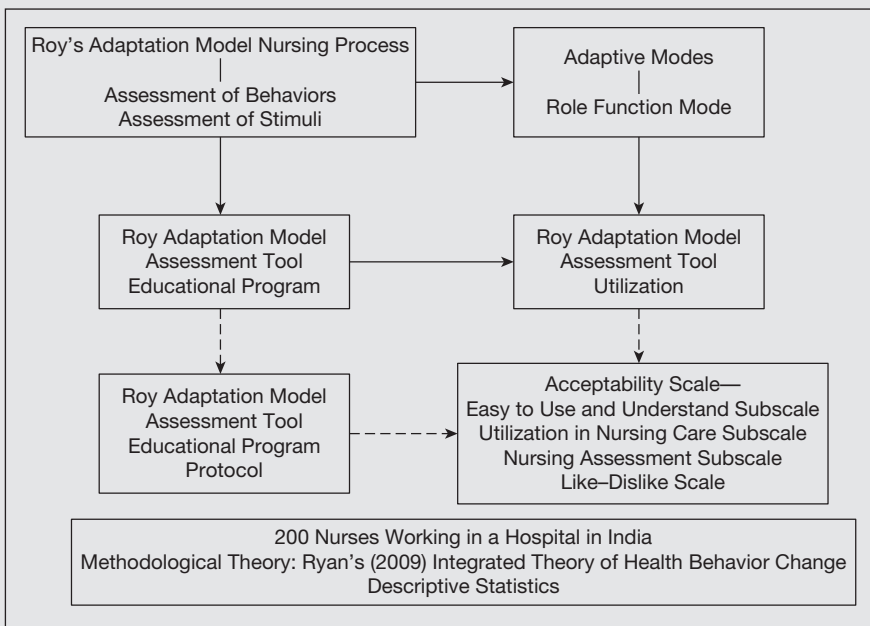


FIGURE 8.4 Conceptual–theoretical–empirical (CTE) structure for Roy's Adaptation Model quality improvement (QI) project—theory of effect of an educational program on utilization of Roy's Adaptation Model assessment tool.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Roy's Adaptation Model Nursing Process* is defined as the nursing process.
- The relevant dimensions of Roy's Adaptation Model Nursing Process are assessment of behaviors and assessment of stimuli.
 - *Assessment of behaviors* is defined as systematic collection of data about the behavior of the human adaptive system and judgment about the current state of the coping process and of adaptation in each adaptive mode—physiological/physical mode, self-concept/group identity mode, role function mode, and interdependence mode.
 - *Assessment of stimuli* is defined as identification of the internal and external focal and contextual stimuli that are influencing the behaviors of particular interest, in the order of priority established at the end of the assessment of behavior dimension of Roy's Adaptation Model Nursing Process.

(continued)

BOX 8.6 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Quality Improvement Project (continued)

- *Adaptive Modes* is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes.
- The relevant dimension of Adaptive Modes is the role function mode.
 - *Role function mode* is defined as behaviors—or activities—that are associated with ascribed and acquired roles (Roy, 2009).

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Roy Adaptation Model Assessment Tool Educational Program* is defined as teaching staff nurses about the content and use of the Roy Adaptation Model Assessment Tool.
- *Roy Adaptation Model Assessment Tool Utilization* is defined as staff nurses' experiences of use of the Roy Adaptation Model Assessment Tool.

The *non-relational propositions* for the *E* component of the CTE structure are:

- Roy Adaptation Model Assessment Tool Educational Program is operationalized by the Roy Adaptation Model Assessment Tool Educational Program protocol. "The Nursing assessment tool based on [the] Roy Adaptation [Model] was given to staff nurses working in selected hospitals. A lecture to staff nurses for the understanding of the concepts of Nursing Assessment tool based on [the] Roy Adaptation [Model] was given by researcher. Staff nurses were asked to use the assessment tool for their patients [with medical diagnoses of various cardiac diseases]. Nurses used the assessment tool for one month. Researcher was available to nurses everyday and clarified the doubts of staff nurses regarding the nursing assessment tool if they had any" (Kaur & Mahal, 2012, p. 133). Ryan's (2009) Integrated Theory of Health Behavior Change (ITHBC) apparently was used as the methodological theory for the QI project. The ITHBC "purports [that] health behavior change can be enhanced by fostering knowledge and beliefs, increasing self-regulation skills and abilities, and enhancing social facilitation" (Ryan, 2009, p. 164). Kaur and Mahal (2012) fostered staff nurses' knowledge and beliefs by providing the lecture about the assessment tool. Their availability to clarify doubts about the assessment tool increased the staff nurses' self-regulation skills and abilities and social facilitation.
- Roy Adaptation Model Assessment Tool Utilization is measured by the investigator-developed Acceptability Scale (Kaur & Mahal, 2012). The Acceptability Scale is made up of 21 items, each of which is rated on a 5-point Likert scale (see Appendix B) of 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. The items are arranged in three subscales—easy to use and understand (9 items), usefulness in nursing care (6 items), and nursing assessment (6 items).
- Roy Adaptation Model Assessment Tool Utilization also is measured by the investigator-developed Like–Dislike Scale (Kaur & Mahal, 2012). The Like–Dislike Scale contains one item addressing overall impression of use of the Roy Adaptation Model Assessment Tool. The item is rated on a 5-point scale of "I disliked it very much," "I disliked it," "I liked it somewhat," "I liked it," and "I liked it very much."

Source: Kaur and Mahal (2012).

APPLICATION TO NURSING RESEARCH

The guidelines for Roy's Adaptation Model nursing research are listed in Box 8.7.

BOX 8.7 Guidelines for Roy's Adaptation Model Research

The purpose of Roy's Adaptation Model–based basic nursing research is to understand and explain people adapting within their life situations, including descriptions of individual and group coping processes and adaptation to environmental stimuli and explanations of the relation between adaptation and health. The purpose of Roy's Adaptation Model–based clinical nursing research is to develop and test interventions designed to enhance positive life processes and patterns.

The phenomena to be studied include basic life processes and how nursing maintains or enhances adaptive responses or changes ineffective responses to adaptive responses. The particular foci of inquiry are focal and contextual stimuli; adaptation level; regulator and cognator coping processes in individuals and stabilizer and innovator coping processes in groups; and responses in the physiological/physical, self-concept/group identity, role function, and interdependence adaptive modes.

Within the context of basic nursing research, phenomena of particular interest are the person or group as an adaptive system, including coping processes (cognator and regulator processes for individuals, stabilizer and innovator processes for groups); stability of adaptive patterns; dynamics of evolving adaptive patterns; cultural and other influences on the development and interrelatedness of the adaptive modes; and adaptation related to health, including person–environment interaction and integration of the adaptive modes. Within the context of clinical nursing research, the phenomena of particular interest are changes in the effectiveness of coping processes; changes within and among the adaptive modes; and nursing interventions that promote adaptive behavioral responses, in times of transition, during changes in the environment, and during acute and chronic illness, injury, treatment, and threats from use of health technology.

The problems to be studied are those stemming from the attempts made by the human adaptive system to meet needs for physiological integrity (individuals), resource adequacy (groups), psychic and spiritual integrity (individuals), identity integrity (groups), social integrity (individuals), role clarity (groups), and relational integrity (individuals and groups). Particular interest is in situations in which adaptive behavioral responses are threatened by health technologies and behaviorally induced health problems.

Research participants may be individuals or groups who are well or who have acute or chronic medical conditions.

Descriptive, correlational, experimental, and/or mixed-methods research designs are required to study the phenomena encompassed by Roy's Adaptation Model. Qualitative and/or quantitative methods of data collection are appropriate. Data can be gathered in any health care setting in which human adaptive systems are found. Research instruments should reflect the unique focus and intent of Roy's Adaptation Model and include the instruments that have been directly derived from Roy's Adaptation Model.

(continued)

BOX 8.7 Guidelines for Roy's Adaptation Model Research (continued)

Data analysis techniques encompass qualitative content analysis and nonparametric and parametric statistical procedures, with an emphasis on statistical techniques that facilitate analysis of nonlinear and reciprocal relations.

Roy's Adaptation Model-based research enhances understanding of the human adaptive system and the role of nursing intervention in the promotion of adaptation.

Adapted from Fawcett and DeSanto-Madeya (2013).

A CTE Structure for a Systematic Literature Review

The journal article by Bowers and Wetsel (2014) is an example of a report of a systematic literature review. The purposes of their literature review were to “(1) describe the utilization of [music therapy] MT for symptom management, (2) discuss the efficacy of MT as an intervention, and (3) present the implications for [advanced practice nursing] APN education, practice, and research” (p. 232). Their special interest was people receiving palliative care or hospice care.

Bowers and Wetsel (2014) identified several inclusion and exclusion criteria for the literature review:

Inclusion criteria were that the articles were available in the English language, were peer reviewed, were limited to the adult population, related to those symptoms experienced by patients at end-of-life, and studied the use of music as an adjunct therapy. Exclusion criteria were that the articles were related to program development/evaluation, pediatrics, and mechanical injury symptoms and/or were of a nonresearch nature. (p. 232)

The inclusion and exclusion criteria were applied to a search of several electronic databases, including the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Academic Search Alumni Edition, Psychology and Behavioral Sciences Collection, Cochrane Database, Medline, Humanities, Health Source-Consumer Edition, and ProQuest and Allied Health. The search terms were “Music Therapy,” “Symptom Management,” and “Hospice.” The search included publications from 2006 to 2013, as well as “five articles published before 2006 . . . as they were found to be frequently referenced in the literature reviewed” (Bowers & Wetsel, 2014, p. 232). A total of 17 reports of research published as journal articles were reviewed.

The theory is the effects of music therapy on anxiety, pain, depression, and quality of life. The two conceptual model concepts are Roy's Adaptation Model Nursing Process and Adaptive Modes. The relevant dimension of Roy's Adaptation Model Nursing Process is intervention. The relevant dimension of

Adaptive Modes is self-concept mode; the two subdimensions of self-concept mode are physical self and personal self. The four theory concepts are Music Therapy, Pain, Anxiety, Depression, and Quality of Life, which were extracted from the review of the 17 journal articles.

The CTE structure that was constructed from an interpretation of the content of Bowers and Wetsel's (2014) journal article is illustrated in Figure 8.5. The non-relational propositions for each component of the CTE structure, along with a relational proposition for the T component, that were extracted from the literature review are listed in Box 8.8.

BOX 8.8 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Literature Review

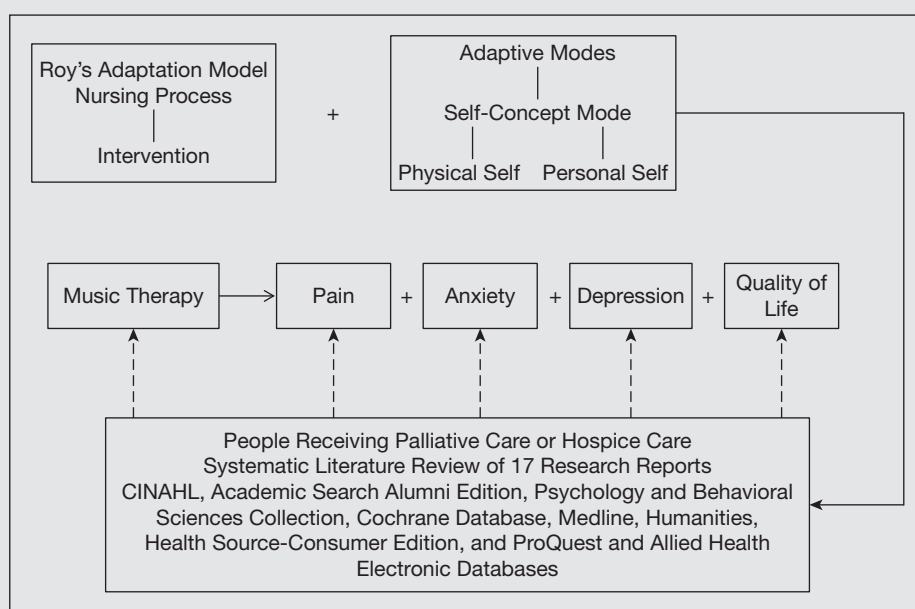


FIGURE 8.5 Conceptual–theoretical–empirical (CTE) structure for Roy's Adaptation Model literature review—theory of the effects of music therapy on anxiety, pain, depression, and quality of life.

CINAHL, Cumulative Index to Nursing and Allied Health Literature.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Roy's Adaptation Model Nursing Process* is defined as the nursing process.
- The relevant dimension of Roy's Adaptation Model Nursing Process is intervention.
 - *Intervention* is defined as management of stimuli using nursing approaches that have a high probability of changing stimuli or strengthening adaptive processes. Stimuli may be altered, increased, decreased, removed, or maintained.

(continued)

BOX 8.8 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Literature Review (*continued*)

- *Adaptive Modes* is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes.
- The relevant dimension of Adaptive Modes is self-concept mode.
 - *Self-concept mode* is defined as behavior “pertaining to the personal aspect of human systems” (Roy, 2009, p. 95).
 - The two subdimensions of self-concept mode are physical self and personal self.
 - *Physical self* is defined as “appraisal of one’s own physical being” (Roy, 2009, p. 323).
 - *Personal self* is defined as “appraisal of one’s own characteristics, expectations, values, and worth” (Roy, 2009, p. 323).

The *non-relational propositions* for the *T component* of the CTE structure are:

- *Music Therapy* is defined as “a positive stimulus to ‘[alleviate suffering] through the...treatment of human response[s]’ ” (American Nurses Association, as cited in Bowers & Wetsel, 2014, p. 232).
- *Pain* is defined as “an unpleasant sensory and emotional experience arising from actual or potential tissue damage” (International Association for the Study of Pain, as cited in Venes, 2013, p. 1716).
- *Anxiety* is defined as an “uneasy feeling of discomfort or dread...a feeling of apprehension...[the source of which] is often nonspecific or unknown” (Venes, 2013, p. 164).
- *Depression* is defined as a mood disorder “marked by loss of interest or pleasure in living” (Venes, 2013, p. 652).
- *Quality of Life* is defined as positive feelings of refreshment, energy, excitement, comfort, relaxation, connection, spirituality, enjoyment, and knowledge of available services, and negative feelings of fatigue, isolation, grief, and mood (Bowers & Wetsel, 2014).

The *non-relational proposition* for the *E component* of the CTE structure is:

- The concepts of Music Therapy, Pain, Anxiety, Depression, and Quality of Life were extracted from a systematic literature review of 17 research reports.

The *relational proposition* for the *T component* of the CTE structure is:

- Music Therapy has effects on Pain, Anxiety, Depression, and Quality of Life.

Source: Bowers and Wetsel (2014).

A CTE Structure for Instrument Development

Phillips's (2011) journal article is an example of a report of Roy's Adaptation Model instrument development. The purpose of his article was “to describe the development of an instrument to measure internalized stigma of HIV/AIDS that taps the dimensions of the self-concept as described in the Roy adaptation model” (p. 307).

The theory is internalized stigma beliefs. The conceptual model concept is Adaptive Modes. The relevant dimension of Adaptive Modes is self-concept, and the subdimensions of self-concept are physical self and personal self. The theory concept is Internalized Stigma Beliefs. The three dimensions of Internalized Stigma Beliefs are body image, self-ideal, and moral–ethical–spiritual self. Body image represents the self-concept subdimension of physical self. Self-ideal and moral–ethical–spiritual self represent the personal self subdimension. Internalized Stigma Beliefs and its three dimensions are measured by the Internalized Stigma of AIDS Tool (ISAT; Phillips, 2011; Phillips, Moneyham, & Tavakoli, 2011).

Phillips et al. (2011) reported that the ISAT items were generated by means of a literature review and interviews with persons living with HIV/AIDS. They explained that item analysis (see Appendix B) revealed that none of the 10 ISAT items should be deleted. They reported that the ISAT has adequate estimates of internal consistency reliability using Cronbach's alpha and construct validity using exploratory factor analysis. Inasmuch as the factor analysis revealed that the concept of Internalized Stigma Beliefs is unidimensional, the ISAT has no subscales. They also reported an adequate estimate of convergent validity, which they determined by calculating the correlation (r) between the ISAT and the Centers for Epidemiological Studies Depression Scale (Radloff, 1977; see Appendix B).

The CTE structure that was constructed from the content of Phillips's (2011) journal article is illustrated in Figure 8.6. The non-relational propositions for each component of the CTE structure are listed in Box 8.9.

A CTE Structure for Descriptive Qualitative Research

A journal article by de Queiroz Frazão, Bezerra, de Paiva, and de Carvalho Lira (2014) is an example of a report of Roy's Adaptation Model descriptive qualitative research. The purpose of their research was to "Identify the changes in the self-concept mode of Roy's [Adaptation] model in women undergoing hemodialysis" (p. 215).

The researchers used a simple descriptive research design (see Appendix A). They interviewed 178 patients who had a medical diagnosis of chronic kidney disease and were receiving hemodialysis at a clinic in Brazil. Their journal article is a report of the results of their analysis of interviews with 24 of the women patients.

The theory is feelings about self. The conceptual model concept is Adaptive Modes. The relevant dimension of the concept is self-concept mode and the subdimensions of self-concept mode are physical self and personal self. The theory concept is Feelings About Self. The two dimensions of Feeling About Self are low self-esteem and sexual dysfunction.

The theory concept and its two dimensions were discovered by means of content analysis (see Appendix B) of the women's responses to an interview. de Queiroz Frazão et al. (2014) did not provide any information about the content of the interview or the type of questions asked.

BOX 8.9 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Instrument Development

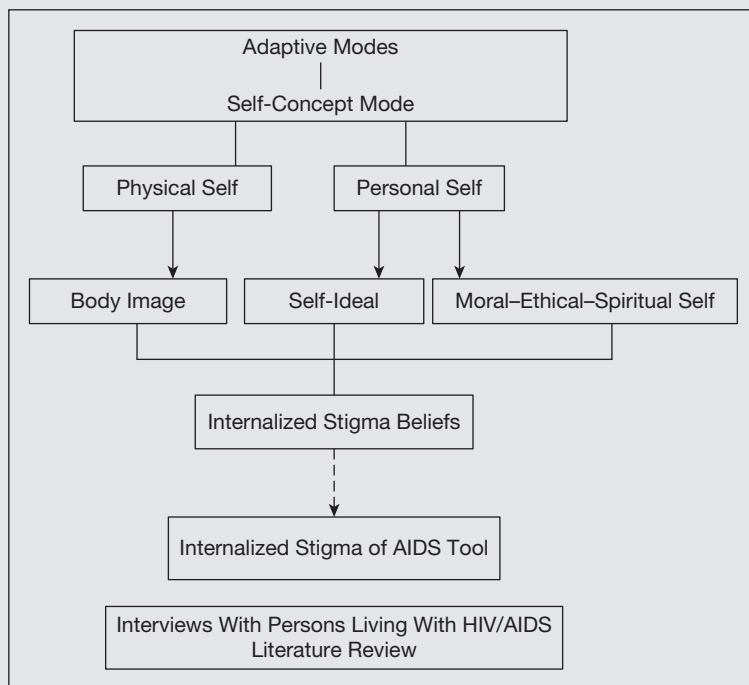


FIGURE 8.6 Conceptual–theoretical–empirical (CTE) (structure for Roy's Adaptation Model instrument development—theory of internalized stigma beliefs.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Adaptive Modes* is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes.
- The relevant dimension of *Adaptive Modes* is self-concept.
 - *Self-concept* is defined as “psychological and spiritual characteristics of the person. One’s self-concept consists of all the beliefs and feelings that one has formed about oneself” (Andrews & Roy, as cited in Phillips, 2011, pp. 307–308).
 - The two subdimensions of self-concept mode are physical self and personal self.
 - *Physical self* is defined as “the person’s appraisal of one’s own characteristics, physical attributes, functioning, sexuality, health–illness states, and appearance” (Roy & Andrews, as cited in Phillips, 2011, p. 308).
 - *Personal self* is defined as “an individual’s appraisal of one’s own characteristics, expectations, values, and worth” (Roy & Andrews, as cited in Phillips, 2011, p. 308).

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Internalized Stigma Beliefs* is defined as “Socially constructed views and negative stereotypes about HIV/AIDS and persons with HIV/AIDS that become incorporated into the self-concept” (Phillips et al., 2011, p. 360).

(continued)

BOX 8.9 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Instrument Development (continued)

- The three dimensions of Internalized Stigma are body image, self-ideal, and moral–ethical–spiritual self.
 - *Body image* is defined as “the level of satisfaction with appearance” (Roy & Andrews, as cited in Phillips, 2011, p. 308).
 - *Self-ideal* is defined as “what one would like to be or do related to what one is capable of being or doing” (Roy & Andrews, as cited in Phillips, 2011, p. 308).
 - *Moral–ethical–spiritual self* is defined as “that aspect of the personal self which includes a belief system and an evaluation of who one is in relation to the universe” (Roy, 2009, p. 323).

The *non-relational proposition* for the *E component* of the CTE structure is:

- Internalized Stigma Beliefs and its three dimensions are measured by the Internalized Stigma of AIDS Tool (ISAT; Phillips, 2011; Phillips et al., 2011). The ISAT is made up of 10 items that are rated on a 5-point scale of 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree. Body image is measured by two items; self-ideal, by five items; and moral–ethical–spiritual self, by three items.

Source: Phillips (2011).

The CTE structure that was constructed from the content of de Queiroz Frazão et al.'s journal article is illustrated in Figure 8.7. The non-relational propositions for each component of the CTE structure are listed in Box 8.10.

A CTE Structure for Correlational Research

Aktan's (2012) journal article is an example of a report of Roy's Adaptation Model correlational research. The purpose of her study was to examine the relations between social support and state and trait anxiety.

Aktan (2012) explained that she conducted a secondary analysis of data from a longitudinal study (see Appendix A) of 177 women during the third trimester of pregnancy and the sixth week postpartum. The study sample included

Healthy pregnant and postpartum women with no known prenatal or postnatal complications attending childbirth preparation classes or prenatal visits or who are members of or were referred by a local community women's organization. Pregnant women in their third trimester of gestation meeting the criteria for study comprised the sample of convenience and the sample was delimited to pregnant women who can read and comprehend English. (Aktan, 2012, p. 187)

BOX 8.10 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Descriptive Qualitative Research

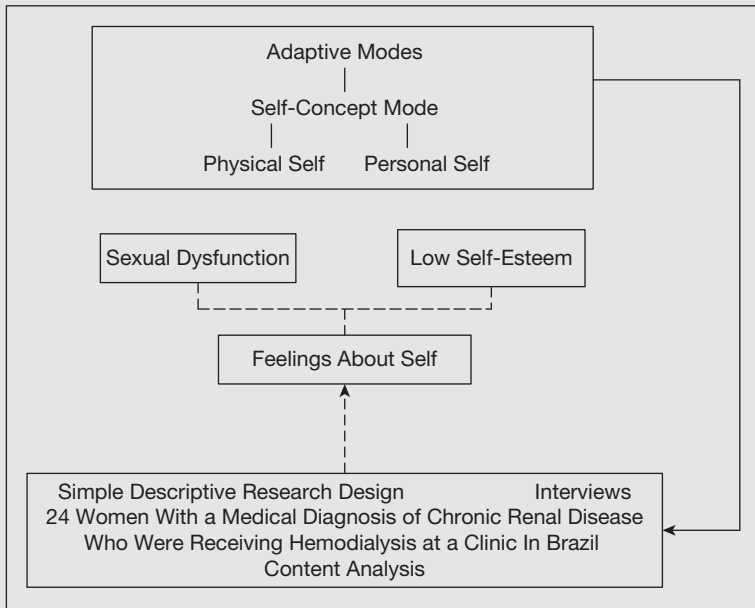


FIGURE 8.7 Conceptual–theoretical–empirical (CTE) structure for Roy's Adaptation Model descriptive qualitative research—theory of feelings about self.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Adaptive Modes* is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes (Roy, 2009).
- The relevant dimension of Adaptive Modes is self-concept mode.
 - *Self-concept mode* is defined as behavior “pertaining to the personal aspect of human systems” (Roy, 2009, p. 95).
 - The two subdimensions of self-concept mode are physical self and personal self.
 - *Physical self* is defined as “appraisal of one’s own physical being” (Roy, 2009, p. 323).
 - *Personal self* is defined as “appraisal of one’s own characteristics, expectations, values, and worth” (Roy, 2009, p. 323).

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Feelings About Self* is defined as “thoughts of women undergoing hemodialysis” (de Queiroz Frazão et al., 2014, p. 217).
- The two dimensions of Feelings About Self are low self-esteem and sexual dysfunction.

(continued)

BOX 8.10 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Descriptive Qualitative Research (continued)

- o *Low self-esteem* is defined as “the verbalization of negative feelings about the body; preoccupation with bodily changes; [and] thoughts about feelings of shame [and] feelings of sadness, fear, anxiety and insecurity” (de Queiroz Frazão et al., 2014, p. 218).
- o *Sexual dysfunction* is defined as “loss of libido” (de Queiroz Frazão et al., 2014, p. 218).

The *non-relational proposition* for the *E component* of the CTE structure is:

- Feelings About Self and its two dimensions—low self-esteem and sexual dysfunction—were generated from content analysis of interviews with 24 women who had a medical diagnosis of chronic kidney disease and were receiving hemodialysis at a clinic in Brazil.

Source: de Queiroz Frazão, Bezerra, de Paiva, and de Carvalho Lira (2014).

Aktan (2012) used a bivariate correlational research design (see Appendix A). Accordingly, she used the Pearson Product Moment Coefficient of Correlation (r ; see Appendix B) to analyze the data.

The theory is the relation between social support and anxiety. The conceptual model concept is Adaptive Modes. The two relevant dimensions of Adaptive Modes are interdependence mode and self-concept mode. The theory concepts are Social Support and Anxiety. The two dimensions of Anxiety are state anxiety and trait anxiety.

The interdependence mode dimension of Adaptive Modes is represented by Social Support, and the self-concept mode dimension is represented by Anxiety and its two dimensions. Social Support is measured by the Personal Resource Questionnaire (PRQ 85-Part 2; Brandt & Weinert, 1981). Anxiety is measured by the State Trait Anxiety Inventory (STAI; Spielberger, 1983). The state anxiety dimension of Anxiety is measured by the STAI S-Anxiety Scale, and the trait anxiety dimension is measured by the STAI T-Anxiety Scale.

The CTE structure that was constructed from the content of Aktan's (2012) journal article is illustrated in Figure 8.8. The non-relational and relational propositions for each component of the CTE structure are listed in Box 8.11.

A CTE Structure for Experimental Research

Reis, Walsh, Young-McCaughan, and Jones's (2013) journal article is a report of Roy's Adaptation Model experimental research. The purpose of their

BOX 8.11 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Correlational Research

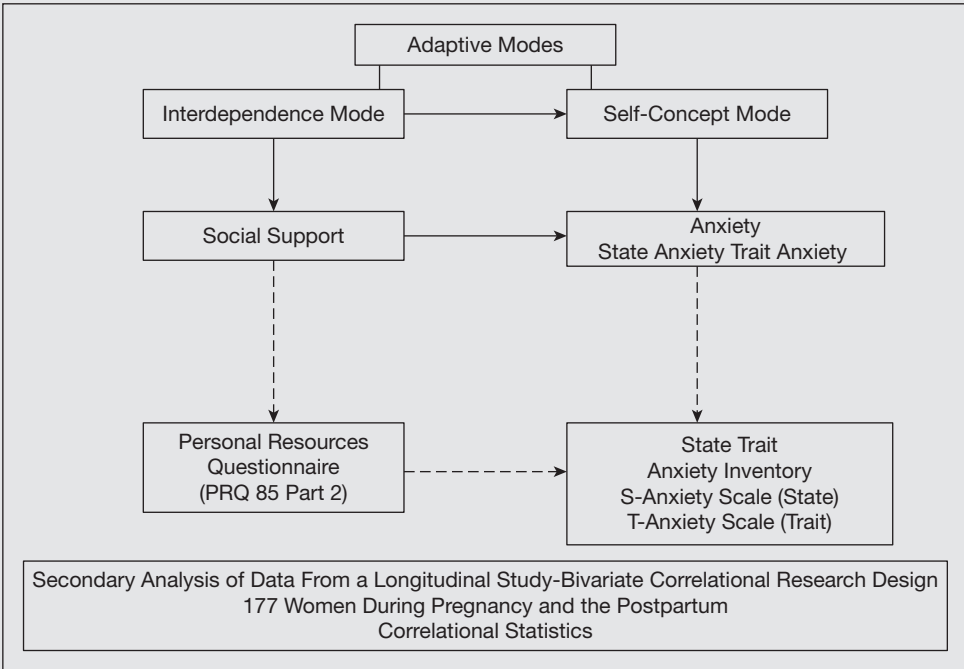


FIGURE 8.8 Conceptual–theoretical–empirical (CTE) structure for Roy's Adaptation Model correlational research—theory of relation between social support and anxiety.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- *Adaptive Modes* is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes (Roy, 2009).
- The relevant dimensions of Adaptive Modes are interdependence mode and self-concept mode.
 - *Interdependence Mode* is defined as “interactions related to the giving and receiving of love, respect, and value” (Roy, 2009, p. 45).
 - *Self-concept mode* is defined as behavior “pertaining to the personal aspect of human systems” (Roy, 2009, p. 95).

The *non-relational propositions* for the *T* component of the CTE structure are:

- *Social Support* is defined as “the six categories of relational provisions: attachment, social integration, the opportunity for nurturance, a reassurance of worth, a sense of reliable alliance, and the obtaining of guidance” (Weiss, as cited in Aktan, 2012, p. 184).

(continued)

BOX 8.11 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Correlational Research (continued)

- Anxiety is defined as “both subjective feelings of apprehension and activation of the autonomic nervous system and...as a nonobservable subjective experience that is unpleasant, uncomfortable, and characterized by feelings of dread, apprehension, and tension” (Spielberger, as cited in Aktan, 2012, p. 184).
- The two dimensions of anxiety are state anxiety and trait anxiety.
 - *State anxiety* is defined as “a transitory emotional state or condition that is characterized by subjective, consciously perceived feelings of tension and apprehension and heightened autonomic system activity” (Gaudry & Spielberger, as cited in Aktan, 2012, p. 184).
 - *Trait anxiety* is defined as “relatively stable individual differences in anxiety proneness or differences between people in the tendency to respond to situations perceived as threatening” (Gaudry & Spielberger, as cited in Aktan, 2012, p. 184).

The *non-relational propositions* for the *E component* of the CTE structure are:

- Social Support is measured by the Personal Resource Questionnaire (PRQ 85-Part 2; Brandt & Weinert, 1981). The PRQ 85-Part 2 contains 25 items, each of which is rated on a 7-point scale of 1 = strongly disagree to 7 = strongly agree. Each of the five subscales—intimacy, social integration, nurturance, worth, and assistance—includes five items.
- The state anxiety dimension of Anxiety is measured by the State Trait Anxiety Inventory S-Anxiety Scale (STAI S-Anxiety Scale; Spielberger, 1983). The STAI S-Anxiety Scale contains 20 items that are rated on a 4-point scale of 1 = not at all, 2 = somewhat, 3 = moderately so, and 4 = very much so.
- The trait anxiety dimension of Anxiety is measured by the State Trait Anxiety Inventory T-Anxiety Scale (STAI T-Anxiety Scale; Spielberger, 1983) The STAI T-Anxiety Scale contains 20 items that are rated on a 4-point scale of 1 = almost never, 2 = sometimes, 3 = often, and 4 = almost always.

The *relational propositions* for the *C and T components* of the CTE structure are:

- Adaptive Modes are interrelated.
- Therefore, Social Support is related to Anxiety.

The *relational proposition* for the *E component* of the CTE structure is:

- Scores for the PRQ are inversely related to scores for the STAI during pregnancy and the postpartum.

Source: Aktan (2012).

study was “to compare the effects of a 12-week Nia [exercise] program to usual care in women with breast cancer undergoing radiation therapy...[on] fatigue, [quality of life] QOL, aerobic capacity, and shoulder flexibility” (p. E375).

The study was conducted as a longitudinal experimental randomized controlled trial (see Appendix A). Reis et al. (2013) explained,

Randomization was stratified by stage of disease (II, III) and age (59 years or younger, 60 years and older) in an attempt to ensure equal representation of these groups in both interventions. Participants were assessed for fatigue, QOL, aerobic capacity, and shoulder flexibility at baseline, 6 weeks, and 12 weeks. Because some women required more than six weeks of radiation therapy, the timing of the three assessments was altered slightly to correspond to the start of radiation therapy, the completion of radiation therapy, and six weeks after completion. (p. E376)

The sample included 41 women with a medical diagnosis of breast cancer who were receiving radiation therapy. The experimental Nia exercise treatment group included 22 women, and the usual care treatment group included 19 women.

The theory is effects of Nia exercise or usual care on fatigue, quality of life, aerobic capacity, and shoulder flexibility. The conceptual model concepts are Roy's Adaptation Model Nursing Process and Adaptive Modes. The relevant dimension of Roy's Adaptation Model Nursing Process is intervention. Reis et al. (2013) identified the relevant dimensions of Adaptive Modes as the physiological mode and the psychosocial modes (self-concept, role function, interdependence). One theory concept is Type of Interventions; the two dimensions of this concept are Nia exercise and usual care. The other theory concepts are Fatigue, Quality of Life, Aerobic Capacity, and Shoulder Flexibility.

The intervention dimension of Roy's Adaptation Model Nursing Process is represented by Type of Intervention. The physiological mode dimension of Adaptive Modes is represented by Aerobic Capacity and Shoulder Flexibility. The psychosocial modes dimension of Adaptive Modes is represented by Fatigue and Quality of Life. Fatigue may be regarded as a body sensation, which is an aspect of the physical self subdimension of the self-concept mode.

The Nia exercise dimension of Type of Intervention is operationalized by the Nia exercise protocol, and the usual care dimension is operationalized by the usual care protocol. Both dimensions of Type of Intervention are also operationalized by an Exercise Log maintained by the research participants. Fatigue is measured by the Functional Assessment of Chronic Illness Therapy-Fatigue, Version 4 (FACIT-F, version 4; Yellen, Cella, Webster, Blendowski, & Kaplan, 1997; www.facit.org/FACITOrg/Questionnaires). Quality of Life is measured by the Functional Assessment of Cancer Therapy-General, Version 4 (FACT-G, version 4; Yellen et al., 1997; www.facit.org/FACITOrg/Questionnaires). Aerobic Capacity is measured by the Six-Minute Walk Test (6MWT; ATS Committee on Proficiency Standards for Clinical Pulmonary Function Laboratories, 2002). A goniometer is used to measure Shoulder Flexibility. Reis et al. (2013) stated that they used "Repeated-measures analysis of variance (ANOVA) and repeated-measured analysis of covariance [ANCOVA]...to assess change over time between the groups" (pp. 377–378; see Appendix B).

The CTE structure that was constructed from an interpretation of the content of Reis et al.'s (2013) journal article is illustrated in Figure 8.9. The non-relational and relational propositions for each component of the CTE structure are listed in Box 8.12.

BOX 8.12 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Experimental Research

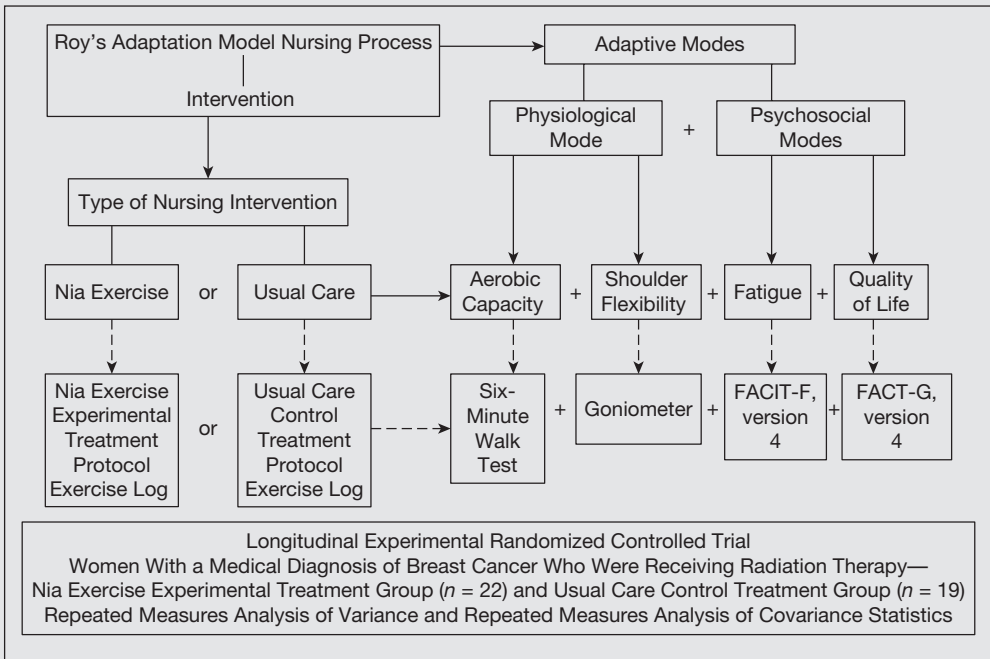


FIGURE 8.9 Conceptual–theoretical–empirical (CTE) structure for Roy's Adaptation Model experimental research—theory of effects of Nia exercise or usual care on fatigue, quality of life, aerobic capacity, and shoulder flexibility.

FACIT-F, Functional Assessment of Chronic Illness Therapy-Fatigue; FACT-G, Functional Assessment of Cancer Therapy-General.

The *non-relational propositions* for the *C* component of the conceptual–theoretical–empirical (CTE) structure are:

- Roy's Adaptation Model Nursing Process is defined as the nursing process.
- The relevant dimension is intervention.
 - *Intervention* is defined as management of stimuli using nursing approaches that have a high probability of changing stimuli or strengthening adaptive processes. Stimuli may be altered, increased, decreased, removed, or maintained.
- *Adaptive Modes* is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes.
- The relevant dimensions are physiological mode and psychosocial modes (Reis et al., 2013).

(continued)

BOX 8.12 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Experimental Research (continued)

- *Physiological mode* is defined as “the manifestation of the physiologic activities of all the cells, tissues, organs, and systems comprising the human body” (Roy, 2009, p. 90).
- *Psychosocial modes* encompass the self-concept mode, the role function mode, and the interdependence mode.
- *Self-concept mode* addresses behavior “pertaining to the personal aspect of human systems” (Roy, 2009, p. 95).
- *Role function mode* focuses on behaviors—or activities—that are associated with ascribed and acquired roles (Roy, 2009).
- *Interdependence mode* is concerned with “interactions related to the giving and receiving of love, respect, and value” (Roy, 2009, p. 45).

The *non-relational propositions* for the *T component* of the CTE structure are:

- *Type of Intervention* is defined as the experimental Nia exercise treatment or the control usual care treatment.
- The two dimensions of *Type of Intervention* are Nia exercise and usual care.
 - *Nia exercise* is defined as focusing “on the body, mind, and spirit. Nia is a cardiovascular and whole-body conditioning program that integrates five sensations: strength, flexibility, mobility, agility, and stability . . . Nia is based in nine movement forms: three martial arts (Tai Chi, Tae Kwon Do, and Aikido), three dance arts (jazz dance, modern dance, and Duncan dance), and three healing arts (yoga, the teachings of Moshe Feldenkrais, and the Alexander Technique). Collectively, those movements provide a flexible physical activity framework that allows individuals to direct movements according to their own needs. The practice of Nia can be gentle for individuals with a sedentary lifestyle or challenging for those with an active lifestyle” (Reis et al., 2013, p. E375).
 - *Usual care* is defined as usual exercise engaged in by study participants (Reis et al., 2013).
- *Fatigue* is defined as “an overwhelming, debilitating, and sustained sense of exhaustion that decreases one’s ability to carry out daily activities, including the ability to work effectively and to function at one’s usual level in family or other social roles” (Smith, Lai, & Cella, 2010, p. 359).
- *Quality of Life* is defined as a composite of the person’s perceptions of his or her physical, social or family, emotional, and functional well-being.
- *Aerobic Capacity* is defined as the functional capability of the cardiorespiratory system.
- *Shoulder Flexibility* is defined as extent of movement of the shoulder, including flexion and extension (Reis et al., 2013).

The *non-relational propositions* for the *E component* of the CTE structure are:

- The Nia exercise dimension of *Type of Intervention* is operationalized by the Nia exercise protocol. Reis et al. (2013) explained, “Participants received instructions and a demonstration about the Nia techniques and a Nia DVD for home use.

(continued)

BOX 8.12 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Experimental Research (continued)

Participants were advised to practice Nia 20 to 60 minutes at least three times per week for 12 weeks and record their activities in an exercise log. At 6 weeks and 12 weeks, participants met individually with the principal investigator and discussed variations in movement to enhance Nia practice" (p. E376).

- The usual care dimension of Type of Intervention is operationalized by the usual care protocol. Reis et al. (2013) explained, "Control group participants also met individually with the principal investigator. Participants were instructed to maintain their current exercise regimen and record their activities in an exercise log. At 6 weeks and 12 weeks, participants met individually with the principal investigator and discussed topics such as physical, emotional, mental, and spiritual well-being. Following the 12-week assessment, participants in the control group were given the opportunity to participate in a group Nia class (offered outside of the study) and were given the Nia DVD" (p. E376).
- Fatigue is measured by the Functional Assessment of Chronic Illness Therapy–Fatigue, Version 4 (FACIT-F, version 4; Yellen et al., 1997; www.facit.org/FACITOrg/Questionnaires). The FACIT-F contains 13 items that are rated on a 5-point scale of 0 = not at all, 1 = a little bit, 2 = somewhat, 3 = quite a bit, and 4 = very much.
- Quality of Life is measured by the Functional Assessment of Cancer Therapy–General, Version 4 (FACT-G, version 4; www.facit.org/FACITOrg/Questionnaires). The FACT-G includes 27 items that address four domains of quality of life—physical well-being (seven items), social/family well-being (seven items), emotional well-being (six items), and functional well-being (seven items). Each item is rated on a 5-point scale of 0 = not at all, 1 = a little bit, 2 = somewhat, 3 = quite a bit, and 4 = very much.
- Aerobic Capacity is measured by the Six-Minute Walk Test (6MWT; ATS Committee on Proficiency Standards for Clinical Pulmonary Function Laboratories, 2002). "Participants in the current study walked on a 100-foot tiled corridor that was marked at 10-foot intervals (every 3 meters). The starting line and turnaround point were marked with brightly colored tape. The 6MWT was self-paced; study participants were permitted to stop during the 6 minutes. The total number of laps walked plus any additional distance was rounded up to the nearest foot. If a participant was unable to walk for six minutes, the test was stopped and the reason documented on the data collection form" (Reis et al., 2013, p. E377).
- Shoulder Flexibility was measured as shoulder flexion and shoulder extension by means of a goniometer. "In the current study, shoulder flexion was measured by having participants stand with the palms of their hands facing the body and placing the goniometer over the acromion process with the stationary and moving arm of the goniometer aligned at the midline of the humerus. Keeping the stationary arm in place, participants raised their arm. Shoulder extension was measured by placing the goniometer over the acromion process, with the stationary and moving arms of the goniometer aligned at the midline of the humerus. Participants turned their heads away

(continued)

BOX 8.12 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Experimental Research (continued)

from the shoulder and kept their elbow slightly bent, lifting the arm as far as able. For both flexion and extension, the degree of movement was measured on the moving arm and recorded" (Reis et al., 2013, p. E377).

The *relational propositions* for the *C* and *T* components of the CTE structure are:

- Roy's Adaptation Model Nursing Process is related to Adaptive Modes.
- Therefore, Type of Intervention (Nia exercise or usual care) has effects on Fatigue, Quality of Life, Aerobic Capacity, and Shoulder Flexibility.

The *relational proposition* for the *E* component of the CTE structure is:

- Use of the Nia exercise protocol has more positive effects than use of the usual care protocol on scores for the FACIT-F, FACT-G, and the 6MWT, and for goniometer readings, such that the Nia exercise protocol group will have lower FACIT-F scores, higher FACT-G scores, better scores for the 6MWT, and better goniometer readings than the usual care protocol group after 12 weeks.

Source: Reis, Walsh, Young-McCaughan, and Jones (2013).

A CTE Structure for Mixed-Methods Research

Weiss, Fawcett, and Aber's (2009) journal article is an example of a report of Roy's Adaptation Model mixed-methods research (QUAL + QUAN). One purpose of their study was to examine the relations of type of cesarean birth, cultural identity, and parity to cesarean-delivered women's physical, emotional, functional, and social adaptation, and to their postpartum concerns and learning needs (henceforth referred to as P1). Another purpose of their study was to identify cesarean-delivered women's postpartum problems or needs and associated nursing interventions (henceforth referred to as P2).

The mixed-methods research design included collection of both qualitative data and quantitative data. All qualitative data were quantified. A descriptive comparative research design (see Appendix A) was used for the P1 portion of the study, and a simple descriptive research design (see Appendix A) was used for the P2 portion. The study is part of a research program that integrates faculty scholarship and undergraduate nursing student learning (Fawcett, Aber, & Weiss, 2003). Integration occurs as students gather clinical information from patients and, with the patients' consent, the faculty use the information as research data.

The sample included "233 English-speaking women at least 18 years old who gave birth by caesarean at urban hospitals in Midwestern and Northeastern

regions of the United States. The sample was limited to women who had an uncomplicated hospital course and were discharged by the fourth postpartum day with their infants" (Weiss et al., 2009, p. 2941). The clinical information was gathered via home visit or telephone interview by nursing students within 1 month following each woman's delivery, with a target of during the second week postpartum.

The theory is women's adaptation to cesarean birth. The conceptual model concepts are Stimuli, Adaptive Modes, and Roy's Adaptation Model Nursing Process. The two relevant dimensions of Stimuli are focal stimulus and contextual stimuli. The four dimensions of Adaptive Modes are physiological mode, self-concept mode, role function mode, and interdependence mode. The two relevant dimensions of Roy's Adaptation Model Nursing Process are assessment of stimuli and intervention.

The theory concepts are Type of Cesarean Birth, Cultural Identity, Parity, Physical Adaptation, Emotional Adaptation, Functional Adaptation, Social Adaptation, Postpartum Concerns, Learning Needs, Problems or Needs, and Recommended Interventions. The two dimensions of Type of Cesarean Birth are planned and unplanned. The two dimensions of Cultural Identity are race and ethnicity. The two dimensions of Parity are primipara and multipara. The four dimensions of Problems or Needs are physiological mode, self-concept mode, role function mode, and interdependence mode. The four dimensions of Recommended Interventions are health teaching, treatments and procedures, case management, and surveillance.

Type of Cesarean Birth and its two dimensions represent the focal stimulus dimension of Stimuli, and Cultural Identity and Parity and their dimensions represent the contextual stimuli dimension of Stimuli. Physical Adaptation, Emotional Adaptation, Functional Adaptation, Social Adaptation represent the physiological mode, self-concept mode, role function mode, and interdependence mode dimensions of Adaptive Modes, respectively. Postpartum Concerns represents all four dimensions of Adaptive Modes. Learning Needs represents the role function dimension of Adaptive Modes. Problems and Needs and its dimensions represent the assessment dimension of Roy's Adaptation Model Nursing Process. Recommended Interventions and its dimensions represent the intervention dimension of Roy's Adaptation Model Nursing Process.

Type of Cesarean Birth, Cultural Identity, and Parity and their dimensions are measured items on the investigator-developed Background Data Sheet (BDS). Physical Adaptation, Emotional Adaptation, Functional Adaptation, and Social Adaptation are measured by the investigator-developed Post-Cesarean Adaptation Interview Schedule (PCAIS). Postpartum Concerns is measured by the Maternal Concerns Questionnaire (MCQ; Bull, 1979, 1981; Moxon, 1989). Learning Needs is measured by the investigator-developed Postpartum Self and Infant Knowledge and Behaviors Inventory (PKBI). Problems or Needs are recorded on the investigator-developed Roy's Adaptation Model (RAM) Post-Discharge Assessment Record. Recommended Interventions are categorized using the Omaha System Intervention Scheme (Martin & Scheet, 1992).

For the P1 portion of their study, Weiss et al. (2009) used content analysis for the qualitative data and quantified those data using descriptive statistics (numbers, percents, means, standard deviations), *t*-tests, and analysis of variance statistics (see Appendix B). For the P2 portion of their study, Weiss et al. (2009) used content analysis (see Appendix B) to extract Problems or Needs and Recommended Interventions from the data obtained from the RAM Post-Discharge Assessment Record and the Omaha System Intervention Scheme. They used descriptive statistics (numbers, percents; see Appendix B) to quantify the two concepts and their dimensions.

The CTE structure that was constructed from the content of Weiss et al.'s (2009) journal article is illustrated in Figure 8.10. The non-relational and relational propositions for each component of the CTE structure are listed in Box 8.13, along with the relational propositions for the P1 portion of the study.

BOX 8.13 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Mixed-Methods Research

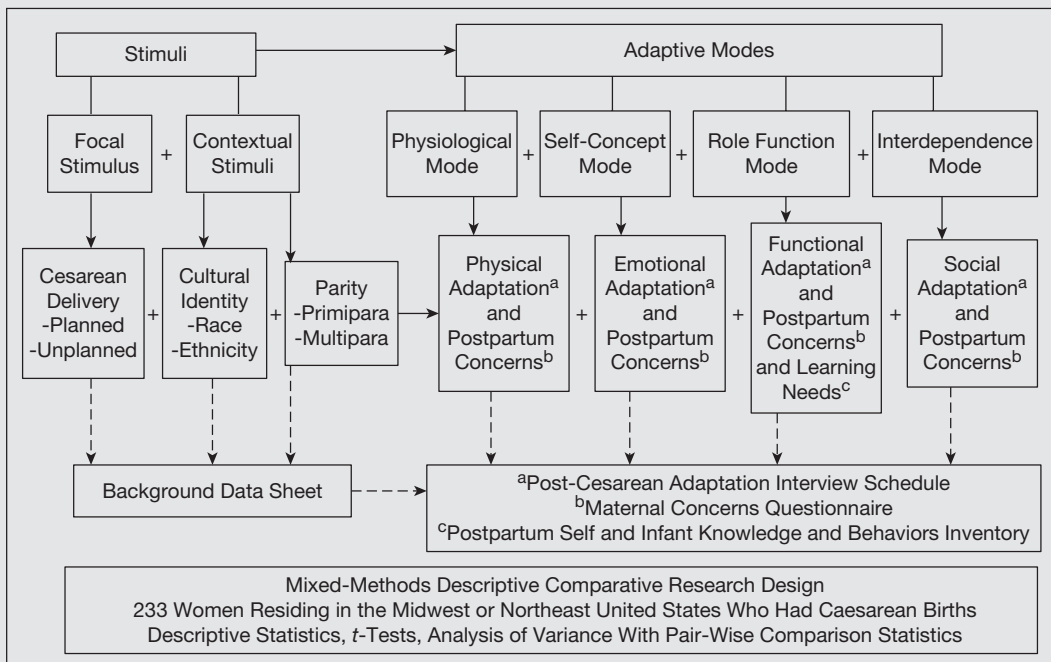


FIGURE 8.10 Conceptual–theoretical–empirical (CTE) structure for Roy's Adaptation Model mixed-methods research—theory of women's adaptation to cesarean birth—quantitative portion. (continued)

(continued)

BOX 8.13 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Mixed-Methods Research
(continued)

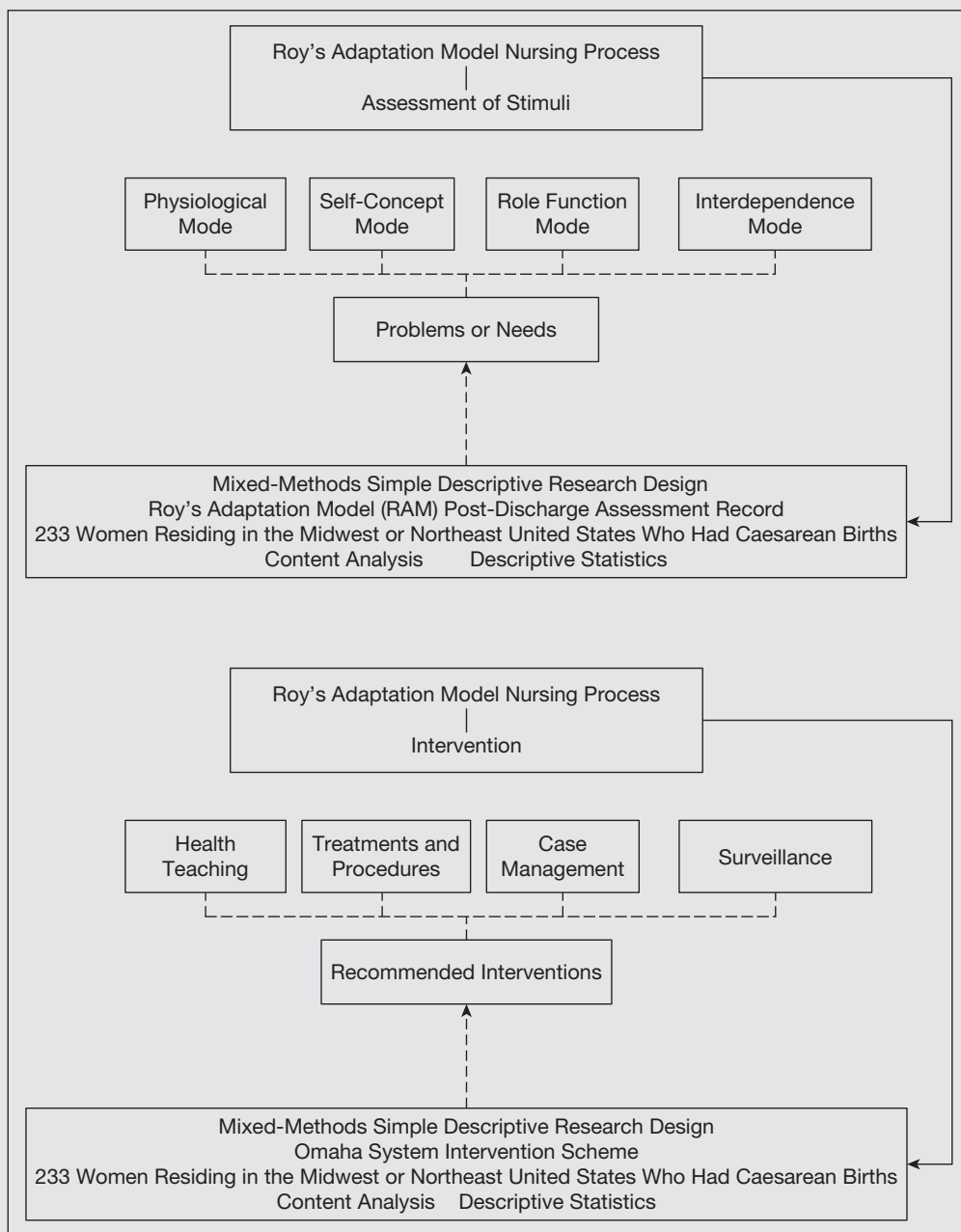


FIGURE 8.10 Qualitative portions. *(continued)*

(continued)

BOX 8.13 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Mixed-Methods Research (continued)

The *non-relational propositions* for the *C component* of the conceptual–theoretical–empirical (CTE) structure are:

- *Stimuli* is defined as factors in the internal (internal stimulus) and external environment (external stimulus) that provoke “a response, or more generally, the point of interaction of the human system and the environment” (Roy & Andrews, 1999, p. 32).
- The two dimensions of Stimuli are focal stimulus and contextual stimuli.
 - *Focal stimulus* is defined as the factor that is most influential in a person's adaptation (Weiss et al., 2009).
 - *Contextual stimuli* is defined as the total of other factors that influence adaptation (Weiss et al., 2009).
- *Adaptive Modes* is defined as ways in which human adaptive systems respond to stimuli from the environment that are processed through the coping processes.
- The four dimensions of Adaptive Modes are physiological mode, self-concept mode, role function mode, and interdependence mode.
 - *Physiological mode* is defined as the extent of physiological adaptation (Weiss et al., 2009).
 - *Self-concept mode* is defined as the person's perceptions of his or her physical and personal self (Weiss et al., 2009).
 - *Role function mode* is defined as the extent to which a person performs usual activities for different roles during his or her life (Weiss et al., 2009).
 - *Interdependence mode* is defined as the extent to which a person develops and maintains satisfactory and supportive relationships with family members and friends (Weiss et al., 2009).
- *Roy's Adaptation Model Nursing Process* is defined as the nursing process.
- The two relevant dimensions of Roy's Adaptation Model Nursing Process are assessment of stimuli and intervention.
 - *Assessment of stimuli* is defined as “identification of internal and external stimuli that are influencing... behaviors” (Roy & Andrews, 1999, p. 71).
 - *Intervention* is defined as actions that are “targeted to stimuli management” (Weiss et al., 2009, p. 2940). More specifically, intervention is selection of “nursing approaches... promote adaptation by changing stimuli or strengthening adaptive processes” (Roy & Andrews, 1999, p. 66).

The *non-relational propositions* for the *T component* of the CTE structure are:

- *Type of Cesarean Birth* is defined as the type of cesarean delivery experienced by a woman.
- The two dimensions of Type of Cesarean Birth are planned cesarean birth and unplanned cesarean birth.
 - *Planned cesarean birth* is defined as performance of a cesarean section planned during pregnancy, usually weeks or months before labor would begin (Weiss et al., 2009).

(continued)

BOX 8.13 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Mixed-Methods Research (continued)

- *Unplanned cesarean birth* is defined as performance of a cesarean section when labor was not going to result in a vaginal delivery (Weiss et al., 2009)
- *Cultural Identity* is defined as behavioral responses such as lifestyle, beliefs, and customs, acquired from and accepted by a community (Giger et al., as cited in Weiss et al., 2009).
- The two dimensions of Cultural Identity are race and ethnicity.
 - *Race* is defined as biological characteristics such as skin color or “a social grouping based on arbitrarily selected physical characteristics” (Outlaw, 1997, p. 134).
 - *Ethnicity* is defined as a person's awareness of belonging to a group that differs from other groups due to a shared past and continuing interests in symbolic markers such as culture, biology, or territory (Outlaw, 1997).
- *Parity* is defined as number of live children a woman has delivered.
- The two dimensions of Parity are primipara and multipara.
 - *Primipara* is defined as a woman who has given birth to one live child.
 - *Multipara* is defined as a woman who has given birth to two or more live children.
- *Physical Adaptation* is defined as women's reports of their physical feelings since hospital discharge following childbirth (Weiss et al., 2009).
- *Emotional Adaptation* is defined as women's reports of their emotional feelings since hospital discharge following childbirth (Weiss et al., 2009).
- *Functional Adaptation* is defined as women's reports of their adjustment to being a new mother (primiparas) or to a new infant at home (multiparas) (Weiss et al., 2009).
- *Social Adaptation* is defined as women's reports of their husband's or partner's adjustment to the infant (Weiss et al., 2009).
- *Postpartum Concerns* is defined as the woman's questions and/or expressions of worries or problems during the early postpartum period (Weiss et al., 2009).
- *Learning Needs* is defined as the woman's need and desire for information in the early postpartum period (Weiss et al., 2009).
- *Problems or Needs* is defined as women's actual, potential, or health promotion problem or need during the early postpartum period (Weiss et al., 2009).
- *Recommended Interventions* is defined as actions needed to address women's problems and needs during the early postpartum period, categorized as health teaching, treatments and procedures, case management, or surveillance (Weiss et al., 2009).

The *non-relational propositions* for the *E component* of the CTE structure are:

- Type of Cesarean Birth is measured by an item on the investigator-developed Background Data Sheet (BDS) asking for self-report of when the woman found out that she would have a cesarean birth (Weiss et al., 2009).
- Cultural Identity is measured by two items on the investigator-developed BDS. One item is the woman's self-report of her ethnicity as Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race; the

(continued)

BOX 8.13 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Mixed-Methods Research (continued)

other item is the woman's self-report of her race as American Indian or Alaska Native, Asian, Black, Native Hawaiian or Other Pacific Islander, White, or Other. Responses to the two items are combined and categorized as White, non-Hispanic; Black, non-Hispanic; Asian; and Hispanic (Weiss et al., 2009).

- Parity is measured by an item on the investigator-developed BDS asking for self-report of number of children; responses are categorized as primipara or multipara.
- Physical Adaptation, Emotional Adaptation, Functional Adaptation, and Social Adaptation are measured by content analysis and quantification of open-ended questions on the investigator-developed Post-Cesarean Adaptation Interview Schedule (PCAIS). Separate and combined PCAIS scores were calculated for Physical Adaptation, Emotional Adaptation, Functional Adaptation, and Social Adaptation by dividing adaptive responses by adaptive + ineffective responses and multiplying by 100, to yield an adaptive response proportion score, which can range from 0 to 100 (Weiss et al., 2009).
 - Physical Adaptation is measured by asking the woman how she has been feeling physically since hospital discharge (Weiss et al., 2009).
 - Emotional Adaptation is measured by asking the woman how she has been feeling emotionally since hospital discharge (Weiss et al., 2009).
 - Functional Adaptation is measured by asking the woman how she has been adjusting to motherhood (primipara) or how she has been adjusting to another baby (multipara) (Weiss et al., 2009).
 - Social Adaptation is measured by asking the woman how her husband/partner has been adjusting to the baby (Weiss et al., 2009).

Frequencies (*n*, %) were calculated for the results of the content analysis of women's responses to the questions.

- Postpartum Concerns is measured by the Maternal Concerns Questionnaire (MCQ; Bull, 1979, 1981; Moxon, 1989). The MCQ contains 50 items that are rated on a 4-point scale of 1 = "no concerns" to 4 = "much concern." Items were categorized according to the four Roy's Adaptation Model modes of adaptation, with 11 physiological mode items, 7 self-concept mode items, 17 role function mode items, and 15 interdependence mode items. Item wording was modified slightly for women who had a cesarean birth. (Weiss et al., 2009).
- Learning Needs is measured by the investigator-developed Postpartum Self and Infant Knowledge and Behaviors Inventory (PKBI). The PKBI includes 16 questions addressing the extent to which the woman acquired knowledge from a hospital discharge teaching program (Weiss et al., 2009). Responses to the questions are scored as 0 = "incorrect" or 1 = "correct."
- Problems or Needs is measured by each student nurse's identification of problems or needs in three priority areas according to the student's assessment of a woman while she was in a hospital as well as the student's post-discharge interview with the woman (Weiss et al., 2009). Each student recorded the identified problems or needs on the investigator-developed Roy's Adaptation Model (RAM) Post-Discharge

(continued)

BOX 8.13 An Example of a Conceptual–Theoretical–Empirical Structure for Roy's Adaptation Model Mixed-Methods Research (continued)

Assessment Record. Problems and Needs are categorized as actual, potential, or health promotion for each adaptive mode—physiological, self-concept, role function, and interdependence. Each category is quantified as a tally using frequency statistics (Weiss et al., 2009).

- Recommended Interventions are measured by each student nurse's identification of an action for each of the three priority problems or needs he or she had identified for a woman. The recommended interventions are categorized as health teaching, treatments and procedures, case management, or surveillance using the Omaha System Intervention Scheme (Martin & Scheet, 1992). Each category is quantified as a tally using frequency statistics (Weiss et al., 2009).

For the P1 portion of the study, the *relational propositions* for the *C* and *T* components of the CTE structure are:

- Stimuli are related to Adaptive Modes.
- Therefore, Type of Cesarean Birth, Cultural Identity, and Parity influence Physical Adaptation, Emotional Adaptation, Functional Adaptation, Social Adaptation, Postpartum Concerns, and Learning Needs.

For the postpartum concerns and learning needs (P1) portion of the study, the *relational proposition* for the *E* component of the CTE structure is:

- Women's self-reports for items on the BDS for Type of Cesarean Birth (categorized as planned or unplanned), Cultural Identity (categorized as White, non-Hispanic; Black, non-Hispanic; Asian; or Hispanic, and Parity (categorized as primipara or multipara) influence scores for the PCAIS, MCQ, and the PKBI.

Source: Weiss, Fawcett, and Aber (2009).

CONCLUSION

Roy's Adaptation Model is a distinctive, holistic perspective of individuals and groups as they adapt to the environment. Roy expressed her confidence that Roy's Adaptation Model "is compatible with futurists' views of the universe as progressing in structure, organization, and complexity" (Roy & Andrews, 1999, p. 34).

Roy's Adaptation Model has been applied extensively in nursing practice, research, education, and administration. The wide acceptance and application of the model is evident in the examples of its use as a guide for practice, quality improvement projects, and research given in this chapter. Especially noteworthy are the compendia of research guided by the model (Boston-Based Adaptation

Research Nursing Society, 1999) and middle-range theories derived from the model (Roy, 2014).

NOTE

1. Portions of this chapter are adapted from Fawcett, J., & DeSanto-Madeya, S. (2013). *Contemporary nursing knowledge: Analysis and evaluation of nursing models and theories* (3rd ed., Chapter 10). Philadelphia, PA: F. A. Davis, with permission.

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