

# Self-care agency: Conceptualizations and operationalizations

This article traces the interactive process between theory and research as it has been used to clarify the concept of self-care agency, a key concept in Orem's model of nursing. Theoretical constructions of self-care agency that have emerged in the work of Orem and the Nursing Development Conference Group are reviewed. Operational measures of self-care agency are described, particularly with regard to their underlying theoretical formulations. Factorial structures for some self-care agency instruments are related to the components of self-care agency in Orem's most recent conceptualization. Dimensions of self-care agency that are consistently supported by research studies of this phenomenon are identified.

**Hertha L. Gast, PhD, RN**  
*Assistant Professor*  
*Psychiatric Mental Health Nursing*

**Mary J. Denyes, PhD, RN**  
*Associate Professor*  
*Maternal Child Health Nursing*

**Jacquelyn C. Campbell, PhD, RN**  
*Associate Professor*  
*Community Health Nursing*  
*College of Nursing*  
*Wayne State University*  
*Detroit, Michigan*

**Donna L. Hartweg, MS, RN**  
*Associate Professor*  
*College of Nursing*  
*Illinois Wesleyan University*  
*Bloomington, Illinois*

**Darlene Schott-Baer, MS, RN**  
*Assistant Professor*  
*School of Nursing*  
*Oakland University*  
*Rochester, Michigan*

**Marjorie Isenberg, DNS, RN**  
*Associate Professor*  
*Medical Surgical Nursing*  
*College of Nursing*  
*Wayne State University*  
*Detroit, Michigan*

CLARITY WITH respect to the defining dimensions of concepts in a theory is critical to its ongoing development. Typically clarity is achieved through an interactive process in which theoretic analyses of concepts inform the operationalizations of these concepts. Findings from empirical studies, in turn, serve to confirm or further inform theoretic constructions.<sup>1</sup> This interactive process has been evident in the recent efforts to clarify the concept of self-care agency, a key concept in Orem's model of nursing.<sup>2</sup> As a result, defining dimensions of self-care agency are beginning to emerge. The purpose of this article is to trace this process by reviewing theoretic constructions of self-care agency that have emerged in the work of Orem<sup>2-6</sup> and the Nursing Development Conference Group (NDCG)<sup>7,8</sup> during the past decade, especially insofar as these constructions have influenced operationalizations of self-care agency during this time span. The implications of certain empirical findings for the

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current theoretical construction of self-care agency will also be examined. Ultimately a high degree of correspondence between the theoretical meanings and operational indicators of self-care agency is needed if the development of this popular theory of nursing<sup>9</sup> is to move forward.<sup>10</sup>

### OREM'S CONCEPTUALIZATION OF SELF-CARE AGENCY

Broadly defined, self-care agency refers to the capabilities of individuals that enable them to engage in self-care.<sup>5</sup> Self-care is defined as actions directed toward oneself or the environment in order to regulate one's functioning in the interest of one's life, integrated functioning, and well-being.<sup>2</sup>

The concept of self-care agency first appeared in the second edition of Orem's basic text.<sup>4</sup> It was, however, presaged in the first edition of this text by the notion of "power of agency"<sup>3(p35)</sup> and by a description of abilities needed to "initiate and persevere in self-care."<sup>3(p35)</sup> In 1979 the view of self-care agency as comprising three types of abilities appeared in the writings of the NDCG.<sup>8</sup> Although this view is incorporated to some extent into the third edition of Orem's basic text,<sup>2</sup> it was presented as a definitive view only in her most recent publications.<sup>5,6</sup> According to this view, self-care agency is a complex structure consisting of three types of abilities, which can be hierarchically arranged according to the degree to which they are foundational to one another (see Fig 1). Most foundational are abilities that come into play when individuals perform any type of deliberate actions, not just self-care activities. These foundational dis-

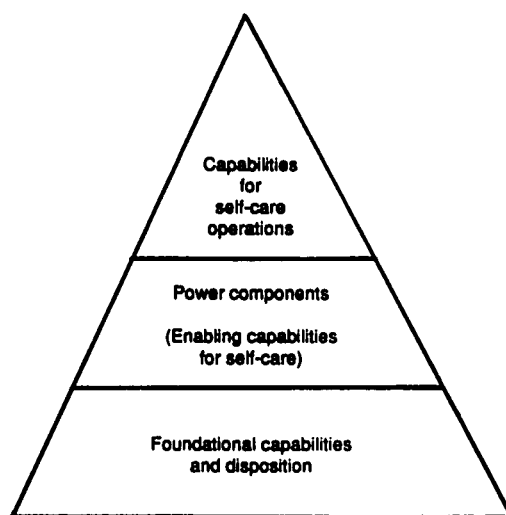


Fig 1. The substantive structure of self-care agency.

positions and traits consist of basic abilities pertaining to sensation, perception, memory, and orientation, for example. Somewhat less foundational are a set of enabling capabilities that relate specifically to engagement in self-care; these are designated as the "power components." Among the ten power components that were described by the NDCG<sup>8</sup> were a repertoire of self-care skills, the valuing of health, energy for self-care, and self-care knowledge (see Table 1). The most immediate abilities are those necessary to perform what Orem refers to as "self-care operations," of which three have been delineated: (1) estimative operations—investigating conditions and factors in self and environment that are significant for one's self-care; (2) transitional operations—making judgments and decisions about what one can, should, and will do to meet one's self-care requisites; and (3) productive operations—performing measures to meet one's self-care requisites.<sup>5,8</sup>

Table 1. Self-care agency power components<sup>a</sup> in relation to ESCA,<sup>11</sup> DSCAI,<sup>12</sup> PSCA,<sup>13</sup> and HrCS<sup>15</sup> factors

Power components	ESCA factors	DSCAI factors	PSCA factors	HrCS factors
1. Maintaining attention and requisite vigilance	Factor 4: Passivity	Factor 6: Attention to health		
2. Controlled use of the available physical energy	Factor 4: Passivity	Factor 4: Physical energy levels	Factor 3: Motor	
3. Control of the position of the body			Factor 3: Motor	
4. Reasoning within a self-care frame of reference	Factor 3: Knowledge and information seeking	Factor 1: Ego strength and health decision-making capability	Factor 1: Cognitive	Factor 3: Beliefs and perceptions about consequences of health
5. Motivation or goal orientation toward self-care	Factor 2: Initiative and responsibility	Factor 6: Attention to health	Factor 4: Motivation	Factor 2: Beliefs, attitudes, and interventions
6. Decision making about self-care		Factor 1: Ego strength and health decision-making capability	Factor 1: Cognitive	
7. Acquiring, retaining, and operationalizing technical knowledge about self-care	Factor 3: Knowledge and information seeking		Factor 1: Cognitive	

8. Repertoire of skills for self-care	Factor 3: Health and decision-making experience	Factor 5: Repertoire of skills for self-care
9. Ordering discrete self-care actions	Factor 1: Ego strength and decision-making capability	
10. Integrating self-care operations with other aspects of living	Factor 2: Relative valuing of health	Factor 1: Beliefs and attitudes
	Factor 1: Self-concept	
	Factor 1: Ego strength and health decision making	
	Factor 5: Feelings	

Key: ESCA = Exercise of Self-Care Agency scale; DSCAI = Denyes Self-Care Agency Instrument; PSCA = Perception of Self-Care Agency questionnaire; HrCS = Health-related Cognitive Structure questionnaire.

## OPERATIONALIZATIONS OF SELF-CARE AGENCY

As one would expect, operationalizations of self-care agency in the research literature over the past decade parallel the prevailing theoretical analyses during this time. The Kearney and Fleischer<sup>11</sup> instrument, which was the first operational measure of self-care agency to appear in the literature, was based on Kearney and Fleischer's own conceptual analysis. Subsequently Denyes<sup>12</sup> developed two instruments, one to measure self-care agency and one to measure self-care practices. The self-care agency instrument was based on a strengths-and-limitations analysis of self-care agency, in keeping with the early work of Orem.<sup>3</sup> After the NDCG<sup>8</sup> analysis became available, this instrument was also shown to be closely aligned with the power component aspect of self-care agency. Two additional instruments appeared in the literature after the NDCG analysis, both of which were clearly based on the power component analysis of self-care agency. Hanson and Bickel<sup>13</sup> developed an instrument explicitly to measure the power components. An instrument developed by Evers et al<sup>14</sup> purportedly measures the power components as they relate to productive self-care operations. Finally, two instruments were developed by Neves<sup>15</sup> that, although she did not propose either as a measure of self-care agency, have been viewed by some<sup>16</sup> as measures of power components as they pertain to self-care operations. Like Denyes,<sup>12</sup> Neves<sup>15</sup> differentiated self-care abilities (ie, self-care agency) from self-care actions, and one of her instruments was designed in part to measure self-care actions.

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*Kearney and Fleischer identified the following five dimensions of "exercise of self-care agency": (1) an attitude of responsibility for self, (2) motivation to care for self, (3) application of knowledge to self-care, (4) the valuing of health priorities, and (5) high self-esteem.*

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The seven instruments, along with theoretical constructs purportedly measured by each and sample items, are shown in Table 2. In the following section each instrument is described in further detail, with particular attention to conceptualizations of self-care agency.

### The Exercise of Self-Care Agency scale

The Exercise of Self-Care Agency (ESCA) scale was developed by Kearney and Fleischer.<sup>11</sup> Unfortunately, the authors' analysis of the concept of exercise of self-care agency is somewhat ambiguous. On the one hand, they argued that the exercise of self-care agency needs to be differentiated from agency itself because, for example, one's applications of knowledge about self-care may be different from one's fund of knowledge per se. On the other hand, they contended that the exercise of self-care agency can be considered to be a dispositional trait. Using an inductive approach in which students in one of their graduate-level nursing research courses were interviewed, Kearney and Fleischer identified the following five dimensions of "exercise of self-care agency": (1) an attitude of responsibility for self, (2) motivation to care for self, (3)

**Table 2.** Instruments, measured constructs, and sample items

<b>Instrument</b>	<b>Theoretical construct</b>	<b>Sample items</b>
Exercise of Self-Care Agency scale	Exercise of self-care agency	I would gladly give up some of my set ways if it meant improving my health.  I understand my body and how it functions.
Denyes Self-Care Agency Instrument	Self-care agency Power components Foundational capabilities and dispositions	How much experience have you had in making decisions about your health?  How able are you to talk about your feelings?
Denyes Self-Care Practice Instrument	Self-care General actions Actions specific to universal self-care requisites	What percent of the time do you take good care of your health?  What percent of the time do you do things to maintain or achieve a <i>balance</i> between rest and activity?
Perception of Self-Care Agency questionnaire	Self-care agency Power components	I can choose what is most important and least important when taking care of myself.  I am able to care for myself because I have the necessary skills.
Appraisal of Self-Care Agency scale	Self-care agency Power to perform the productive operations of self-care	As circumstances change, I make the needed adjustments to stay healthy.  I routinely take measures to insure the safety of myself and my family.
Health-related Cognitive Structure questionnaire	Beliefs, attitudes, intentions with respect to health care	I would see myself as healthy when I engage in health care actions that: (a) are good for me, such as eating right, exercising, etc; (b) are right for me, including seeking assistance from professionals whenever I feel the need; or (c) support me in reaching the goals I have for myself.
Health Self-Care questionnaire	Reasons for the performance or non-performance of self-care actions	I usually do/do not protect myself from becoming overtired because: (1) I have been told to/not to; (b) it seems sensible/not important to me; or (c) I have found it to be/not be beneficial to me.

application of knowledge to self-care, (4) the valuing of health priorities, and (5) high self-esteem. The ESCA scale was developed from these dimensions and consists of 43 items that are broadly representative of these dimensions; items are rated using a five-point Likert-type scale. A factor analysis of the ESCA scale, recently reported by Riesch and Hauck,<sup>17</sup> was based on data from a pooled sample ( $n = 506$ ) of pregnant women and their labor coaches, adolescents, and university faculty, staff, and students. Four factors were identified by this analysis: self-concept, initiative and responsibility, knowledge and information seeking, and passivity. These factors support, in part, the *a priori* dimensions of the ESCA scale.

Isenberg<sup>18</sup> conducted a theoretical analysis of the items of the ESCA scale using the three distinctions made in Orem's<sup>5,6</sup> most recent analysis of self-care agency (ie, dispositions and traits foundational to self-care, power components, and abilities to perform self-care operations). According to Isenberg, 20 of the 43 items of the ESCA scale can be classified as dispositions and traits foundational to self-care, 6 as power components, 10 as abilities pertaining to estimative or productive self-care operations, and 7 as irrelevant to the content domain of self-care agency. In this analysis Isenberg claimed that exercise of self-care agency is comparable to the productive-operations aspect of self-care agency. Moreover, she argued that since only 10 of the 43 items of the ESCA scale pertain to estimative or productive operations, this scale cannot be considered to be a valid measure of the exercise of self-care agency.

Kearney and Fleischer<sup>11</sup> studied the construct validity of the ESCA scale by hy-

pothesizing positive relationships between ESCA and internal locus of control, self-confidence, achievement, and intraception, and negative relationships between ESCA and abasement and lability. Criterion variables were measured using the Internal-External Locus of Control scale<sup>19</sup> and the Adjective Check.<sup>20</sup> Findings did not support the predicted relationship between ESCA and internal locus of control; however, predicted relationships between ESCA and achievement, self-confidence, and intraception were supported.

McBride<sup>21</sup> reported a construct validity study of the ESCA scale that was quite similar to the one conducted by Kearney and Fleischer.<sup>11</sup> Two samples were used: nursing students and adult diabetic patients. The Self-Directed Learning Readiness scale<sup>22</sup> was used as a criterion. For the nursing students, ESCA was found to be related to eight self-directed learning readiness factors: self-concept as an effective learner, initiative in learning, self-understanding, acceptance of responsibility for one's own learning, love of learning, calculation of risk, creativity, and the view of learning as a lifelong process. For the diabetic patients, ESCA was found to be related to three self-directed learning readiness factors: love of learning, creativity, and the view of learning as a lifelong process. McBride contended that these findings signal the need for caution in using the ESCA scale within clinical populations.

### **The Denyes Self-Care Agency Instrument**

The Denyes Self-Care Agency Instrument (DSCAI) was originally designed to measure self-care agency in adoles-

cents.<sup>12,23,24</sup> Instrument development was based on the early work of Orem<sup>3</sup> and the NDCG,<sup>7</sup> in which Orem noted that persons possess strengths and limitations in their self-care abilities and the NDCG defined self-care agency as the power to engage in estimative and productive operations of self-care. However, little other description of the self-care agency construct was then available. Drawing heavily upon work in human development, Denyes<sup>12</sup> developed a theoretical description of self-care agency comprising approximately 100 statements about strengths and limitations in persons' abilities to make decisions about and to accomplish self-care. She then developed and tested measurable indicators of strengths and limitations, ultimately producing the 35-item DSCAI. A response format of 0% to 100% is used in the DSCAI.

Denyes<sup>12</sup> factor-analyzed the DSCAI using her original sample of 161 adolescents from a public high school. The six factors identified by this analysis were: (1) ego strength and health decision-making capability; (2) relative valuing of health; (3) health knowledge and decision-making experience; (4) physical energy levels; (5) feelings; and (6) attention to health. Upon publication of the 1979 NDCG<sup>8</sup> work, Denyes presented a comparison of the six DSCAI factors and the ten power components theorized by the NDCG. This comparison is included in Table 1. Five components of self-care agency that were subsequently identified via a grounded theory approach<sup>25</sup> closely parallel, and thus provide support for the DSCAI factors. The five components identified by Hungelmann<sup>25</sup> were (1) self-esteem, (2) valuing, (3) knowledge, (4) problem solving in light of energy levels, and (5) belief systems.

Initial evidence of construct validity for the DSCAI was demonstrated by Denyes<sup>12</sup> in several ways, including support of hypothesized relationships between self-care agency and self-care practices and health status. Subsequent research has provided further support for the DSCAI's construct validity by demonstrating correlations of predicted direction and strength between self-care agency and the following: self-esteem, depression, physical symptoms, health problem-solving ability, health behavior, health status, and health problems.<sup>24,26,27</sup>

### **The Denyes Self-Care Practice Instrument**

Denyes<sup>12</sup> clearly differentiated self-care agency and self-care behaviors. Her second instrument, the Denyes Self-Care Practice Instrument (DSCPI), measures self-care actions taken by adolescents. A response format of 0% to 100% is used for this 22-item scale, which measures both general self-care actions (eg, following through on one's own health decisions) and specific actions that meet the universal self-care requisites (eg, eating a balanced diet, taking actions to ensure one's safety).

Evidence of construct validity for the DSCPI has been demonstrated through support for hypothesized relationships with self-care agency and with health in several adolescent samples.<sup>24</sup> Factor-analytic studies of the DSCPI have not been performed.

### **The Perception of Self-Care Agency questionnaire**

The Perception of Self-Care Agency (PSCA) questionnaire was developed by



Hanson and Bickel<sup>13</sup> as an explicit measure of the ten power components of self-care agency. It consists of 53 items to be rated using a five-point Likert-type scale. Hanson and Bickel factor-analyzed the PSCA questionnaire using a sample of 456 nonhospitalized adults. Although this analysis did not confirm the a priori dimensions of this questionnaire (ie, the ten power components), it identified the following four positive factors (1, 3, 4 and 5) and one negative factor (2): (1) cognitive abilities, such as decision making, reasoning, knowledge, and judgment; (2) cognitive limitations, such as forgetting; (3) movement abilities, such as endurance, flexibility, strength, and control of energy; (4) motivation; and (5) a repertoire of skills. Hanson and Bickel claimed that these factors include aspects of eight of the ten power components identified in the NDCG<sup>8</sup> analysis.

Weaver<sup>28</sup> recently reported a confirmatory LISREL factor analysis of the PSCA questionnaire using an independent sample of 462 nonhospitalized adults. This analysis failed to confirm either the five factors identified in the analysis done by Hanson and Bickel or the a priori dimensions of the questionnaire, the ten power components. Weaver concluded that these findings cast into doubt the validity of the PSCA questionnaire as a measure of the power components. More recently still, Cleveland<sup>29</sup> challenged Weaver's conclusion, citing Nunnally's<sup>30</sup> contention that confirmatory factor analysis is premature for a relatively new instrument. Cleveland concurred with Weaver, however, that the factor structure of the PSCA questionnaire may be unstable, at least across populations. In her own study of patients with obstructive pulmonary disease, Cleveland found "slight changes" in

the factor structure of the PSCA questionnaire from that ascertained by Hanson and Bickel.

### **The Appraisal of Self-Care Agency scale**

The Appraisal of Self-Care Agency (ASA) scale was developed by a group of US and Dutch researchers to measure one's power to perform the productive operations of self-care.<sup>14</sup> The analysis of self-care agency done by the NDCG<sup>8</sup> served as the conceptual basis for the development of this scale. Accordingly, self-care agency was viewed as the power of an individual to engage in operations that are essential to self-care. These researchers viewed power components in combination with self-care operations as the variables of self-care agency; that is, power components were viewed as specific abilities needed to perform the operations of self-care. Combinations of the ten power components and productive operations of self-care were used as the basis for generating items for this scale. The US and Dutch versions of the ASA scale both consist of 24 items to be rated using a five-point Likert-type scale. Although it is based on the ten power components, this scale has no explicit dimensions. Factor-analytic studies of the scale have not yet been reported.

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*The Appraisal of Self-Care Agency scale was developed by a group of US and Dutch researchers to measure one's power to perform the productive operations of self-care.*

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The construct validity of the ASA scale was studied by Evers<sup>31</sup> and by Isenberg.<sup>32</sup> In Evers' study of an elderly Dutch population, self-care agency as measured by the ASA scale was inversely related to social dependency. In Isenberg's study of patients who were anticipating coronary artery bypass surgery, self-care agency as measured by the ASA scale was positively related to health state.

### The Health-related Cognitive Structure and Health Self-Care questionnaires

Neves,<sup>15</sup> a researcher from Brazil, developed two instruments that pertain to the concept of self-care agency. The Health-related Cognitive Structure (HrCS) questionnaire measures beliefs, attitudes, and intentions as they pertain to health care, and the Health Self-Care (HSC) questionnaire measures reasons for performing or not performing common self-care actions. Neves contended that the nature of one's health-related beliefs, attitudes, intentions, and reasons for performing self-care actions is determined at least in part by one's level of cognitive development. Assessment using the HrCS and HSC questionnaires consists of determining a cognitive stage for the variables described in these questionnaires. Three stages are discriminated, based on the broad cognitive stages identified by Perry<sup>33</sup>: dualism, relativism, and commitment in relativism.

Neves<sup>15</sup> HrCS questionnaire assesses the cognitive stage for 19 health-related beliefs, attitudes, or intentions. A multiple-choice response format is used. Factor analysis of the HrCS questionnaire, using a pilot sample of 53 nonhospitalized adults, identi-

fied four types of beliefs, attitudes, and intentions: (1) beliefs and attitudes about health; (2) beliefs, attitudes, and intentions related to health self-care; (3) beliefs and perceptions about the consequences of health self-care actions; and (4) beliefs and attitudes about the health care system. Neves' second instrument, the HSC questionnaire, assesses the cognitive stage represented by reasons for performing or not performing 37 common self-care actions. A Likert-type response format is used.

Neves<sup>15</sup> developed the HrCS and the HSC questionnaires in the context of Orem's theory, but not as explicit measures of particular concepts within the theory. Nonetheless, Gast<sup>16</sup> has argued that health-related beliefs, attitudes, intentions, and reasons for performing self-care activities are indicators of the power to perform some of the operations of self-care. More specifically, health-related beliefs, attitudes, and intentions (as measured by the HrCS questionnaire) are indicators of at least two power components as they relate to the estimative operations of self-care: (1) reasoning within a self-care frame of reference, and (2) motivation or goal orientation in regard to self-care. Reasons regarding the performance of self-care, as measured by the HSC questionnaire, are indicators of the power component *decision making about self-care* as it relates to productive operations. Thus the HrCS and HSC questionnaires can be viewed as measures of these aspects of self-care agency.

Neves<sup>15</sup> HSC questionnaire, just described as a measure of the cognitive stage of an individual's reasons for performing common health care actions, also measures whether or not these actions are actually performed. Neves cited various sources for

the 37 items of the HSC questionnaire, including several existing health behavior-appraisal instruments. Items are rated using a performance/nonperformance distinction. Like the items of the DSCPI, those in the HSC questionnaire seem to be appropriate indicators of self-care that is directed toward universal requisites. Factor-analytic studies of the HSC questionnaire have not been reported to date.

## DISCUSSION AND IMPLICATIONS

Several observations can be made on the basis of this review that have implications for the ongoing task of clarifying the dimensions of self-care agency. First, the amount of activity devoted to this task in the past decade is impressive, in keeping with research and theory development traditions surrounding concepts of similar complexity, such as the concepts of ego, self-esteem, expectations, and attributions.

Second, with respect to Orem's<sup>5,6</sup> current three-part conceptualization of self-care agency, the operationalizations in this review measure aspects of some, but not all, components. This is not to suggest that these measures should be comprehensive. In fact, it is likely that the phenomenon of self-care agency is so complex and multidimensional that no single measure could capture it adequately.

Third, of the three components in Orem's current conceptualization of self-care agency, the power components are best represented by the operationalizations reviewed. Table 1 aligns the ten power components of the NDCG's analysis with the

factors identified for the four instruments that were factor-analyzed (ie, the ESCA, DSCAI, PSCA, and HrCS).<sup>8,11-15</sup> Considerable congruence among several of the power components and the dimensions identified by the factor analyses is evident. This is true even though the PSCA is the only instrument of these four that was developed expressly to reflect the power components. In spite of this congruence, however, none of the instruments was found to have a factorial structure that conforms to all ten power components. In particular, none of the instruments was found to have a factor to correspond with the tenth power component, integration of self-care operations with other aspects of living. The third power component, control of the position of the body, was found to be analogous only to a factor of the PSCA.

Fourth, foundational dispositions and traits are represented less adequately than the power components by the operationalizations reviewed. This is not surprising, in that none of the instruments was developed expressly to measure this aspect of self-care agency. Factors in these measures that could be classified as foundational dispositions or traits are self-concept or ego strength, values or basic beliefs about health, and feelings. Among the self-care agency instruments, the DSCAI encompasses more of what can be considered to be foundational abilities of self-care agency than do the others. Given Orem's view of this component of self-care agency (ie, abilities needed for actions generally, not just for self-care), operationalizations of aspects of this component are probably already available in the nursing and nonnursing literature.

Fifth, the most immediate abilities of self-care agency (ie, abilities pertaining to self-

care operations) are least clearly represented by the instruments reviewed. The ASA scale is said to measure power components as they relate to productive operations; however, since a factor structure for this instrument has not been determined, an alignment between this instrument and the three components of Orem's current view of self-care agency is premature.<sup>18</sup> The claim of the authors of the ASA scale that power components should be viewed in conjunction with operations tends to blur the distinction between them.<sup>18</sup> It suggests a single set of abilities rather than a set of abilities for self-care generally and a set of abilities specifically related to operations. Clearly there are differences of opinion about whether and how these two aspects of Orem's three-part view of self-care agency should be differentiated.

A sixth observation is that the distinction between self-care abilities and self-care actions is not always clear in some of the operationalizations reviewed. Two authors (Denyes<sup>12</sup> and Neves<sup>15</sup>) explicitly distinguished self-care abilities (ie, agency) from self-care actions in the instruments they developed. This contrast is less evident in the Kearney and Fleischer<sup>11</sup> notion of exercise of self-care agency and in the notion of power to perform productive operations that underlies the ASA scale.<sup>14</sup> The occurrence, in some of the instruments that purportedly measure self-care agency, of items that describe self-care actions seems to confound the distinction between abilities and actions as well.

Finally, with respect to clarifying the critical dimensions of self-care agency, the studies reviewed make a substantial contribution. At least some abilities, and perhaps the more important abilities of individuals

that enable them to engage in self-care, are repeatedly and consistently evinced by these studies. By and large, these studies indicate that to engage in self-care individuals must be mobile and have sufficient energy to give proper attention to self-care. They must also have a fund of knowledge about self-care, a repertoire of self-care skills, and the ability to reason, solve problems, and make decisions in the course of self-care. Finally, they must value health and be motivated to engage in self-care.

Most of the measures mentioned in this review have been, and are likely to continue to be, employed in research concerning self-care and the testing of Orem's model. Since the complex phenomenon of self-care agency is assessed only partially by each of these measures, researchers need to be clear about which dimensions are represented by the instruments that they choose to employ. Furthermore, conclusions about self-care agency that are drawn from the findings of studies should take into account the conceptual distinctions inherent in the operationalizations of this concept. Attention to these distinctions will contribute to the continuing development of Orem's model of nursing.

Theory development and instrument development are ongoing interactive processes. Theoretic and empirical studies to date have brought us closer to identifying critical dimensions of self-care agency and to establishing congruence between theoretic meanings and empirical indicators for this concept. The challenge now is to build upon this foundation through further theoretic explication, further testing and refinement of existing measures, development of new measures, and continued integrative evaluation.

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