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A Systematic Review and Integration of Concept Analyses of Self-Care and Related Concepts

Maria Matarese

Marzia Lommi

Maria G. De Marinis

Barbara Riegel

University of Pennsylvania, briegel@nursing.upenn.edu

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The guidelines for systematic literature reviews of the Joanna Briggs Institute were followed.

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The Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, PsycINFO, and EMBASE databases were searched for concept analyses published in the past 20 years.

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A total of 26 concept analyses were identified that had been published on self-care, self-care agency, self-monitoring, self-management, self-management support, symptom management, and self-efficacy. Differences and commonalities in the examined literature were identified, and a model was delineated, explaining the relations among the various concepts from the nursing perspective.

Conclusions

The healthcare literature has broadly described self-care and related concepts; however, consensus on the definitions remains beyond our reach and should not be expected, due to the different perspectives and paradigms from which the concepts are interpreted. From a nursing perspective, self-care can be considered a broad concept encompassing the other concepts, which describe more specific individual levels of activities and processes.

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Nurses are actively involved in disease management and self-management support as well as in promoting self-care in healthy and sick people. Referring to a model on self-care and related concepts could avoid misinterpretations in nursing practice, research, and policy.

Keywords

concept analysis, model self-care, synthesis, systematic review

Disciplines

Medical Humanities | Medicine and Health Sciences | Nursing | Preventive Medicine

A Systematic Review and Integration of Concept Analyses of Self-Care and Related Concepts

Maria Matarese, MNS, RN , Associate Professor, Research Unit of Nursing Science, Campus Bio-medico University of Rome, Rome, Italy

Marzia Lommi, PhD, RN, Adjunct Professor, University of Rome Tor Vergata, Rome, Italy

Maria Grazia De Marinis, MNS, RN, Professor, Research Unit of Nursing Science, Campus Bio-medico University of Rome, Rome, Italy

Barbara Riegel, PhD, RN, FAHA, FAAN, Professor and Edith Clemmer Steinbright Chair of Gerontology, School of Nursing, University of Pennsylvania, Philadelphia, PA, USA

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Correspondence

Maria Matarese, Campus Bio-medico University of Rome, School of Nursing, Via Alvaro del Portillo, 21, 00128 Rome, Italy.

E-mail: m.matarese@unicampus.it

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Introduction

The term self-care has been broadly used in healthcare literature, and many disciplines have provided definitions of self-care from their specific perspectives (Gantz, 1990; Godfrey et al., 2011; Lommi, Matarese, Alvaro, Piredda, & De Marinis, 2015). The use of different definitions and terms to indicate self-care can lead to misinterpretations among healthcare providers and researchers and could generate confusion in patients and caregivers. Wilkinson and Whitehead's review (2009) highlighted the historical, social, economic, and political factors that have influenced the current knowledge of self-care and concluded that a consensual definition is not identifiable. In addition, they pointed out that the concept of self-management is related to self-care and is often interpreted as a subset. Richard and Shea (2011) identified commonalities and differences among self-care and the concepts of self-management, self-monitoring, self-efficacy, and symptom management. Based on their review, they proposed a model describing the relationships among these concepts. A clear identification of similarities and differences among self-care and the other associated concepts could bring a more conscious use of the concepts to clinical practice, research, and policy (Godfrey et al., 2011; Richard & Shea, 2011).

In the past, many concept analyses of self-care and related concepts have been conducted, aimed at enhancing the understanding of their meanings. In fact, a concept analysis endeavors to produce a definition of a concept and to identify its attributes, antecedents, consequences, and boundaries (Morse, Hupcey, Mitcham, & Lenz, 1996). Concept analysis offers a broad investigation of a concept within the context of the examined literature; consequently, it can be considered a summary of the literature on the identified concept, which permits identifying common elements, gaps, and inconsistencies (Hupcey & Penrod, 2005). Thus, a systematic review of concept analyses can represent an appropriate method to describe and synthesize the relevant literature. The specific aims of this systematic review, which updates previous literature reviews, were (a) to identify and synthesize the literature on self-care and the related concepts that used a

concept analysis method, (b) to delineate the differences and commonalities among the concepts, and (c) based on the review results, to propose a model explaining the relations among the concepts.

Methods

A systematic literature review was carried out using the guidelines of the Joanna Briggs Institute for systematic reviews (Joanna Briggs Institute, 2014).

Search Method

A three-step search strategy was used to identify relevant literature. After an initial search undertaken on the PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases to identify the key words and index terms associated with self-care, a second search using the identified key words and terms was conducted on PubMed, CINAHL, EMBASE, and PsycINFO databases. The reference lists of all identified papers were searched to retrieve additional relevant studies. The search was limited to studies published in English, Spanish, Catalan, Portuguese, French, and Italian, and in peer-reviewed journals from January 1996 to July 2016. The search was limited to the literature published in the past 20 years to identify the most current literature produced on the concepts. Theses, dissertations, abstracts in proceedings, and other unpublished papers were excluded, as they are not subjected to a peer review process. The main key words searched were “self-care,” “self-management,” “self-care management,” “self-management support,” “self-monitoring,” “self-care monitoring,” “self-maintenance,” “self-care maintenance,” “symptom management,” “disease management,” “self-efficacy,” “self-care confidence,” “self-care agency,” “self-care ability,” AND “concept,” AND “analysis” OR “development” OR “clarification” OR “delineation” OR “synthesis.” A professional translator service was used to ensure the accurate comprehension of the abstract or full text retrieved in languages in which the reviewers were not fluent.

Inclusion and Exclusion Criteria

Phenomenon of interest. Self-care and the related concepts, including self-management, self-care management, self-monitoring, self-care monitoring, self-management support, self-maintenance, self-care maintenance, symptom management, disease management, self-efficacy, self-care confidence, self-care agency, and self-care ability, were taken into consideration.

Types of studies. Concept analyses using any kind of method were included. Review, discussion, and theoretical articles were excluded.

Context. Any cultural context was considered, as were any health conditions or healthcare settings in which self-care and the related concepts were analyzed.

Sampling frame. A 20-year period was used to ensure inclusion of all the relevant articles on the topics, as the concepts started to be broadly used in the medical literature at the end of 1990 (Godfrey et al., 2011; Lommi et al., 2015).

Data Extraction

The following data were extracted from each paper and summarized in a table: (a) authors and year of publication, (b) concept analysis method, (c) type of literature searched, (d) context, (e) antecedents, (f) attributes, (g) consequences, (h) concept definition, and (i) description of related and surrogate terms. A surrogate term is a term used to express the same concept, and a related term is a term that has some form of relationship with it (Morse et al., 1996). Two reviewers independently extracted the data from the identified studies; any discrepancy between reviewers was resolved through discussion. No quality assessment of the articles was performed, as no standardized instrument for quality appraisal of concept analysis work is available.

Data Analysis and Synthesis

Two reviewers separately read the extracted data, searching for commonalities and differences in antecedents, attributes, and consequences for each concept. In case of a concept analyzed in different clinical conditions or populations, common structural elements were extracted indicating the recurrence. The outcomes were classified as individual, clinical, and societal. Individual outcomes regard the subjective effects as perceived by the individual and are typically self-reported measures, such as quality of life, satisfaction, and empowerment. Clinical outcomes are objective indicators used by healthcare providers to measure the achievement of the results, such as modifications in physiological functions (i.e., glycaemia, blood pressure), psychological status (stress, anxiety), and behaviors. Societal outcomes are measures of the impact on healthcare systems, such as healthcare costs or use of healthcare services. The antecedents were classified as internal (inherent to the individual) and external (related to healthcare professionals, services, or community resources). The reviewers compared their findings, and any discrepancy was solved through discussion.

Findings

In total, 4,883 records were identified after removing duplicates. After reading titles and abstracts, 4,834 records were excluded. Among 49 articles that were retrieved in full text, 23 were excluded, as they were not concept analyses, or the concept analyzed was not related to self-care (**Table S1**). Of the remaining 26 articles, 3 analyzed the concept of self-care, 1 of self-care agency, 9 of self-management, 2 of self-monitoring, 2 of symptom management, 2 of self-management support, and 7 of self-efficacy. No concept analyses were found on the following concepts: self-care confidence, disease management, self-care management, self-care monitoring, self-maintenance, or self-care maintenance. All the articles were in English except for one written in French (Mailhot, Cossette, & Alderson, 2013). The identified concept analyses, published from 2002 to 2016, used the following concept analysis methods: Walker and Avant ($n = 10$), Rodgers ($n = 10$), hybrid ($n = 2$), Norris ($n = 1$), Weaver and Morse ($n = 1$), integrated approach ($n = 1$), and integrative review

($n = 1$). The concepts were analyzed in different populations, such as adolescents, adults, and older adults, and in different health conditions. We could not analyze the evolution of the concepts over time because for the same concept, different contexts, clinical conditions, and databases were analyzed in the identified articles. Study characteristics are reported in **Table S2**. The syntheses of the concept analyses for each concept are described in the next paragraphs and reported in **Table S3**.

Self-Care

We identified three articles that analyzed self-care in an older population (Høy, Wagner, & Hall, 2007), in nursing (Mailhot et al., 2013), and in the Islamic literature (Marzband & Zakavi, 2017).

Attributes. Self-care was seen as an activity, capability, and process. As an activity, self-care entails physical, mental, social, and spiritual activities, which are learned and consciously performed by an individual; these activities are under individual control, situation driven, and directed toward specific goals (Mailhot et al., 2013; Marzband & Zakavi, 2017). As a capability, self-care is an action capability directed toward universal needs, goals, and health problems. As a process, self-care is a health developmental process related to illness and well-being (Høy et al., 2007).

Antecedents. Self-care is influenced by internal factors (such as self-efficacy, learning, motivation, perception of imbalance, religious beliefs and precepts, commitment, and ability to make judgments; Høy et al., 2007; Marzband & Zakavi, 2017) and external factors, such as availability of social support and resources (Høy et al., 2007; Mailhot et al., 2013). In the Islamic religion, caring for oneself is a moral imperative and a right. In fact, the body has dignity and value since it is a tool and platform for spiritual perfection. Participation in collective religious rites, avoiding custom corruption, and pursuing good are considered self-care activities (Marzband & Zakavi, 2017).

Consequences. Self-care is performed to maintain health, life, and well-being, to reach

autonomy (Høy et al., 2007; Mailhot et al., 2013) and empowerment, to eliminate disease symptoms (Mailhot et al., 2013), to prevent and cope with disease, to obtain social support, and to achieve self-esteem, self-transcendence, and a meaningful life (Høy et al., 2007; Marzband & Zakavi, 2017).

Related and surrogate terms. The related terms are self-management, self-monitoring, and self-control. Self-control differs from self-care as it refers to the efforts to perform an obligated duty, regardless of any external control or commitment (Marzband & Zakavi, 2017).

Self-Care Agency

The concept of self-care agency, addressed in Sousa's article (2002), is defined as the capabilities of an individual to recognize his or her own needs and to assess personal and environmental resources.

Attributes. The identified attributes are cognitive, physical, and psychosocial capabilities to perform self-care action.

Antecedents. Self-care agency depends on the physical, cognitive, and psychosocial developmental levels of a person and on his or her needs and desires to perform self-care actions.

Consequences. The exercise of self-care agency leads to the performance of self-care actions aimed at reaching a specific goal.

Related and surrogated terms. The identified surrogate terms are self-care, power, self-care ability, and capabilities. Self-care entails two components, the practice of activities (self-care actions) and the capabilities to perform such actions (self-care agency), with self-care actions depending strictly on the person's capabilities. The related term self-efficacy differs from self-care agency as it is not general in nature but is related to specific activities. Further, it refers to the belief of an individual (judgment) in his or her capabilities to perform a specific action, whereas self-care agency refers to the individual's capabilities (power) to identify his or her needs, select the appropriate actions, and perform the activities (Sousa, 2002).

Self-Management

In the nine identified concept analyses, self-management was examined in chronic diseases (Blok, 2017; Mammen & Rhee, 2012; Miller, Lasiter, Ellis, & Buelow, 2015; Udlis, 2011) and in specific health conditions, such as prediabetes (Rothenberger, 2011) and diabetes (Schilling, Grey, & Knafl, 2002), epilepsy and diabetes (Unger & Buelow, 2009), hypertension (Balduino, Mantovani, Lacerda, & Meier, 2013), asthma (Mammen & Rhee, 2012), and postpartum weight (Ohlendorf, 2013).

Attributes. Although the definitions of self-management vary among the studies, due to different characteristics of the health conditions considered, some common attributes are recognizable. Self-management is seen as a process by which the individuals with a health problem intentionally perform a set of activities planned in partnership with healthcare professionals. The activities can be proactive and reactive (Balduino et al., 2013; Blok, 2017; Mammen & Rhee, 2012; Miller et al., 2015; Rothenberger, 2011; Schilling et al., 2002; Udlis, 2011). Proactive or preventive activities are aimed at maintaining a healthy lifestyle, preventing the occurrence of symptoms, evaluating physical and psychological changes, following the therapeutic regime, monitoring symptoms, and coping with the effects of a disease. Reactive or response activities are aimed at responding to an event or symptom, such as taking medications, treating the effect of a disease, or seeking help from healthcare providers.

Antecedents. The prerequisites of self-management most frequently identified are information and knowledge (Mammen & Rhee, 2012; Miller et al., 2015; Rothenberger, 2011; Schilling et al., 2002; Udlis, 2011), self-efficacy (Miller et al., 2015; Rothenberger, 2011; Udlis, 2011; Unger & Buelow, 2009), motivation (Miller et al., 2015; Schilling et al., 2002), and social support (Miller et al., 2015; Rothenberger, 2011; Schilling et al., 2002; Udlis, 2011). Moreover, self-management is influenced by the individual's developmental stage, as evidenced by studies that analyzed the concept in children and adolescents (Mammen & Rhee, 2012; Schilling et al., 2002): the

responsibility of disease management is initially assumed by parents, subsequently shared, and later assumed fully by adolescents.

Consequences. The clinical outcomes are modifications of physiological parameters (i.e., glycemia, blood pressure, body weight; Balduino et al., 2013; Ohlen-dorf, 2013; Rothenberger, 2011; Schilling et al., 2002). The individual outcomes are improvement of quality of life, self-worth, satisfaction, and empowerment, whereas societal outcomes are reduced healthcare expenditures derived from reduced use of healthcare services (Blok, 2017; Mammen & Rhee, 2012; Miller et al., 2015; Udliis, 2011).

Related and surrogate terms. Self-management surrogate terms are self-care, self-care management, management of treatment regimens, disease management, and illness management. The term self- management is more often found in medical literature, while self-care management is used in nursing literature (Balduino et al., 2013). Other terms closely related to self-management are self-monitoring, compliance, and adherence. Self-monitoring, in particular, is considered a sub dimension or attribute of self-management (Mammen & Rhee, 2012; Rothenberger, 2011). Adherence and compliance are considered components of or means for self-management; however, several researchers argue that self-management requires a shift from the traditional concepts of patient compliance and adherence to the new paradigm of mutual relationship or partnership of health- care professionals with the individuals with a chronic disease (Rothenberger, 2011; Udliis, 2011).

Self-Monitoring

The concept of self-monitoring was analyzed in the context of chronic diseases (Wilde & Garvin, 2007) and in type 2 diabetes mellitus (Song & Lipman, 2008). It was defined as the awareness, measurement, and interpretation of signs and symptoms (Wilde & Garvin, 2007), and the response to disease manifestations (Song & Lipman, 2008).

Attributes. Self-monitoring characteristics are awareness of symptoms, and measurement,

recording, interpretation, and response to signs and symptoms (Song & Lipman, 2008).

Antecedents. To perform self-monitoring, knowledge about the manifestations of a disease, skills in detecting variations of health status and measurements, skills in problem solving, and the ability to set goals are required (Song & Lipman, 2008; Wilde & Garvin, 2007).

Consequences. Self-monitoring leads to improvements in self-management, control of symptoms and signs of a disease, and improved quality of life.

Related and surrogate terms. Self-monitoring is related to the terms of self-management, symptom management, self-care, self-regulation (Wilde & Garvin, 2007), self-care maintenance, and self-care management (Song & Lipman, 2008). The term self-regulation is seen as a broader construct that includes self-monitoring (Wilde & Garvin, 2007). Self-monitoring is also seen as a component of self-management or symptom management. Self-care is described as a component of self-management or used as a synonym. According to some researchers, self-care differs from self-management, as self-care focuses on autonomous health/illness-related activities initiated by people without the need for the assistance of healthcare providers (Wilde & Garvin, 2007). Other researchers consider self-care to be a broad and multidimensional construct (Song & Lipman, 2008). Self-care maintenance refers to routine health behaviors, daily symptom monitoring, and treatment adherence, whereas self-care management entails symptom recognition, treatment, and treatment evaluation (Song & Lipman, 2008).

Symptom Management

Two concept analyses described symptom management in cancer (Fu, Le Mone, & McDaniel, 2004) and pain management in older people (Stewart, Schofield, Elliott, Torrance, & Leveille, 2014). Symptom management is defined as a dynamic and multidimensional process by which an individual intentionally performs activities by himself or herself, or others perform such activities, to relieve or decrease the distress derived from the perception of a symptom (Fu et al., 2004).

Attributes. Symptom management entails a collaborative relationship between an individual and the health-care providers, who give information and support in treatment choices. The level of involvement of the individual in treatment decisions and in performing activities can vary, depending, for example, on the individual's age or on the presence of multimorbidity (Stewart et al., 2014).

Antecedents. Symptom management requires self-awareness of the need, disposition, and ability to manage symptoms, and support from healthcare providers and family (Stewart et al., 2014).

Consequences. At the individual level, symptom management leads to relief or reduction of the symptoms, prevention of symptom occurrence (Fu et al., 2004), improved performance in daily activities, and better quality of life. At the societal level, it leads to reduction in the use of healthcare resources (Stewart et al., 2014).

Related and surrogate terms. The related terms are self-monitoring, self-care, self-help, self-regulation, self-treatment, and coping. Symptom management requires the ability of an individual to recognize and interpret the symptoms before treatment. For this reason, it can be considered an element of self-management, focused on the management of disease symptoms. In addition, symptom management differs from the other concepts, as healthcare providers can also perform it. Coping strategies are considered the means used by an individual to manage the symptoms (Stewart et al., 2014).

Self-Management Support

Two studies addressed the concept of self-management support in chronic illnesses (Kawi, 2012) and in palliative care (Johnston, Rogerson, Macijauskiene, Blaževičienė, & Cholewka, 2014). It encompasses collaborative approaches directed at improving chronic illness outcomes with the involvement of healthcare professionals and healthcare organizations together with the patients (Kawi, 2012): patients make decisions and perform behaviors to improve their health; healthcare professionals provide support to help patients understand their role in managing the disease,

making informed decisions about care and engaging in wellness-oriented behaviors; and healthcare organizations provide the infrastructure and resources needed for the patient to self-manage the disease.

Attributes. As self-management support involves three components, different attributes can be identified at the patient, healthcare provider, and organizational levels. The patient is considered a partner in identifying and prioritizing needs, setting goals, and planning actions with participatory decision-making. To support patients, healthcare providers are required to possess adequate knowledge, communication skills, cultural sensitivity, and attention to disparities (Kawi, 2012). Finally, the healthcare organization must use an organized system with a multidisciplinary team approach to provide instrumental and emotional support to increase the patient's ability to self-manage (Kawi, 2012). In palliative care, nurses support patients and their families by helping them maintain normality and independence as long as possible, teaching physical and emotional self-care strategies, and preparing them for death (Johnston et al., 2014).

Antecedents. Self-management support is activated when the patient, or a member of the healthcare team, identifies a need to manage a chronic disease (Kawi, 2012). In the context of palliative care, nurses are required to possess appropriate skills, knowledge, and expertise, to be able to work in teams, and to refer to other healthcare providers or support services when needed (Johnston et al., 2014).

Consequences. Self-management support permits patients to control symptoms, change behaviors, increase their self-management skills, achieve satisfaction (Kawi, 2012), feel cared for, and have their needs met (Johnston et al., 2014). At the healthcare provider level, it leads to satisfaction for the care provided. At the organizational level, it contributes to improving quality of care and reducing healthcare costs (Kawi, 2012).

Related and surrogate terms. Surrogate terms are not identified, whereas related terms are partnership, collaborative management, and coordinated care (Johnston et al., 2014).

Self-Efficacy

Seven articles analyzed the concept in general (Zulkosky, 2009), in self-care (Eller, Lev, Yuan, & Watkins, 2018), in health promotion (Asawachaisuwikrom, 2002), in smoking cessation (Heale & Griffin, 2009), in older people with diabetes (Liu, 2012), in the prevention of sexual risk behaviors (Jenkins, 2015), and in promotion of physical activities (Voskuil & Robbins, 2015). All the definitions provided in the articles were derived from Bandura's social cognitive theory (1977). Self-efficacy is defined as the person's perception of or confidence in his or her capabilities to perform specific actions for preventing or treating health conditions.

Attributes. Characteristics of self-efficacy are, for example, cognitive and affective processes (Liu, 2012; Voskuil & Robbins, 2015; Zulkosky, 2009), locus of control (Zulkosky, 2009), motivation to perform a task (Heale & Griffin, 2009; Jenkins, 2015), and self-appraisal (Voskuil & Robbins, 2015).

Antecedents. Self-efficacy is influenced by previous mastery experiences, vicarious experiences, verbal persuasion or social influence, and physiological and affective states (Asawachaisuwikrom, 2002; Heale & Griffin, 2009; Jenkins, 2015; Liu, 2012; Voskuil & Robbins, 2015; Zulkosky, 2009). Other antecedents identified are self-confidence, values, beliefs, and spirituality (Eller et al., 2018). External factors, such as family support and availability of resources, can also influence a person's self-efficacy.

Consequences. Individual outcomes are, for example, improved quality of life, successful coping strategies, physical and mental health, increased level of confidence, and attainment of goals (Asawachaisuwikrom, 2002; Eller et al., 2018; Zulkosky, 2009). Clinical outcomes are engagement in the desired health behaviors, disease management and prevention, and improved physical functions (Heale & Griffin, 2009; Liu, 2012). Societal outcomes entail increased use of community resources and social support (Eller et al., 2018; Jenkins, 2015).

Related and surrogate terms. A surrogate term is perceived self-efficacy: as the term perceived is

implied in the definition of self-efficacy, the term self-efficacy is preferred to perceived self-efficacy (Zulkosky, 2009). Related terms of self-efficacy are self-esteem, self-confidence, locus of control, competence, and motivation. Both self-esteem and self-confidence refer to personal characteristics of an individual, and they have a stable influence on his or her behaviors. Instead, self-efficacy is situation specific and task oriented. Thus, self-esteem refers to a global feeling of self-worth or self-value of a person, whereas self-efficacy regards the judgment of being able to accomplish a specific goal (Zulkosky, 2009). Locus of control refers to the person's belief regarding the determination to achieve a result (Asawachaisuwikrom, 2002; Zulkosky, 2009). People with an internal locus of control believe that their outcomes derive from their actions, while people with an external locus of control believe that their results are controlled by external forces (Zulkosky, 2009). Competence captures one dimension of self-efficacy, as it considers the personal evaluation of capability but does not include the dimension of power to select specific behaviors, despite barriers (Voskuil & Robbins, 2015). Motivation is a required component of self-efficacy, but the motivation to perform a behavior does not consider a person's level of confidence to attain a goal (Heale & Griffin, 2009).

Discussion

We identified 26 concept analyses on self-care and associated concepts, with most of the articles ($n = 14$) published in the past 5 years, showing the growing interest of researchers in these concepts. No concept analyses were identified addressing self-care confidence, self-maintenance, self-care maintenance, self-care management, self-care monitoring, or disease management. The concept of self-care confidence was initially identified by Riegel and colleagues (2004) as a contributor to self-care in the situation-specific theory of self-care in heart failure; later, self-care confidence was considered as a moderator or a mediator between self-care and its effects (Riegel & Dickson, 2008). In this theory, self-care confidence is interpretable as a synonym of self-efficacy, since it was defined as the confidence of an individual in his or her ability to perform specific self-care

action. The concept of self-care maintenance was first used in the situation-specific theory of self-care in heart failure (Riegel et al., 2004). Subsequently, self-care maintenance, together with self-care monitoring and self-care management, formed the three dimensions of self-care in the middle-range theory of self-care of chronic illness (Riegel, Jaarsma, & Strömberg, 2012). In healthy individuals, self-care focuses on self-improvement, but in people with chronic illness most of the self-care maintenance behaviors reflect adherence to the advice of healthcare providers regarding the treatment plan and a healthy lifestyle (Riegel et al., 2012).

Although we did not find any concept analysis on disease management, this term is often used in the context of chronic diseases. The absence of the term self places the concept in the area of responsibility of the health professionals and the healthcare system (Richard & Shea, 2011).

In our review, many commonalities among examined concepts were identified, illustrating their close relationship and confirming the difficulties identified previously in the literature to delineate the concepts (Richard & Shea, 2011). In fact, a well-developed concept should have clear, recognized characteristics, definite antecedents, outcomes, and demarcated boundaries that distinguish it from other concepts (Morse et al., 1996). Our review identified common general outcomes for many relevant concepts, such as improvement of quality of life, maintenance of health, life, and well-being, and reduction of healthcare costs. Some concepts had other concepts as outcomes; for example, self-management was an outcome of self-monitoring and self-management support, and self-care an outcome of self-care agency and self-monitoring. Moreover, self-efficacy was considered an antecedent of self-care, and self-management an attribute of self-care, self-management, symptom management, and self-monitoring. Such overlapping terms and commonalities are due to the use of the same terms in different disciplines. In fact, the databases examined in the concept analyses included many disciplines, such as nursing, medicine, psychology, sociology, education, business, economics, and pharmacology. Each of them offers different perspectives and paradigms on self-care and related concepts. The effort to achieve a common definition is burdensome and perhaps unnecessary, as differences among the disciplinary

paradigms are not conceivable (Godfrey et al., 2011; Wilkinson & Whitehead, 2009). Obtaining common definitions and identifying shared conceptual attributes leads to a level of generalization not useful when applying the concepts in clinical practice (Hupcey & Penrod, 2005). Therefore, we believe that nursing should be aware of the differences across disciplines but should take a disciplinary position to describe self-care and related concepts guided by existing nursing theories.

Based on the results of this systematic and integrative review of concept analyses and theoretical literature on self-care, we propose a model that updates and integrates that proposed by Richard and Shea (2011; **Figure 1**). In our view, self-care is a broad concept that encompasses all the other related concepts. It entails capacities, activities, and processes directed toward maintaining health, preserving life, and monitoring and managing acute and chronic conditions. In a healthy person, self-care is aimed at maintaining physical, psychological, social, and spiritual well-being, identifying changes in well-being, and implementing all the activities needed to maintain and resume a desired level of well-being. People are supported in this natural process by their self-care abilities (self-care agency), which are prerequisites to care for one's self, and by self-efficacy, which facilitates the achievement of desired outcomes. People's family and healthcare professionals can support them in self-care. Healthcare professionals, especially nurses who are focused on holistic care, can educate individuals, for example, to maintain basic, instrumental, and advanced activities in various stages of life, and to adopt healthy lifestyles. When an acute or chronic illness occurs, the person's care will move on two different fronts: on one hand, the person will continue to perform self-care activities for promoting and maintaining well-being for the aspects of his or her life that are not influenced by the illness; on the other hand, the person will carry out activities that keep the disease stable (self-care maintenance), control the occurrence of signs and symptoms attributable to the illness or its treatments (self-care monitoring), and intervene with actions decided autonomously or recommended by healthcare providers to treat the disease (self-care management) and manage symptoms (symptom management). Self-efficacy can mediate the relations between influencing factors and the

practices of self-care or can facilitate the achievement of the expected outcomes functioning as moderator. The use of the terms self-care monitoring and self-care management instead of self-management and self-monitoring supports the idea that they belong to the broader concept of self-care, according to the middle-range theories of self-care of chronic illness (Riegel et al., 2012).

Two new concepts are added to the previous model, which are external to individual control but important for the care of people with health problems: self-management support and disease management. They clarify the different roles and responsibilities of health-care providers and the shared responsibility. Health professionals provide information to people on therapeutic treatments, educate to integrate therapeutic recommendations into people's lives, and train them to acquire psychomotor skills (self-management support), or they directly manage the symptoms or side effects of the treatments (symptom management) by using the resources of the healthcare systems (disease management).

This review presents a few limitations. Although a careful screening of the literature using a broad range of terms was performed, concept analyses could have been missed if the researchers did not explicitly identify them, or if they were indexed with other key words. Moreover, only four databases were searched, limiting our ability to identify all the literature produced. Although a broad range of languages was included in the search, articles written in other languages were omitted, reducing the contribution of other cultural contexts in the description of the concepts. Moreover, the quality of the studies was not assessed, as no approved criteria or specific standardized tool exists for quality appraisal of concept analysis; for this reason, all the identified studies were included in the review. To reduce the risk of including poor methodological quality studies, only articles published in peer-reviewed journals were considered, as they are submitted through a process of study quality appraisal before publication. Moreover, we included articles using all concept analysis methods, although some of them have drawn criticism regarding their rigor and validity (Weaver & Mitcham, 2008). Despite the weaknesses presented by concept analysis, the findings express the best efforts of the researchers to synthesize and interpret what is

known about the identified concepts (Hupcey & Penrod, 2005).

Conclusions

Our review synthesized and interpreted the literature regarding self-care and related concepts and suggested an explanatory model that can help nurses and others to select, apply, and assess self-care in a variety of populations and conditions. The findings of this review have strong implications for research, practice, and policy. Precision in our terminology is essential to move the field forward. Research in this general area has exploded in recent years, so identifying shared terminology would allow us to search the literature more effectively so that we can focus on appropriate interventions, identify the factors that are modified by the intervention, and achieve specific outcomes. At this point, clinicians who search for literature on self-management may miss the large body of literature on self-care. Moreover, a clear identification of the diverse components of self-care can encourage the development and use of instruments that measure the specific attributes of the self-care dimensions. Together, progress in research and clinical practice will help to influence policy driving communities to promote self-care for the good of their local populations. Further studies are needed to confirm the utility of the proposed model in identifying and integrating the different dimensions of self-care.

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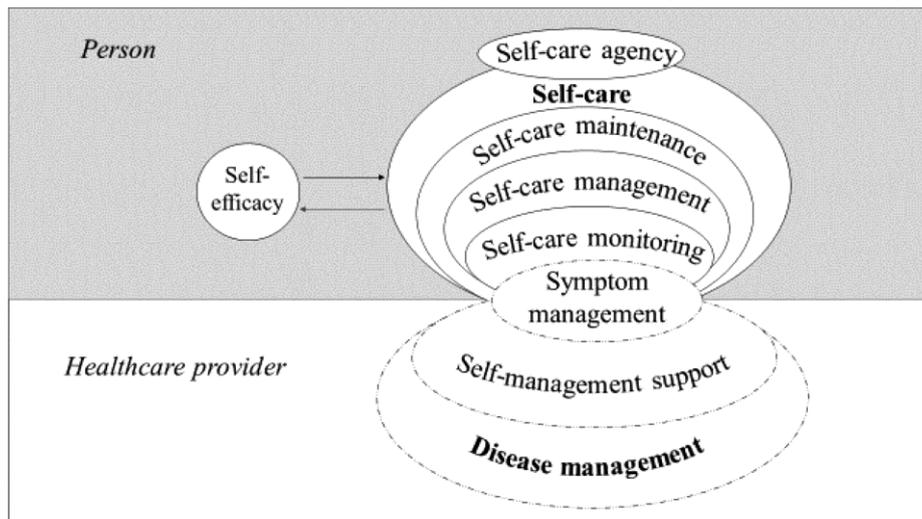


Figure 1. Model of self-care and related concepts. There is a shift in responsibility with the progression from the top (full responsibility of the person) to the bottom of the figure (full responsibility of the healthcare providers). The overlaps of the concepts are represented by the different circles inserted one inside the other. The progressive reduction of the circle size identifies the increasingly specific activities that are included in each concept.

Table S1. Literature Research Process on Self-Care and Related Concepts

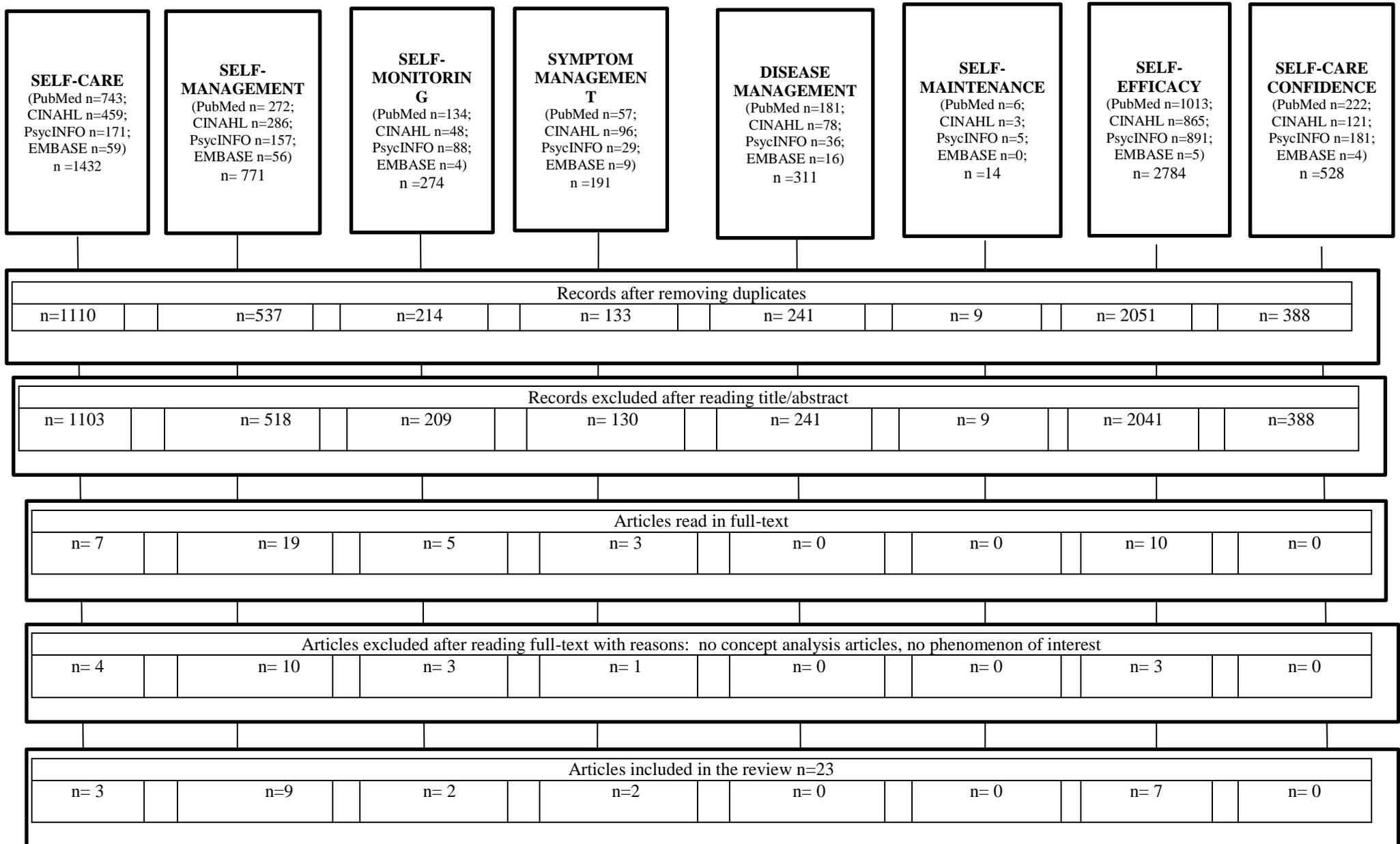


Table S1 (continued). Literature Research Process on Self-Care and Related Concepts

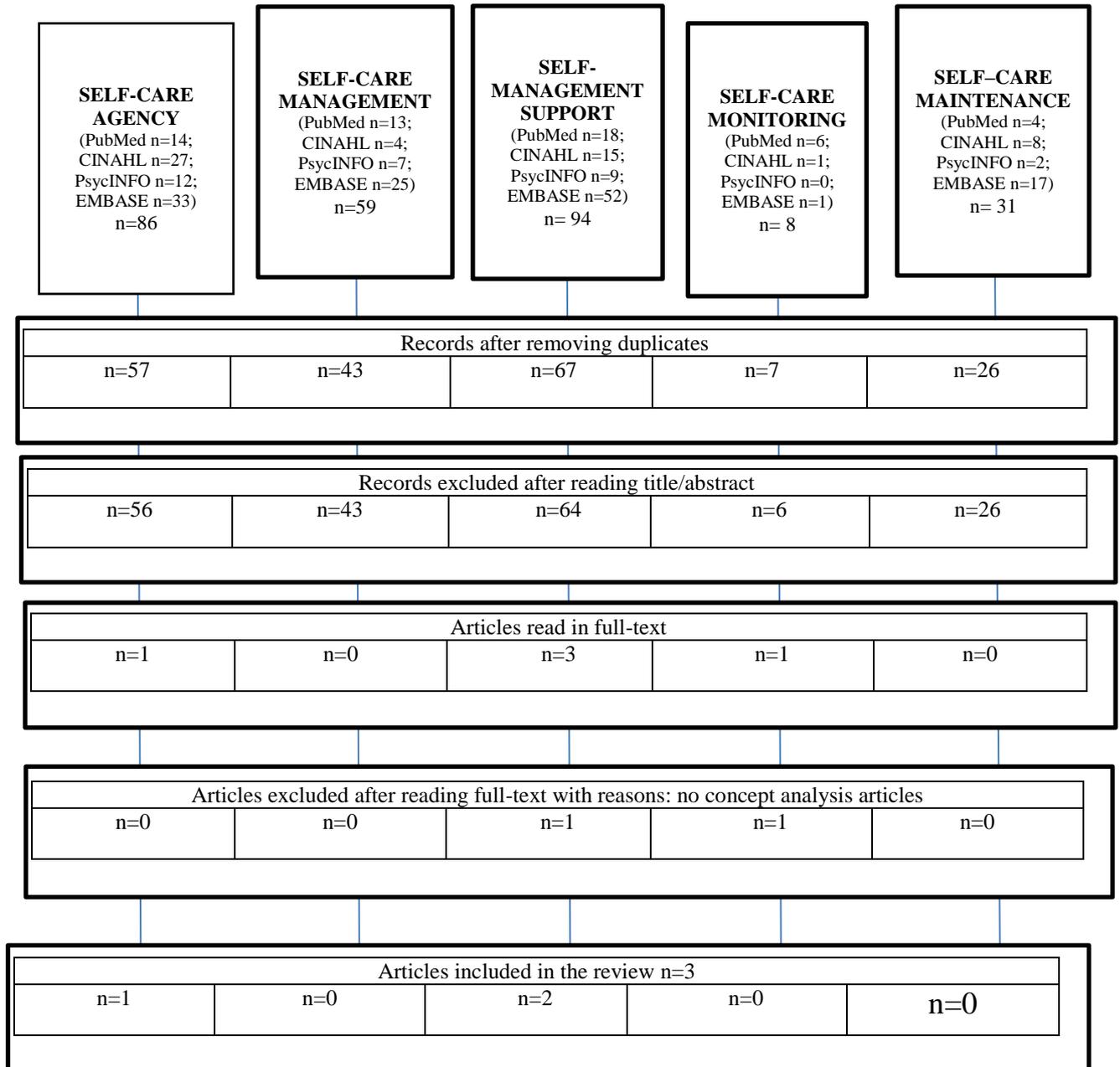


Table S2. Description of the Concept Analysis Articles of Self-Care and Related Concepts

Self-care article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Hoy et al., 2007	Health promotion in elderly	Integrative concept review	Nursing, Healthcare, Psychology, Sociology literature (1990-2006)	Process condition: adaptability. Personal conditions: variety of approaches, multifunctionality of resources, positive frame of mind, health beliefs, meaningfulness and spirituality, efficacy beliefs. Interpersonal and external conditions: social support and significant others, healthcare approaches, physical, social and cultural contexts (pp. 460-461).	Fundamental capabilities. Power capabilities. Performance capabilities. Life experience process. Learning process. Ecological integrative process (pp.459-460).	Physical, mental and social well-being and independence. Self-confidence and mastery capability. Performance capability and independence self-esteem. Educational development, Transcendence of self. Functional balance and integrity (p.462).	“Self-care as a health resource is defined as a person-oriented, but not individualized, concept constituted by two dimensions: action capabilities for health directed towards universal needs, goals and health problems, and action processes directed towards meaningful connectedness to the context and building and integration of the self in daily life” (p. 458).
Mailhot et al., 2013	General	Rodgers	Nursing literature (time frame not reported)	Learning of knowledge. Self-efficacy. Cognitive and psychomotor skills. Motivation. Imbalance or need. Being attentive. Commitment. Ability to make judgment. Social support. Internal and external resources (pp. 99-100).	Activity. Conscious decision. Appropriate. Focused on a goal. Acquired (pp. 97-99).	Maintenance of health, life and wellbeing. Gain autonomy. Empowerment. Symptom removal (p. 101).	Self-care is “an activity initiated, consciously and following learning, which is appropriate to the situation and focused on a goal” (p. 104).
Marzband & Zakavi, 2017	Islamic religion	Rodgers	Islamic literature (ns-2015)	Religious teachings as a source of self-care. Originality of the spiritual health in self-care. Accepting responsibility of trusteeship (p. 3).	Activities considering the physical needs. Paying attention to spiritual health. Caring for mental health Directing social health (pp. 2-3).	Prevention of illness. Coping with diseases. Sense of social support. Pure life (p. 4).	Self-care is “a series of responsible activities that include paying attention to spiritual health, considering the physical needs, caring for the mental health, and directing social health” (p. 4).

ns= Not Specified

Self-care agency article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Sousa, 2002	General	Walker & Avant	Nursing literature (time frame not reported)	Physical developmental level. Cognitive developmental level. Psychosocial developmental level. Need and desire to perform self-care actions. Goal-oriented outcomes. (p. 9).	Cognitive capabilities to evaluate, judge, and make decisions about personal and environmental conditions. Personal interest in performing self-care actions to achieve a desired outcome. Physical and psychosocial capabilities to engage in self-care actions. Personal capability to perform self-care actions correctly (p. 8).	Appropriate performance of self-care actions. Achievement of desired outcomes (p. 10).	“Self-care agency is an individual’s capabilities to recognize his or her needs, to evaluate personal and environmental resources, to determine and perform self-care actions to achieve a desired outcome” (p. 7).

Self-management article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Schilling et al., 2002	Type 1 diabetes in children and adolescent	Rodgers	Medicine, Nursing, Psychology literature (1982-2000)	Individual factors (age, gender, motivation, cognitive ability, skills, and knowledge). Family factor (family history of diabetes, maternal education level and self-efficacy, nature of the parent/child relationship). Social networks (relationships with friends, support from healthcare provider). Interventions (self-management training, computer-based instruction, family based discussions on diabetes). Nature of illness (complexity of self-care routine) (pp. 93-94).	Active and proactive process. Illness related activities. Setting goals (pp. 90-91).	Metabolic control. Freedom/health/well-being. Universal self-care. Effective coping strategies. Global self-worth. Adjustment. Perception of health (p. 95).	“Self-management of type 1 diabetes in children and adolescents is an active, daily, and flexible process in which youth and their parents share responsibility and decision-making for achieving disease control, health, and well-being through a wide range of illness-related activities” (p. 92).
Unger & Buelow, 2009	Epilepsy and diabetes in adults	Hybrid	Medicine, Nursing, Psychology literature (1990-2007)	Self-efficacy (p. 90).	Emotional and physical comfort. Functional ability. Self-management actions and behaviors. Perceived health status (p. 94).	Improved quality of life (p. 90). Disease management (p. 90).	Self-management in epilepsy and diabetes is “an interactive phenomenon in which patients continually evaluate their perceived health status (which comprises how they feel emotionally and physically and how they are able to function on a daily basis) and implement a variety of behaviors to manage their medications/treatments, safety, seizures, physical and emotional comfort, functional status, and other factors depending on their current perceived health” (pp. 94-95).

Self-management article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Udlis, 2011	Chronic illness	Rodgers	Nursing, Medicine and Psychology literature (2000-2010)	Information regarding chronic illness and treatment. Self-efficacy. Support from family and healthcare professionals. Intention. Mutual investment between the patient and healthcare provider (p. 132).	Resources (physical, environmental, socioeconomic, technological, healthcare providers). Knowledge. Adherence to a plan. Active participation. Informed decision-making (p. 132).	Improved clinical outcomes. Reduced healthcare expenditures. Improved quality of life (p. 134).	Self-management “occurs when the individuals have the resources and knowledge to adhere to a mutually agreed upon plan while actively participating in the management of their chronic illness. The culmination of these acquired abilities provides the individuals with the capacity to make informed decisions which result in improved quality of life, improved clinical outcomes, improved self-worth and reduced healthcare expenditures” (p. 137).
Rothenberger, 2011	Prediabetes	Walker & Avant	Medicine, Nursing, Psychology, Education, and Business literature (2002-2010)	Diagnosis of prediabetes. Knowledge about health risks and benefits of change. Self-efficacy. Services and financial support (p. 82).	Setting of individualized goals. Engagement in long term lifestyle modifications. Self-monitoring. Collaboration with healthcare professionals (p. 80).	Normoglycemia. Slow progression to diabetes. Weight loss (p. 82).	“Self-management in prediabetes is setting of individualized goals, engagement in long-term lifestyle modification, and self-monitoring of progress, in collaboration with healthcare professionals” (p. 83).
Mammen & Rhee, 2012	Adolescents with asthma	Norris	Medicine, Nursing, Psychology literature (2001-2011)	Intrapersonal factors (knowledge, education, self-efficacy, readiness to change, motivation, responsibility, attitudes, ability, acceptance, and beliefs). Interpersonal factors (environment, family and social structure, and functioning) (p. 186).	Symptom prevention. Symptom monitoring. Acute symptom management. Communication with important others (p. 186).	Physiologic lung function. Degree of symptoms. Exacerbations. Healthcare utilization. School absences. Quality of life (p. 185).	“Asthma self-management is the set of behaviors that adolescents use to prevent, monitor, manage, and communicate asthma symptoms with others for the purpose of controlling individually relevant outcomes, and that is influenced by complex, reciprocally interacting intrapersonal and interpersonal factors” (pp. 185-86).

Self-management article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Balduino et al., 2013	Hypertension	Walker & Avant	Nursing, Medicine, and other allied health professions literature (2007-2012)	Irregular or absent medical monitoring. Lack of adherence to treatment. Lack of blood pressure monitoring. Lack of adherence to diet, smoking, alcohol intake. Lack of control of body weight. Lack of physical activity. Stress (pp. 39-40).	Blood pressure control. Disease management (pp. 39-40).	Received educational intervention. Incorporate innovations in self-management practices. Accept and share the process of creation of self-management goals and care activities/strategies proposed by the team. Know, control blood pressure and manage the disease. Make decision regarding the treatment and care. Provide potential benefits regarding the management of disease and blood pressure. Monitor blood pressure at home (pp 39-40).	Self-management in hypertension is “a dynamic and active process, which requires knowledge, attitude, discipline, determination, commitment, self-regulation, empowering and self-efficiency to manage the disease and achieve a healthy lifestyle” (p. 40).
Ohlendorf, 2013	Postpartum weight	Walker & Avant	Nursing, Medicine, and other allied health professions literature (2005-2012)	Pregnancy. Woman’s gestational weight gain. Weight status at conception (p. 43).	Transition as opportunity. Minimize inhibitors of weight self-management (lack of knowledge and motivation, emotions and fatigue, altered perceptions of control over weight management). Maximize facilitators of weight self-management. (attitudes and beliefs, self-efficacy). Intentional engagement in weight self-management behaviors (healthy diet, physical activity, counselling) (pp. 37-40).	Immediate postpartum weight status. Long-term weight status. Weight status of children (p. 43).	“Postpartum weight self-management is a process by which the transition to motherhood is viewed by the woman as an opportunity to intentionally engage in healthy weight self-management behaviors by minimizing the salient inhibitors and maximizing the salient facilitators to action” (p. 43).

Self-management article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Miller et al., 2015	Chronic disease in adults	Hybrid	Nursing, Medicine, Psychology literature (2000-2013)	Disease knowledge. Self-efficacy. Social support. Health beliefs. Motivation. Coping (p. 4).	Systems-based process. Intrapersonal system (emotions, and physical functioning; constant surveillance and use of resources; health literacy; tolerating and planning for sudden or gradual onset of life interruptions; incorporating treatments and side effects). Interpersonal system (communication with family; using patient-selected support persons). Environmental system (partnering and communicating with health care providers) (p. 5).	Change in disease status/severity. Treatment adherence. Functional ability. Improved quality of life. Health care resource use (p. 4).	Self-management “is a fluid, iterative process during which patients incorporate multidimensional strategies that meet their self-identified needs to cope with chronic disease within the context of their daily living. Strategies are multidimensional because they require the individual to incorporate intrapersonal, interpersonal, and environmental systems to maximize wellness” (p. 6).
Blok, 2016	Self-management behaviors	Walker & Avant	Nursing, Medicine, Psychology, Sociology, and other allied health professions literature (2001-2015)	Psychological characteristics (self-efficacy, motivation, psychosocial functioning, perceptions of cause/importance of disease, cognitive ability). Socioeconomic and cultural characteristics (socioeconomic status, social circumstances, acculturation, financial and community resources). Physical characteristics (ability to perform activities, symptoms). Received support (knowledge, education). Collaboration (collaborative goal setting, support/advice from healthcare team). Obstacles (unspecific knowledge, incorrect beliefs, fatalism,	Proactive lifestyle, problem-specific management, collaboration, mental support, and planning. Reactive management. Dynamic process (p. 4).	Control over a problem and progress toward a goal. Individual benefits: improved quality of life, increased satisfaction, and improved physical function, well-being. Societal benefits: reduced healthcare utilization and reduced costs (p. 6).	Self-managements behaviors are “proactive actions related to lifestyle, a problem, planning, collaborating, and mental support, as well as reactive actions related to a circumstantial change, to achieve a goal” (p. 6).

				medication avoidance) (pp. 4-6).			
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Self-monitoring article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Wilde & Garvin, 2007	Chronic disease	Rodgers	Medicine and Nursing literature (1998-2005)	Knowledge about disease process and symptoms. Social support. Skills for problem solving and measurements/recordings. Goal-setting for living with chronic condition (p. 346).	Awareness of symptoms, sensations, activities, and cognitive processes. Measurements, recordings, or observations providing information for independent action or consultation with care providers (p. 344).	Improved self-management through: better recognition of symptoms. Improved disease regulation. Realistic goals. Enhanced quality of life (pp. 346-347).	Self-monitoring “is awareness of symptoms or bodily sensations that is enhanced through periodic measurements, recordings and observations to provide information for improved self-management” (p. 343).
Song & Lipman, 2008	Type 2 diabetes mellitus	Rodgers	Medicine, Nursing, Psychology literature (2002-2007)	Diagnosis of diabetes. Knowledge on diabetes. Skills of self-monitoring (p. 1705).	Awareness, interpretation, and response to signs and symptoms of diabetes mellitus in the cultural context of the patient (pp. 1703-1704).	Achieved glycemic control. Reduction of diabetes-related complications and symptoms of distress. Improved knowledge on diabetes mellitus. Improved adequacy of self-care. Improved coping skills. Improved attitude toward the disease. Improved quality of life (p. 1706).	“Self-monitoring in diabetes is awareness and interpretation of, and response to a patient’s particular manifestations of type 2 diabetes mellitus” (pp. 1702-1703).

Symptom-management article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Fu et al., 2004	Cancer	Integrated approach (Walker & Avant and Rodgers)	Nursing, Medicine, and other allied health professions literature (1980-2003)		<p>Subjective: perception (or previous perception) of symptom experience and the degree of symptom distress.</p> <p>Experiential: experience of action or interaction with the perception (or previous perception) of the symptom.</p> <p>Intentional: purposefully: undertake activities linked to perceptions of the symptom experienced.</p> <p>Multidimensionality of symptom management includes physical, perceptual, psychological, cognitive, and sociocultural dimensions.</p> <p>Dynamic process encompassing phases of evaluation, decision making, actual management, and outcome (p. 68).</p>	<p>Relief, reduction or prevention of the symptoms.</p> <p>Improved quality of life.</p> <p>Functional, cognitive and role performance (p. 68).</p>	<p>“In patients with cancer, symptom management is a dynamic and multidimensional process in which patients intentionally and purposefully act on and interact with the perception (or previous perception) of the symptom(s) to initiate activities or direct others to perform activities to relieve or decrease distress from and prevent the occurrence of a symptom” (p. 68).</p>
Stewart et al., 2014	Persistent pain in older people	Rodgers	Nursing, Medicine, and other allied health professions and grey literature (ns-2013)	<p>Self-awareness of perceived need to participate in pain management.</p> <p>Willingness and ability to actively participate in pain management.</p> <p>Support from others (health care providers, family, and friends) (p. 218).</p>	<p>Multidimensional process.</p> <p>Active individuals.</p> <p>Personal development.</p> <p>Response to symptoms.</p> <p>Symptom control (p. 218).</p>	<p>Physical health improvements.</p> <p>Psychological health improvements.</p> <p>Improved social function.</p> <p>Increased quality of life.</p> <p>Engagement with pain management techniques.</p> <p>Use of health care resources (p. 218).</p>	<p>Pain management is “a multidimensional process occurring when an older adult perceives the need to self-manage pain and is willing and able to do so with support from others” (p. 220).</p>

Self-management support article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Kawi, 2012	Chronic illness	Rodgers	Nursing, Medicine, Sociology, Psychology, Education literature (time frame not reported)	Need for self-management identified by patient or health care team member (p. 114).	Patient level: patients as partners; innovative information dissemination; individualized patient care. Healthcare provider level: adequate knowledge, skills, attitudes. Organizational level: organized system of care, multidisciplinary team approach, support: tangible, social, use of trained lay workers. (p.115).	Positive change in patient behaviors and improved self-management. Better quality of patient care. Improved patient and provider satisfaction (p. 114).	“Self-management support refers to comprehensive sustaining approach toward improving chronic illness outcomes consisting of patient- centered, healthcare provider, and organizational attributes” (p. 116).
Johnston et al., 2014	Palliative nursing	Walker & Avant	Medicine, Nursing, Psychology literature (time frame not reported)	Presence of nurses and time. Relationship with patient. Skills, knowledge and expertise of nurses. Team working and ability of nurses to recognize when referring to other professionals or support services (p. 7).	Maintaining normality. Preparing for death. Support from family/friends. Physical and emotional Self-care strategies. Support from health professionals (p. 7).	Positive experiences for patients: feeling cared for and having their needs met; being informed and being supported (p. 8).	“Self-management support in palliative nursing is assessing, planning, and implementing appropriate care to enable the patients to live until their death and supporting the patient to be given the means to master or deal with their illness or their effects of their illness themselves” (p. 4).

Self-efficacy article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Asawahaisuwikrom, 2002	Health promotion/physical activities	Walker & Avant	Psychology, Sociology, Education, Economics, Pharmacology, Nursing, Medicine literature (time frame not reported)	Task or goal. Previous mastery experiences. Perception of confidence in his/her capability to perform the task or achieve the goal (p. 246).	A belief in personal capability to perform a task. Strength of belief in abilities to carry out the required behavior. Affirmation of confidence to overcome the difficulties in achieving a specified level of behavior attainment. (p. 244).	Change in confidence level. Some level of goal attainment (p. 246).	Self-efficacy is “the power to produce effects. A sense of self-efficacy is concerned with perceived capabilities, which include the affirmation and the strength, to produce effects in a particular task” (p. 244).
Heale & Griffin, 2009	Adolescent smoking cessation	Walker & Avant	Nursing literature (1977-2007)	Developmental stage. Past life support. Emotional support. Coping strategies. Emotional status. Resources (p. 915).	Confidence. Perceived capacity. Perceived ability (p. 916).	Smoking cessation (p. 916).	Adolescent smoking cessation self-efficacy is “the level of confidence, perceived capacity and perceived ability the teenager possesses related to smoking cessation behavior” (p. 915).
Zulkosky, 2009	General	Rodgers	No specified literature and time frame	Social experiences. Performance accomplishments. Vicarious experience. Verbal persuasion. Physiological cues (p. 97).	Cognitive processes. Affective processes. Locus of control. (p. 96)	Choice behavior. Effort expenditure. Thought patterns. Emotional reactions (p. 98).	“Self-efficacy is conscious awareness of one’s ability to be effective and to control actions” (p. 96).
Liu, 2012	Elderly with diabetes mellitus	Walker & Avant	Nursing, Medicine, and other allied health professions (2000-2011)	Relevant knowledge. Personal authentic experience. Role modeling. Family support (p. 232).	Cognitive recognition of requisite specific techniques and skills required to undertake diabetes self-management. Perceived expectations of the outcomes of self-management. Confidence in the capability to perform self-management. Sustained efforts in self-management of diabetes (p. 230).	Adherence to the prescribed regimen. Successful management and prevention of diabetes (p. 232).	“Self-efficacy in elderly with diabetes is the perceived confidence and judgment of one’s ability to carry out the required self-management activity in daily living, readiness to change, and adherence to the therapeutic regimen” (p. 229).
Self-efficacy article	Context	Method	Data source (time frame)	Antecedents	Attributes	Consequences	Definition
Jenkins, 2015	Adolescent sexual	Walker &	Literature and time	Social experiences.	Believe that the task	Healthier sexual	

	risk-taking behaviors	Avant	frame not reported	Self-reflections on personal experiences. Performance accomplishments. Vicarious experiences. Verbal persuasion. Physiological cues (p. 4).	can be completed (confidence). Be able to carry out the task (capability). Be able to be persistent and maintain the task over time (persistence). Strength to complete the task (strength). Desire or motivation to carry out the task or change a behavior (p. 3).	health behaviors. Limited or no risky behaviors. Higher motivation levels. Increased sense of control over the situation. Increased accessibility of community resources. Increase in health promotion (p. 5).	
Voskuil & Robbins, 2015	Youth physical activity	Rodgers	Medicine, Nursing, Psychology, Sociology literature (1990–2013)	Enactive mastery (prior and current physical activity experiences). Vicarious experience. Verbal or social persuasion. Physiological or affective states (pp. 9-11).	Personal cognition and perception. Self-appraisal process. Physical activity related action. Power to choose physical activity. Dynamic state. Bidimensional nature (pp. 5-9).	Choice behavior. Effort expenditure and persistence of physical activity. Thought patterns of physical activity. Emotional effects of physical activity (pp. 11-13).	Youth physical activity (PA) self-efficacy is “a youth’s belief in his/her capability to participate in PA and to choose PA despite existing barriers. PA self-efficacy is dynamic and bi-dimensional in nature” (p. 13).
Eller et al., 2016	Self-care	Pragmatic utility (Morse, 2000)	Medicine, Nursing and Psychology literature (1996-2015)	Values and beliefs. Self-confidence. Spirituality (p. 9).		Physical and mental health. Greater physical function. Social support. Goal achievement. Improved quality of life. Engagement in self-care behaviors. Successful coping strategies (pp.7-8).	Self-care self-efficacy “is an indicator of one’s confidence in the performance of relevant behaviors in the context of self-care” (p. 8).

Table S3. Synthesis of Antecedents, Attributes, Consequences and Surrogate or Related Terms of Self-Care and Related Concepts

Concept	Antecedents	Attributes	Consequences	Surrogate/ related terms
Self-care (Hoy et al., 2007, Mailhot et al., 2013; Marzband & Zakavi, 2017)	<i>Internal factors</i> Self-efficacy (2) Religious beliefs and spirituality (3) Knowledge Cognitive and psychomotor skills Motivation Perception of imbalance/need Being attentive Commitment (2) Ability to make judgment Health beliefs Adaptability Positive frame of mind Meaningfulness <i>External factors</i> Social support (2) External resources (2) Healthcare approaches Physical, social and cultural contexts	Activity Conscious decision Appropriate Focused on a goal Acquired Physical needs Spiritual health Mental health Social health Life experience process Learning process Ecological process Fundamental, power and performance capabilities	<i>Clinical outcomes</i> Autonomy (2) Symptom removal Prevention of illness <i>Individual outcomes</i> Maintenance of health, life and well-being (2) Empowerment Pure life Sense of social support Effective coping strategies Self-confidence Performance capability Self-esteem Self-transcendence Educational development Functional balance and integrity	Self-management Self-monitoring Self-control
Self-care agency (Sousa, 2002)	<i>Internal factors</i> Physical, cognitive and psychosocial developmental level Need and desire to perform self-care actions Goal-oriented outcomes	Cognitive, physical and psychosocial capabilities Personal capability to perform self-care actions	<i>Individual outcomes</i> Performance of self-care actions Goal achievement	Self-care Self-care ability Self-efficacy Self-care capabilities
Self-management (Schilling et al., 2002; Unger & Buelow, 2009; Rothenberger, 2011; Udilis, 2011; Mammen & Rhee, 2012; Balduino et al., 2013; Ohlendorf, 2013; Miller et al., 2015; Blok, 2016)	<i>Internal factors</i> Lack of self-management activities (7) Knowledge (5) Self-efficacy (6) Motivation (5) Disease diagnosis and symptoms (4) Ability and skills (3) Health beliefs and attitudes (2) Cognitive and psychomotor skills (5) Education/accluturation (2) Coping Age Gender Readiness to change Responsibility Acceptance Stress Socioeconomic status <i>External factors</i>	Proactive behaviors (7) Reactive behaviors (7) Dynamic and active process (3) Collaboration with healthcare professionals (3) Active and intentional participation/engagement (3) Setting goals (2) Resources (2) Emotional and physical functioning (3) Communication with important others (2) Adherence to a plan (2) Knowledge (2) Perceived health status Health literacy Informed decision-making Tolerating and planning for onset of life interruptions Transition as opportunity Attitudes and beliefs	<i>Clinical outcomes</i> Changes in physiological functions (14) Changes in disease status (4) Adherence to care plan (2) <i>Individual outcomes</i> Improved quality of life (5) Well-being (2) Perception of health (2) Educational intervention Make decision regarding the care Innovations in self-management practices Satisfaction Global self-worth Adjustment Universal self-care Freedom Effective coping strategies Problem control Goal achievement	Self-care Self-care management Management of treatment regimens Disease management Illness management Self-monitoring Compliance Adherence

	Support from healthcare provider (6) Services and financial resources (5) Support from family and friends (5) Social/community support (2) Complexity of care	Self-efficacy	<i>Societal outcomes</i> Reduced healthcare utilization (4) Reduced healthcare costs (2) Increased social participation	
Self-monitoring (Wilde & Garvin, 2007; Song & Lipman, 2008)	<i>Internal factors</i> Knowledge about disease/symptoms (2) Self-monitoring skills (2) Problem-solving skills Goal-setting for living with chronic condition <i>External factors</i> Social Support	Awareness of symptoms (2) Sensations, activities, and cognitive processes Measurements, recordings, observations Interpretation, and response to signs/symptoms Independent action or consultation with care providers	<i>Clinical outcomes</i> Improved self-management (2) Improved self-care Improved knowledge <i>Individual outcomes</i> Improved quality of life (2) Effective coping strategies	Self-management Symptom management
Symptom management (Fu et al., 2004; Stewart et al., 2014)	<i>Internal factors</i> Self-awareness of perceived need Willingness and ability to actively participate in management <i>External factors</i> Support from others (health care providers, family, and friends)	Multidimensional and dynamic process (2) Active and intentional activities (2) Response to symptoms (2) Symptom control (2) Personal development Experience of symptoms Experience of action or interaction with symptoms Self-efficacy	<i>Clinical outcomes</i> Relief, reduction, prevention of symptoms Functional, cognitive and role performance Physical health improvements Psychological health improvements <i>Individual outcomes</i> Improved quality of life (2) Engagement in symptom management techniques <i>Societal outcomes</i> Improved social function Appropriate use of health care resources	Self-monitoring Self-management Self-care Self-regulation Self-treatment Self-help Coping
Self-management support (Kawi, 2012; Johnston et al., 2014)	<i>Internal factors</i> Need for self-management identified by patient <i>External factors</i> Need for self-management identified by health care team member Presence of healthcare providers Relationship with patient Skills, knowledge and expertise of healthcare providers Team working and ability of healthcare provider to recognize when referring to other professionals or support services	<i>Patient level</i> Support from health professionals (2) Maintaining normality Preparing for death Physical and emotional self-care strategies Support from family/friends <i>Healthcare provider level</i> Knowledge, skills, attitudes Individualized patient care Patients as partners Innovative information/dissemination <i>Organizational level</i> Organized system of care Multidisciplinary team approach	<i>Clinical outcomes</i> Improved self-management <i>Individual outcomes</i> Change of patient behaviors Patient satisfaction Feeling cared for and having needs met Being informed and supported <i>Healthcare professional outcomes</i> Improved quality of patient care Provider satisfaction	Partnership Collaborative management Coordinated care

<p>Self-efficacy (Asawachaisuwikrom, 2002; Heale & Griffin, 2009; Zulkosky, 2009; Liu, 2012; Jenkins, 2015; Voskuil & Robbins, 2015; Eller, et al. 2016)</p>	<p><i>Internal factors</i> Previous mastery experiences (5) Vicarious experiences (4) Verbal or social persuasion (3) Physiological states (3) Emotional states (2) Confidence in capability (2) Social experiences (2) Performance accomplishments (2) Task or goal Values and beliefs Spirituality Developmental stage Coping strategies Knowledge <i>External factors</i> Family support (2) Resources</p>	<p>Perceived capacity (7) Confidence (4) Persistence in maintaining the task (2) Cognitive processes Locus of control Affective processes Perceived expectations of outcomes Strength to complete task Motivation to carry out the task Personal cognition and perception Self-appraisal process Dynamic state</p>	<p><i>Individual outcomes</i> Effort expenditure (2) Thought patterns (2) Emotional effects (2) Change in confidence level Goal achievement (2) Higher motivation level Sense of control over the situation Improved quality of life Effective coping strategies Engagement in the desired health behaviors (7) <i>Clinical outcomes</i> Physical and mental health Disease management and prevention Improved physical function <i>Societal outcomes</i> Increased use of community resources Social support</p>	<p>Perceived self-efficacy Self-esteem Self-confidence Locus of control Competence Motivation</p>
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