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Theoretical Substruction of Resilience Theory: Dementia Caregivers' Burden and Their Care Recipients' Behavior

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Abstract

Theoretical substruction is vital in clarifying models and guiding research. In this article, the process of theoretical substruction was examined through resilience theory to provide an example of the congruence between theoretical and operational definitions in nursing research. The author examines the significance of resilience theory in the context of dementia caregivers' burden and their care recipients' behavioral problems. The steps of theoretical substruction are included, and a model of resilience is presented that includes middle-range concepts, relational statements, and propositions derived from the research literature. The rigorous process of theoretical substruction provides an example of a theoretically sound basis for exploring the role of positive thinking in the lives of dementia caregivers and their care recipients. Geropsychiatric nurses working with dementia patients and their caregivers should consider the role of positive thinking in decreasing caregivers' burden.

Nursing theories and conceptual frameworks are essential for developing nursing knowledge and advancing nursing science (Bekhet & Zauszniewski, 2008). However, given their abstract nature, theoretical substruction is

vital in clarifying models and guiding research (Bekhet & Zauszniewski, 2008). Theoretical substruction is a pictorial structure that starts with the abstract and ends with the concrete, thus connecting theory with methodology (McQuiston & Campbell, 1997; Ryan et al., 2019). It can be used as a guide to theorists and scholars to test theories, evaluate frameworks, and understand the hierarchical relationships among constructs, concepts, variables, and empirical indicators (Ryan et al., 2019). Theoretical substruction can be viewed as an assessment process of the congruency among theory, design, and analysis in research, thus allowing the researchers to connect the theoretical and operational systems of a study (Trego, 2009). In this article, the process of theoretical substruction was examined through resilience theory to provide an example of the congruence between theoretical and operational definitions in nursing research.

The concepts of resilience in general and resilience theory in particular have received more attention than ever in recent years, given the hardship that people are going through and the desire to bounce back and thrive into healthier and stronger people. Although a few other examples already exist of applying theoretical substruction, none of them use resilience theory as an example. The author examines the process of theoretical substruction and illustrates the use of the process to examine the significance of resilience theory for research and practice. The congruence between theory and measures is imperative to support the validity of the theory and the contributions of causality, intervention effects, mediations, and moderations (Ryan et al., 2019). This example will serve as a guide to help researchers and scholars who are interested in using resilience as a theoretical framework for their studies.

In this article, theoretical substruction is used to examine the significance of resilience theory in the context of dementia caregivers' burden and their care recipients' behavior problems. The steps of theoretical substruction as illustrated by previous researchers include the following steps, which progress from the abstract to the concrete: (a) identifying the constructs, concepts, and variables of the study; (b) describing the relationships among them according to the theory; (c) operationalizing the variables with empirical indicators; and (d) pictorially portraying the constructs, concepts, variables, and empirical indicators in a hierarchical structure (Bekhet & Zauszniewski, 2008).

The following section provides an overview of the concept of resilience and resilience theory, followed by an application of the four steps of theoretical substruction in a nursing research study that uses resilience theory as a theoretical framework.

The Concept of Resilience and Resilience Theory

Resilience as a concept has been used in a variety of disciplines, all of which incorporate the common element of rebounding, or the ability to bounce back (Kobiske & Bekhet, 2018). For example, in physical sciences, resilience is viewed as the ability of the material to return to its original shape (Kobiske & Bekhet, 2018). In business, it has been viewed as the ability to bounce back after economic crisis (Earvolino-Ramirez, 2007). In psychology, the concept of resilience was first studied in children and adolescents to understand their success as adults despite adverse childhood circumstances (Werner & Smith, 1992). In recent years, the resilience concept has been extended to studies that involve adults and families (Matel-Anderson et al., 2019). Luthar and Cicchetti (2000) indicated that resilience includes two inevitable conditions: adversity and positive adaptation outcomes. The definitions of resilience seem to vary across researchers; however, they all share a common element of overcoming adversity and include positive adaptation to grow into a more mature and healthier person (Zauszniewski et al., 2010). Researchers differentiate among three groups of people who can be described as being resilient. The first group is those who are at risk but show unexpectedly great outcomes in spite of the adversity. The second is those who can adapt positively despite challenging experiences. The third is those who recovered successfully from traumatic experiences (Luthar et al., 2000).

Resilience theory is a strength-based approach that provides conceptual scaffolding to understand why some individuals adapt well in response to adversity and others do not (Kobiske & Bekhet, 2018). Resilience theory explains how homeostasis can be restored after a disruption caused by adverse events (Kobiske & Bekhet, 2018). According to resilience theory, balancing risk (vulnerability) and protective factors determines the resulting adaptation (Kobiske & Bekhet, 2018). The resilience theory can act as a guide for researchers and interventionists to recognize salient risk and protective factors in the context of specific adversities. For example, researchers can enhance protective modifiable variables and decrease risk factors to increase resilience within the context of specific adversities (Luthar & Cicchetti, 2000). Luthar and Cicchetti (2000) provided two examples of resilience theory applications on a macrolevel and a microlevel. At a macrolevel, the researchers mentioned that it is imperative to distinguish factors that have a great impact in the presence of unfavorable life circumstances but have less effect in the absence of risk. They provided an example of the impact of extracurricular activities and relationships with teachers that have proven to be effective for young students who were raised in urban poverty but less effective in low-risk community families.

At a microlevel, researchers pointed out the fact that resilience can be different among groups facing adversities. One example that they provided is that parental monitoring is associated with positive adjustment outcomes among adolescents in poverty, yet it is not necessarily protective for middle-class children who are facing some risks, perhaps with parental depression.

The research example and definition of the model components within the four identified steps are as follows.

Step 1: Identification of Constructs, Concepts, and Variables

The theoretical substructure includes constructs, concepts, variables, and empirical indicators (Bekhet & Zauszniewski, 2008). Constructs are broad abstract notions that are hard to fully define (Bekhet & Zauszniewski, 2008). Three constructs constitute the resilience model used here: risk factors, protective factors, and target behavior (figure). Risk factors have been defined as events or conditions associated with adversity that can have an impact on physical and mental health and can interfere with social and environmental adjustment (Zauszniewski et al., 2010). Protective factors can mitigate and/or reduce the impact of risk factors and enhance positivity (Matel-Anderson et al., 2019; Zauszniewski et al., 2010). Luthar and Cicchetti (2000) defined protective factors as “those that modify the effects of risk in a positive direction” (p. 859). Target behaviors are the consequences of the interaction of risk and protective factors.

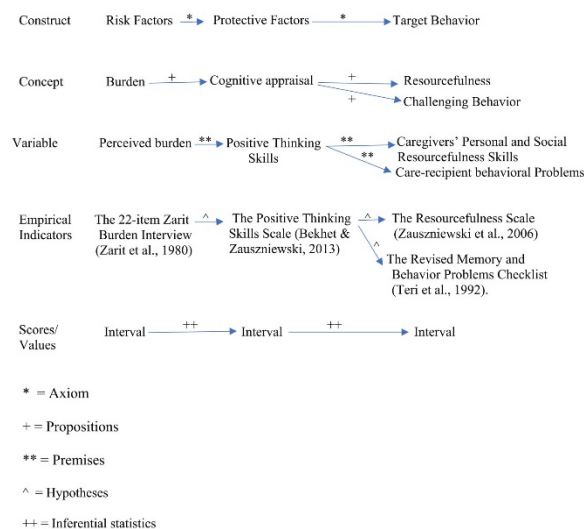


Figure. Theoretical substructure illustrated by the resilience theory. *Axiom. +Propositions. **Premises. ^Hypotheses. ++Inferential statistics.

Concepts are derived from the constructs, and they are less abstract (Fawcett & Downs, 1986). Four concepts were derived from three constructs in the proposed model of resilience theory (figure). The construct risk factors include burden as a concept, which is defined as a load or something that is carried and emotionally difficult to bear (*American Heritage Dictionary*, 2011). The second construct, protective factors, includes cognitive appraisal as a concept, which is defined as a cognitive process by which persons subjectively assess and evaluate events and conditions with regard to their significance or worth (Lazarus & Folkman, 1984). Resourcefulness and challenging behaviors represent two concepts of the larger construct: target behavior. Resourcefulness is defined as a coping resource and as a characteristic acquired via interactions with others and manifested in the ability to manage daily life events (Rosenbaum, 1980). Behavior can be described as challenging when it is of such an intensity, frequency, or duration as to threaten the quality of life and the physical safety of the individual or others, and it is likely to lead to responses that are restrictive or aversive or that result in exclusion (Emerson, 1995).

Variables are also called *subconcepts*: they are derived from the global concepts, and they refer to dimensions of phenomena (Bekhet & Zauszniewski, 2008). Four variables were derived from the resilience theory: caregivers' perceived burden, positive thinking skills, resourcefulness skills, and behavioral problems (figure, table). Bekhet and colleagues have investigated these variables in two studies: the first included 80 caregivers of persons with dementia and the second included 100 dementia caregivers (Bekhet, 2013; Bekhet & Garnier-Villarreal, 2019). Caregivers' burden is a multidimensional response to the physical, psychological, emotional, social, and financial stressors associated with caregiving. Caregivers' perceived burden is the extent to which a caregiver perceives level of burden as a result of caring for the care recipient (Sharma et al., 2016, p. 10). Positive thinking skills are defined as a collection of specific thinking skills that help people to develop optimistic ideas, finds favorable solutions to problems, and promote their overall mental health (Bekhet & Zauszniewski, 2013). Resourcefulness is defined as a cognitive behavioral repertoire of personal and social skills that help in adjustment (Zauszniewski et al., 2006). Finally, the behavioral problems of persons with dementia constitute a range of psychological reactions and psychiatric symptoms and represent an important clinical dimension of dementia (Bekhet & Garnier-Villarreal, 2019).

Table. Conceptual and Operational Definitions of Study Variables.

Variable	Conceptual Definition	Operational Definition
Caregivers' perceived burden	Caregivers' burden is a multidimensional response to the physical, psychological, emotional, social, and financial stressors associated with caregiving.	The extent to which a caregiver perceives level of burden as a result of caring for the care recipient, as measured by the 22-item Zarit Burden Interview (Zarit et al., 1980)
Positive thinking skills	A collection of specific thinking skills that help people to develop optimistic ideas and promote mental health	The frequency of using eight strategies for thinking positively, as measured by the Positive Thinking Skills Scale (Bekhet & Zauszniewski, 2013)
Resourcefulness skills	A cognitive behavioral repertoire of skills that help in adjustment.	Individuals' abilities to use self-help (personal resourcefulness) and help-seeking (social resourcefulness) behaviors when facing challenging situations (Zauszniewski et al., 2006)
Care recipients' behavioral problems	A range of psychological reactions and psychiatric symptoms	The overall level of behavior problems, as well as specific areas of problems (memory, depression, disruption), as measured by the Revised Memory and Behavior Problems Checklist (Teri et al., 1992)

Step 2: Description of the Relationship Among Constructs, Concepts, and Variables

The horizontal axis that showed the relationships among the three constructs are called *axioms* (figure; Bekhet & Zauszniewski, 2008). The relational statements among concepts are called *propositions* (figure; Dunn, 2004). Resilience theory identifies the following propositions: caregivers are using positive cognitions in achieving resourcefulness, and the effects of burden on resourcefulness can be modified by positive cognitions. Cognitive cognitions therefore affect the attainment of resourcefulness. The relationships among the variables are known as “premises” (figure; Bekhet & Zauszniewski, 2008). The two studies that the researcher and her team conducted have a number of premises that reflect the relationships among the study variables and are supported by theoretical writing from nursing and related disciplines, as outlined in the following section. The relationship among the study variables is supported by resilience theory, which posits that positive thinking (as a protective factor) can mediate the effects of caregivers’ burden (as a risk factor) and lead to caregivers’ resourcefulness and reduction of care recipients’ behavior problems (as target behaviors). Empirical evidence from previous research showed that positive thinking attenuated the effects of caregivers’ burden and enhanced their levels of resourcefulness and psychological well-being in a sample of 95 caregivers of persons with autism disorders (Bekhet et al., 2012). Also, previous research has found that that women with type 2 diabetes showed more resourcefulness when they used more positive thinking, and this decreased their depressive symptoms (Zauszniewski et al., 2002). The relationship between caregivers’ burden and the care recipients’ behavior problems is supported by the premise that the former can increase the latter. This premise, in fact, was supported by the empirical evidence in a pilot randomized trial (Gonzalez et al., 2014). Specifically, Gonzalez and colleagues’ (2014) pilot intervention study showed that enhancing caregivers’ emotional outcomes (primary outcome) reduced the behavior problems in the care recipients (persons with dementia; secondary outcome) as a result of the intervention offered to caregivers.

Step 3: Operationalization of the Study Variables

Operationalization of the study variables includes empirical indicators and scores (Bekhet & Zauszniewski, 2008). Empirical indicators are actual instruments that measure the variables of interest (Bekhet & Zauszniewski, 2008). In a study of dementia caregivers’ burden and their care recipients’ behavioral problems, empirical indicators were identified from reliable and valid measures. The empirical indicator for caregivers’ perceived burden is the 22-item Zarit Burden Interview, developed by Zarit and colleagues (1980). This scale is composed of 22 items that reflect the extent to which caregivers perceive levels of burden when they are taking care of their relatives. The response options are set on a 5-point Likert scale ranging from 0 (*never*) to 4 (*nearly always*).

The empirical indicator for positive thinking skills is the Positive Thinking Skills Scale, developed by Bekhet and Zauszniewski (2013). The 4-point Likert scale ranges from 0 (*never*) to 3 (*always*) to indicate how frequently participants are using eight positive thinking skills. The empirical indicator of resourcefulness skills is the Resourcefulness Scale (Zauszniewski et al., 2006), a reliable and valid measure that assesses individual tendencies to apply personal and social resourcefulness skills to solve behavioral problems. The Resourcefulness Scale consists of 28 Likert-type items answered via a 6-point scale. Respondents indicate the degree to which each item describes their behavior, ranging from 0 (*not at all like me*) to 5 (*very much like me*).

The empirical indicator for recipients’ behavior problems is the Revised Memory and Behavior Problems Checklist (Teri et al., 1992), completed by caregivers. It reflects the overall level of behavior problems, as well as specific areas of problems (memory, depression, disruption). Behaviors are rated by caregivers from 0 (*never occurs*) to 4 (*occurs daily or more often*).

Hypotheses are relational statements between empirical indicators (figure; Bekhet & Zauszniewski, 2008). In the current study, several research hypotheses were tested. The measure of caregivers’ positive thinking was expected to positively affect the measure of resourcefulness and negatively affect the measure of care

recipients' behavioral problems. In addition, the measure of caregiver burden (Zarit Burden Interview) was expected to affect the measure of resourcefulness (Resourcefulness Scale) through the measure of positive thinking (Positive Thinking Skills Scale).

Scores are units of measurements. To calculate the score for the Zarit Burden Interview, scores on individual items are summed. Scores may range from 0 to 88. Higher scores reflect a higher level of burden (Zarit et al., 1980). On the Positive Thinking Skills Scale, scores on individual items are summed; the scores may range from 0 to 24, and the higher the score, the greater the number of positive thinking skills. On the Resourcefulness Scale, items are scored from 0 to 5 (Zauszniewski et al., 2006), and scores range from 0 to 140, with higher scores indicating greater use of resourcefulness skills (Zauszniewski et al., 2006). On the Revised Memory and Behavior Problems Checklist, scores on individual items are summed and divided by 24; it has a range from 0 to 4 (Teri et al., 1992). Descriptive and inferential statistics were used to examine the relationships between dementia caregivers and their care recipients in terms of scores on the measures of the study variables (figure; Bekhet & Zauszniewski, 2008). Analytical strategies included descriptive statistics, correlational analyses, and hierarchical multiple regression.

The table shows the variables that were derived and operationalized from resilience theory. The table provides a summary of the theoretical and operational definitions of the study variables to provide a guide for nursing scientists and nurses working with dementia caregivers and their care recipients (persons with dementia).

Step 4: Portraying the Constructs, Concepts, Variables, and Empirical Indicators in a Hierarchical Structure

The figure shows the theoretical substruction diagram, which clearly illustrates the constructs, the concepts, the variables, and the empirical indicators and the relationships among them, thus reflecting the linkage and logical consistency between the theoretical and operational definitions.

Conclusion and Implications for Nursing Science and Practice

The author used resilience theory to illustrate the articulation and consistency between the theoretical and empirical dimensions of a nursing research study in an area vital to nurses working with dementia caregivers and dementia patients. The model proposed by Zauszniewski and colleagues (2010), in which they specify that the central constructs of resilience theory are risk factors, protective factors, and resilience outcomes, provides a salient approach to investigating the impact of positive thinking (as a protective factor) in mitigating the negative effects of caregivers' burden (as a risk factor) and leads to caregivers' resourcefulness and reduction of care recipients' behavior problems (as target behaviors). The rigorous process of theoretical substruction provides an example of a theoretically sound basis for exploring the role of positive thinking in the lives of dementia caregivers and their care recipients. Indeed, approaching dementia caregivers and their care recipients according to the resilience model has clinical implications. Geropsychiatric nurses working with dementia patients and their caregivers should consider the role of positive thinking in decreasing caregivers' burden, which will in turn affect the care recipients' behavior problems.

In summary, this theoretical substruction facilitates the identification of research hypotheses that are in accordance with the study's theoretical underpinnings, thereby contributing to nursing science and knowledge development. Theory acts as a foundation for designing studies and developing interventions. Through theories, researchers identify the constructs and the concepts and their link to measures. Without the theoretical validity and without ensuring the congruence between the theoretical and the operational definitions, the interpretation of the results might be questionable. As indicated by many researchers, there is scarce evidence of the link among theory, design, and the measures for many published research studies (Ryan et al., 2019). Therefore, there is a need for research exemplars that can be used by new doctoral students to examine the

literature and plan their studies to ensure that the theoretical and operational definitions are linked. Also, this example can be used by novice researchers to guide them through the research process, help them design their research studies, and secure extramural funding (Dulock & Holzemer, 1991).

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