

Psychosocial Adjustment of Spousal Caregivers of Patients With Chronic Pain: A Model of Risk and Resistance Factors

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Abstract

This conceptual article aims to propose a framework of understanding the risk and resistance factors that contribute to the adjustment of spousal caregivers of chronic pain patients (SCCPP). A comprehensive review of literature related to caregivers of patients with chronic pain was performed. Findings from the review were applied to the Wallander et al.'s Risk and Resistance Model of Adjustment, specifically examining outcomes among SCCPP. No statistical results are presented in this conceptual article. We advocate for the need to study and test the adjustment process of SCCPP in a systematic, comprehensive, and theory-driven manner to further understand caregivers' strengths and challenges. This will allow for further rehabilitation interventions to address risk factors and promote resistance factors, allowing for more inclusive mental health care for SCCPP.

Keywords

patients with chronic pain, psychosocial adjustment, resistance factors, risk factors, spousal caregivers

Caregivers of persons with chronic illness are at risk of stress and adjustment-related problems, including physical and psychological health impairments, disruptions in family dynamics, and decreased relationship satisfaction and quality of life (Burton, Newsom, Schulz, Hirsch, & German, 1997; Chronister & Chan, 2006; De Frias, Tuokko, & Rosenberg, 2005). Caregiver adjustment has a profound impact on the well-being of the patient, as the process of adjusting to chronic illness is affected greatly by the functioning of the caregiver. Ultimately, the degree to which the individual with a disability *and* the caregiver are able to cope effectively with the situation contributes to the health and well-being of both individuals (Chronister & Chan, 2006; Elliott, Shewchuk, & Richards, 1999).

The importance of understanding the role of the caregiver in the adjustment process is underscored by a general shift in the health care system. This paradigm shift is notable in the movement from inpatient care that addresses immediate medical needs to outpatient care that addresses residual functional limitations and reintegration into independent living and employment. In addition, this shift is also affected by the shortage of available paraprofessionals to provide assistance with tasks such as daily living skills (McCann & Wadsworth, 1992; Paraprofessional Healthcare Institute, 2001). Consequently, researchers, policy makers, and practitioners have become increasingly interested in the role of caregiving in health care outcomes (Elliott et al., 1999).

Purpose of the Study

Prominent pain researchers have acknowledged the importance of incorporating families as part of the treatment process for chronic pain patients. However, few theoretical models exist with regard to family adjustment and chronic pain (e.g., Kopp et al., 1995; Romano, Turner, & Jensen, 1997; Turk, Rudy, & Flor, 1985). While these emerging theories have served as useful conceptual guides for current research and practice, a comprehensive search of the literature in this area indicates that empirical outcomes from these attempts have not been published. In addition, literature on caregiver adjustment to other disabilities stresses the need for a caregiver of persons with chronic pain model that considers psychological protective factors such as family strength, resiliency, coping, and well-being. This model should also consider social protective factors such as available social support and family strengths, environmental factors such as financial security and adequate health insurance

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coverage, and biological factors such as age and physical health (Risdal & Singer, 2004). Given the need to understand the adjustment of spousal caregivers of chronic pain patients (SCCPP) and the lack of systematic and empirically validated models to drive research and practice, the purpose of this article is to propose a comprehensive, theory-driven conceptual framework for guiding research and clinical practice when working with SCCPP. The proposed framework is adapted from Wallander, Varni, Babani, Banis, and Wilcox's (1988) Risk and Resistance Model of Adjustment. This comprehensive model has been empirically validated and supported within independent research as well as across different medical disabilities. Specific literature on SCCPP is reviewed and contextualized using this model as the basic framework.

Literature Review

Chronic Pain

The International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage" (IASP Subcommittee on Taxonomy, 2003). Chronic pain is pain that persists beyond what would be considered normal tissue healing time (IASP Subcommittee on Taxonomy, 2003). According to a large-scale international study on the prevalence and impact of chronic pain in 15 European countries and Israel, 19% of the 46,394 participants reported having chronic pain for 6 months or more and experienced chronic pain within the last month (Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006). Sixty-six percent reported having moderate pain, and 34% reported severe pain. Forty-six percent reported having constant pain while 54% had intermittent pain. The range of pain duration ranged from 2 to 15 years.

Chronic pain is becoming recognized as a significant national and international health care problem, and the rise in disability associated with chronic pain has been described as reaching epidemic proportions (Lindberg & Bluestein, 2002; Mason, Skevington, & Osborn, 2004). Chronic pain has been linked with mental health disorders, including depression and anxiety, and has also been associated with impairment in activities of daily living. Individuals with chronic pain have been found to be less likely or altogether unable to work outside their homes, and others needed to change employment or lost employment as a result of their pain conditions (Breivik et al., 2006). As a result, significant costs are often associated with disability compensation, loss in work productivity, and treatment side effects.

In contrast to the general caregiving literature, there is a paucity of literature regarding the experience of SCCPP. There is some evidence that suggests that SCCPP experience increased psychological distress, relationship dissatisfaction, financial problems, role changes, and sexual dysfunction (Kerns & Turk, 1984; Leonard & Cano, 2006; Rosenbaum,

2009). However, other research has shown that SCCPP do not necessarily experience distress or negative effects as a result of caregiving (Basolo-Kunzer, Diamond, & Reed, 1991; Feinauer & Steele, 1992; Flor, Breitenstein, & Birbaumer, 1995; Liew et al., 2010). Literature in the areas of positive psychology, resiliency, adjustment, and psychological interventions provide plausible explanations to the varying adjustment ability of caregivers, including stress appraisal, coping resources, personal attributes, and dispositional tendencies (e.g., internal locus of control, optimism, self-efficacy; Carver, Scheier, & Segerstrom, 2010; Horton & Wallander, 2001; Seligman & Csikszentmihalyi, 2000). In addition, Romano and Schmalting (2001) suggested that the heterogeneity of chronic pain diagnoses (e.g., cancer-related, musculoskeletal, neuropathic) may result in different psychosocial profiles (different levels of coping mechanisms, different levels and types of stressors, availability of support), which in turn may contribute to varying adjustment results. Despite the heterogeneity of chronic pain conditions, intervention studies show that couple- or spouse-oriented interventions have a positive impact on the chronic pain patient and SCCPP outcomes. For example, Keefe et al. (1996) found that participation in a long-term spouse-assisted coping skills training intervention resulted in significantly higher levels of pain self-efficacy and increased marital adjustment among patients with knee osteoarthritis. Martire, Schulz, Keefe, Rudy, and Starz (2007) also found that couple-oriented education and support interventions effectively reduced spousal stress, with spouses exhibiting less critical attitudes, higher marital satisfaction, and less depressive symptoms.

Theoretical Framework

Caregiving research has been called "one of the largest and most conceptually sophisticated literatures in health psychology" (Williamson, Shaffer, & Schulz, 1998, p. 152). This is evidenced by various theoretical models of caregiving that examine the relationships between caregiver stress, psychosocial resources, and caregiver well-being (Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch, 1995; Chwalisz, 1996; Haley, Levine, Brown, & Bartolucci, 1987; Lawton, Kleban, Moss, Rovine, & Glicksman, 1989; Pakenham, 1999). In general, these models are consistent with traditional stress process theories, which emphasize the importance of the caregivers' personal and environmental resources in their adjustment as well as overall health and mental well-being. Thus, like any stressor, caregiving stress is considered a psychological situation wherein the degree to which caregiving is perceived as stressful is based on the nature of the transaction between the caregiving situation and the individual's personal and environmental resources. Among the different models used in psychological and adjustment research, Lazarus and Folkman's (1984) Transactional Model of Stress Theory has been commonly adopted in such research. This

model indicates bidirectionality on the relationship between personal characteristics and environmental properties in affecting adjustment outcomes when someone faces an aversive event. Such personal and environmental variables, however, can be buffered by certain variables such as coping (Lazarus & Folkman, 1984).

Although some empirical studies suggest that caregiving may increase distress levels, burden, and marital dissatisfaction (Flor, Kerns, & Turk, 1986; Leonard & Cano, 2006; Zarit, Reever, & Bach-Peterson, 1980), others indicate that the role of caregiving may also provide an opportunity for growth, satisfaction, and challenge (Benner & Wrubel, 1989; Machamer, Temkin, & Dikmen, 2002) as well as improved family functioning through increased emotional bonds (Crow, 1999; Mazur, 2006). While a stress-based model such as the Transactional Model of Stress Theory (Lazarus & Folkman, 1984) has received merits in its application to psychological research, its utilization focused solely on coping and neglected other pertinent factors such as the nature of the stressful event, intrapersonal characteristics, and social support. The Risk and Resistance Model postulated by Wallander and researchers, however, provides a more comprehensive framework that includes variables beyond coping as a pertinent variable in affecting an individual's adjustment in response to a stressful event. Wallander and researchers' model has also been adopted and used in the psychological adjustment research in adults and children as well as their caregivers. Given the merits and the comprehensiveness of this model, we chose to use the Risk and Resistance Model as the framework for the current article.

Risk and Resistance Model of Adjustment: An Introduction

The Risk and Resistance Model (Wallander et al., 1988) was originally developed to investigate the psychological adjustment of children and families with chronic physical disabilities and illnesses. Included in the model are three sets of risk factors: (a) condition parameters (e.g., diagnosis, visibility of the condition, brain involvement, and severity of the condition), (b) functional independence, and (c) psychological stress (e.g., handicap-related problems, major life events, and daily hassles). Similarly, there are three sets of resistance factors: (a) stress processing (e.g., cognitive appraisal, and coping strategies), (b) intrapersonal factors (e.g., temperament, competence, motivation, and problem solving ability), and (c) socioecological factors (e.g., family environment, social support, parental adjustment, and resources). Research exploring the adjustment of caregivers of children with a medical condition reported that in addition to the normative life events and the daily hassles associated with dealing with the illness or the disability of the children, the severity of the child's condition often leads to parental maladjustment not necessarily by the disability itself but due to the

disability-related stress resulting from it (e.g., Brown et al., 2000; McLean, Harvey, Pallant, Bartlett, & Mutimer, 2004). This negative impact, however, can be buffered by resistance factors that moderate or mediate the association between the condition and adjustment (e.g., positive coping, positive stress appraisal, positive locus of control, optimism, adequate social support). Studies adapting this risk and resistance model of adjustment have demonstrated consistent results supporting the positive and negative influence of adjustment outcomes associated with risk and resistance variables, respectively (e.g., Brown et al., 1993; Brown et al., 2000; Dekel, Solomon, & Bleich, 2005; Lutz, Barakat, Smith-Whitley, & Ohene-Frempong, 2004; McLean et al., 2004; Varni, Wilcox, & Hanson, 1988).

Conceptual Framework for the Psychosocial Adjustment of Spousal Caregivers of Persons With Chronic Pain

In this section, we propose a comprehensive framework for understanding the psychosocial adjustment of SCCPP. Notably, the general examples cited in the Wallander et al. model may not apply to SCCPP, while others may, depending on the clinical population examined. For example, brain involvement is a logical disability-related factor for a clinical population that involves brain damage (e.g., traumatic brain injury). However, a study applying the Wallander and researchers' model on a different disability group and caregiving role (e.g., prostate cancer and female spousal adjustment) may not explore brain damage but other pertinent variables unique to this clinical condition, such as sexual functioning. In this review, the general framework of the Risk and Resistance Model will be adapted with the added specificity from chronic pain literature on spousal and caregiver adjustment.

Figure 1 depicts the diagrammatic representation of the proposed framework. The first column represents the three risk constructs, including the pain condition, functional dependence, and psychological stress. The second column represents the three resistance constructs, including stress processing, intrapersonal, and socioecological factors. The third column represents the outcome construct, which is conceptualized as including a multitude of adjustment measures commonly proposed in the literature addressing psychological adjustment among patients and caregivers, including psychopathology, health, quality of life, life satisfaction, and marital adjustment. Under each of the risk and resistance constructs, unique factors that make up its respective construct are listed as bullet points.

The following discussion provides a detailed review of each factor within each construct in this conceptual framework. Because adequate evidence has yet to accrue in terms of mediating or moderating effects, we are not in the position

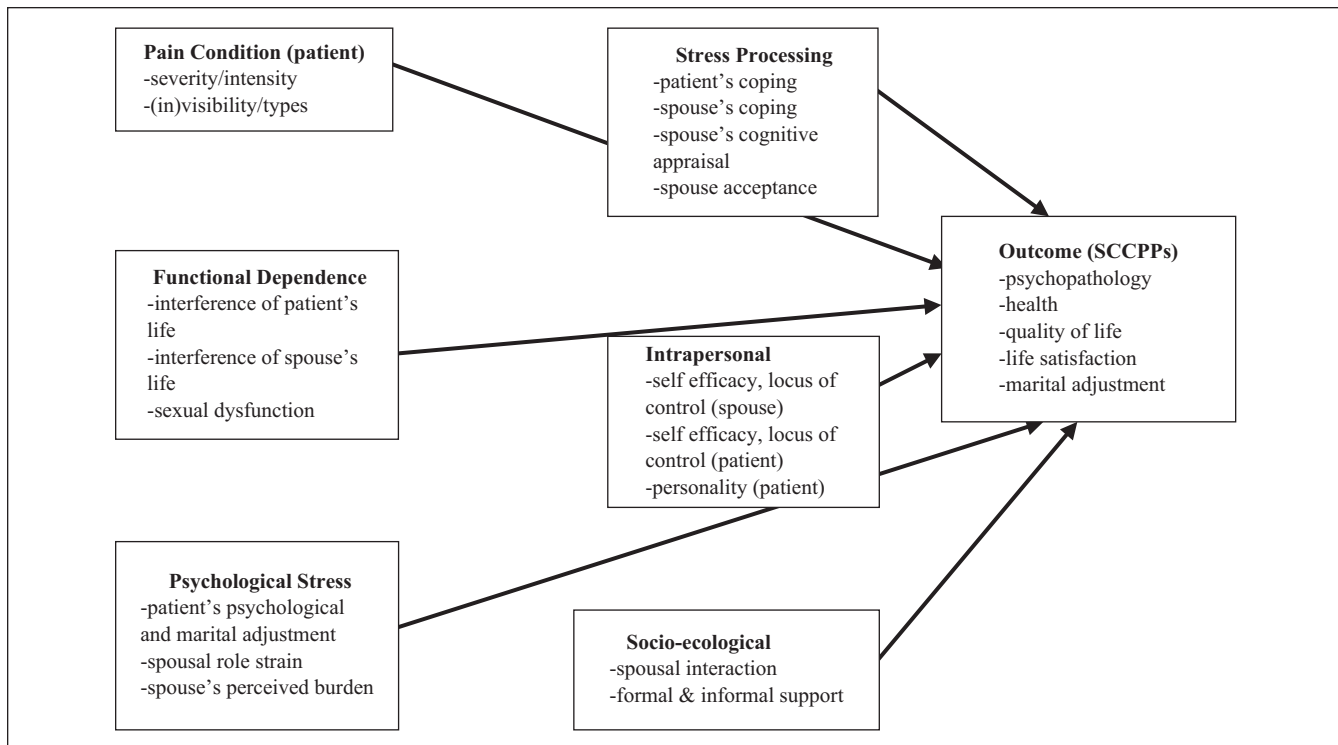


Figure 1. Diagrammatic representation of the risk and resistance factors in affecting caregiver's adjustment process.

Note. Column 1: Three risk factor groups are depicted in directing to the outcome factors. Column 2: Three resistance factor groups are depicted directing to the column factors. Column 3: outcome factors. Risk and resistance constructs are guided according to Wallander et al.'s model. Specific factors under each constructs were listed according to existing literature in chronic pain and caregiving. SCCPP = Spousal Caregivers of Chronic Pain Patients.

to integrate such effects with confidence in the framework we propose. Therefore, the diagram represents a conceptual diagram, but not a path analysis or structural equation model for any direct, indirect, or mediating effects of the variables.

Outcomes

Much of the literature that has examined emotional distress in SCCPP suggests that depression and anxiety are among the most frequently reported complaints (e.g., Ahern & Follick, 1985; Flor, Turk, & Scholz, 1987; Leonard & Cano, 2006; Schwartz, Slater, Birchler, & Atkinson, 1991; Turk, Flor, & Rudy, 1987). In addition, evidence also indicates higher marital distress among couples in whom the SCCPP is affected by the chronic pain condition of their spouse (e.g., Flor et al., 1986; Geisser, Cano, & Leonard, 2005; Leonard & Cano, 2006). Conversely, positive outcomes of adjustment are also evident among SCCPP, and clinical interventions have been shown to enhance these outcomes. For instance, after engaging in a couple-oriented education and support intervention for osteoarthritis patients, SCCPP showed higher marital satisfaction, less depressive symptoms, and better sense of caregiver mastery (Martire et al., 2006). Therefore, research in measuring adjustment outcomes should encompass a variety of measures as well as positive and negative impacts.

Risk Constructs

Patient's pain condition. The first risk construct is the phenomenon that defines what is unique about the diagnosis of interest and its associated clinical manifestations. Under this framework, this risk construct is the patient's chronic pain condition. The pain condition involves the severity, intensity, and the often invisible nature of the condition. Chronic pain studies have found that the subjective level of the patient's chronic pain condition is related to caregiver's psychological well-being. Early study findings by Maruta, Osborne, Seanson, and Halling (1981) noted that 65% of SCCPP reported a decline in marital satisfaction since the onset of their partner's condition. Schwartz and colleagues (1991) found that 28% of SCCPP reported depressed mood for which level of the patient's pain was one of the three significant predictors. SCCPP also reported more personal distress when the chronic pain patients reported higher levels of pain and/or anger. In addition, Leonard and Cano (2006) found the severity of chronic pain correlated significantly and positively with SCCPP's adjustment in terms of depression and marital dissatisfaction.

Another aspect of the pain condition construct relevant to the adjustment of SCCPP is the invisible nature of the chronic pain condition. Invisible conditions are often caused by chronic illnesses such as neuromuscular diseases (Matthews

& Harrington, 2000), and they are occasionally of unknown etiology. Understanding conditions such as fibromyalgia and chronic fatigue syndrome may be difficult due to the fact that etiology, diagnosis, and treatment are not readily present. Similarly, chronic pain conditions may have no overt or obvious source of pain (e.g., visible physical injuries), and therefore, it may be difficult for SCCPP to fully empathize with their spouse's pain. Faucett and Levine (1991) suggested that this type of situation often results in others questioning the intensity of the pain as well as the psychological consequences that accompany the condition. SCCPP's lack of understanding of the pain condition and chronic pain patients' behavioral manifestations (e.g., engaging in pain behaviors, avoiding physical activity, decreased social or occupational functioning) may lead to development of negative or critical views of the patient. Furthermore, this misperception dramatically affects the adjustment of the SCCPP. Martire and Schulz (2007) found that SCCPP who had an accurate perception and understanding of their partners' pain responded less negatively, provided emotional support that was more satisfying to the chronic pain patient, and reported less stress from providing support and assistance. Although the focus of this study was on the impact of spousal response to chronic pain patients, it also pointed to the importance of the perception of the SCCPP in affecting their own stress level and willingness to provide support. Early study findings by Flor et al. (1987) suggested that SCCPP's level of understanding of the chronic pain condition of their spouses was directly related to their own psychological adjustment and well-being.

In sum, while the pain condition can cause distress to the chronic pain patient, it can also affect SCCPP in a substantial manner. In particular, the severity and invisibility of the condition may affect spousal perception, which in turn may affect interactions with chronic pain patients. However, the functional limitations caused by the chronic pain conditions appear to have a larger impact than the pain condition itself on the adjustment of SCCPP. This will be discussed under the next construct of functional dependence.

Functional dependence. In our framework of adjustment of SCCPP, the second risk construct pertains to the chronic pain patient's functional limitations and degree of interference in daily life activities related to the chronic pain condition, for the pain patients themselves and to the SCCPP. Functional dependence has been found to have a negative effect on SCCPP. For example, high levels of spouse-rated patient psychosocial disability were found to be associated with greater marital dissatisfaction (Geisser et al., 2005). In addition, spousal perception of the patient's functional limitations was found to be significantly related to the adjustment of SCCPP (Geisser et al., 2005; Martire & Schulz, 2007). Kopp et al. (1995) found that among patients with headaches and chronic low back pain, the reduction of leisure activities for the patients and their caregivers (interference) was related to negative overall family functioning.

Sexual dysfunction is commonly reported among chronic pain patients and is therefore an important factor of this construct. Chronic pain patients frequently indicate dissatisfaction with their sex lives, changes in frequency or complete elimination of sexual activity, and a decrease in relationship intimacy (Esmail, Huang, Lee, & Maruska, 2010; Esmail, Munro, & Gibson, 2007). Furthermore, practitioners treating musculoskeletal conditions are often not trained to discuss sexual concerns, and therefore, these issues may be under-addressed (Rosenbaum, 2009). Numerous factors have been associated with reported sexual dysfunction, including psychological factors, self-esteem, medication side effects, and relationship problems (Rico-Villademoros et al., 2012). Sexual dysfunction has been found to be more prevalent and frequently reported by those patients with greater overall disability, higher levels of depression, impaired coping, and shorter pain duration (Kwan, Roberts, & Swalm, 2005). Naturally, SCCPP can be affected by the sexual dysfunction of chronic pain patients. These findings highlight that functional dependence and life interference appear to be important aspects of SCCPP's adjustment, more so than the disability or diagnosis itself. Therefore, it is imperative to further investigate this factor to explore its clinical implications when working with this population.

Psychological stress. The third risk construct includes psychological stress. This construct is defined as any challenge that one faces without having adequate resources with which to cope. In this conceptual framework, this risk construct includes the stress and tension resulting from the chronic pain patients' own psychological and marital maladjustment and SCCPP's role strain, as well as subjective burden. Early study findings by Flor et al. (1986) suggested that the best predictors of SCCPP marital satisfaction were a combination of their own depressed mood and the marital satisfaction of the chronic pain patient, accounting for 45% of the total variance. Similarly, Schwartz and colleagues (1991) found that chronic pain patients' reported anger and hostility and spousal level of marital satisfaction were found to be predictors of spousal depression. The authors suggested that the relationship between lower marital satisfaction and more reported distress could be due to an approach-avoidance method of dealing with conflict. Specifically, SCCPP may feel sympathy for the chronic pain patient's pain condition but may avoid him or her due to their hostile behaviors. In addition, SCCPP who feel that they have no control over the situation may experience feelings of helplessness. From a learned helplessness perspective, this perceived lack of control may result in depressive symptoms among SCCPP.

Other dimensions of SCCPP stress include burden associated with and resulting from the presence of cumulative stressors. Subjective burden is defined as the perception of psychological distress, depression, anxiety, demoralization, and generalized loss of personal freedom attributed directly to caregiving (Lawton et al., 1989). Caregiving stress includes *objective burden* and *subjective burden*. Subjective

burden involves the amount of psychological strain experienced by caregivers that is attributable to changes in the patient (Brooks, Campsie, Symington, Beattie, & McKinlay, 1986; Zarit et al., 1980). Within the area of chronic pain, studies indicate that SCCPP experience high levels of subjective burden in the area of worry, financial setbacks, loss of freedom, and physical and emotional demands of caregiving (Liew et al., 2010; Roy, 2006). Various personal, environmental, and patient-related factors contribute to perceived burden. It has been reported that SCCPP who lack open communication with the chronic pain patient experience higher levels of subjective burden and strain (Porter, Keefe, Wellington, & deWilliams, 2008). Positive relationships between chronic pain patients' levels of physical and psychological well-being and perceived burden of SCCPP have also been found (Beckham, Burker, Rice, & Talton, 1995). In addition, Martire et al. (2006) found that among other chronic pain patients' pain and psychosocial variables, pain severity predicted the SCCPPs' perceived stress level and their perceived level of mastery, which in turn affect SCCPPs' psychological well-being.

Another important facet of psychological stress in SCCPP is role strain, which may be conceptualized as stress resulting from the dual role of spouse *and* caregiver. Role strain theory posits that multiple roles may result in competition for an individual's time while draining psychological and physical resources (Goode, 1960). Schumacher et al. (2008) identified two levels of role strain in caregivers. At the task specific level, role strain is characterized by difficulty completing tasks and behaviors that impair caregiving. A more global level of role strain occurs when the caregiver believes that the entire caregiving situation is stressful. Caring for a spouse or partner with a chronic health condition is often a role that is imposed without choice or notice (Winter, Bouldin, & Andresen, 2010). Ahern and Follick (1985) noted that the level of disability incurred by a chronic pain patient contributes to the stress of the caregiver and stems from acute and long-term demands and the accumulation of other responsibilities and stressors on the SCCPP. The impact of this change may affect the SCCPP in areas such as social and economic situations (Faucett & Levine, 1991; Roy, 2006) and physical and mental health (Ostwald, 2009; Pinquart & Sorensen, 2003; Vitaliano, Zhang, & Scanlan, 2003).

In conclusion, this body of research supports the idea that the relationship adjustment of the chronic pain patient has an impact on the adjustment of SCCPP. In addition, issues stemming from the stress of maintaining dual roles of spouse and caregiver should continue to be investigated in future research.

Resistance Constructs

Stress processing. Stress processing represents the first resistance construct in this conceptual framework. Stress processing, as defined by the Wallander and researchers (1988), are

the cognitive appraisals and coping strategies used to buffer stress. Before discussing the literature supporting the stress processing aspects of SCCPP adjustment, a brief discussion of the cognitive-behavioral transactional model of chronic pain (CBTM; Kerns & Weiss, 1994; Turk & Kerns, 1985) is merited here, as it will link the perceived burden/stress, stress processing, intrapersonal, and social support aspects of this conceptual framework.

The CBTM posits that family (especially SCCPP) tends to be the primary source of social reinforcement; therefore, its role becomes imperative in affecting the adjustment of SCCPP. One of the key elements of the CBTM is the interaction or reinforcement that SCCPP provide in facilitating the positive or negative perception and behavior of chronic pain patients. The concept of "transtheoretical" indicates that the appraisal of the situation of the patients and the SCCPP can play an important role in affecting each other's coping and adjustment. Family, therefore, plays an important component in this model by searching for information and evaluating and seeking resources, as well as making decision based on information gathered from others and the environment. Family appraisal (from both sides) plays a role in developing a schema or beliefs about the situation (coping with the adversities of chronic pain and coping with the challenges of having a family member with chronic pain). Central to this CBTM is the appraisal-coping process, where appraisal of the situation influences the subsequent coping mechanisms and strategies and is important in determining whether the specific response will be reinforced or discontinued.

As defined earlier, stress, a risk construct, is defined as the perceived burden, subjective stress, and role strain associated with the caregiving role (Brooks et al., 1986; ; Zarit et al., 1980). Stress processing or coping, on the other hand, refers to practical actions taken and can include an array of resources, styles, and efforts that people draw on when faced with life stressors to increase a sense of well-being and avoid being harmed by stressful demands. Definitions of the construct have encompassed a range of personal characteristics including stable and enduring traits (resources), habitual styles, or behavioral patterns (styles), as well as situation-specific cognitive and behavioral efforts applied in a given circumstance (efforts). Numerous types of coping styles and efforts have been conceptualized and tested in the literature. The most popular conceptualization is the typology of emotion-focused, problem-focused, and avoidant-focused coping efforts (Chronister, 2004; Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001, Lazarus & Folkman, 1984).

The role of coping in the adjustment process among chronic pain patients is well documented. However, the role of coping among SCCPP's adjustment processes is limited. The studies that do exist suggest that SCCPP's and chronic pain patients' coping styles moderate SCCPP's stress reactions. For example, reduced SCCPP stress was associated with chronic pain patients who had higher adaptive coping styles and fewer pain behaviors (Junghaenel, 2007). In

addition, SCCPP who used positive coping styles and expressed an understanding of the patient's disability reported higher levels of psychosocial adjustment and well-being (Flor et al., 1987). SCCPP's negative coping styles, specifically magnification, helplessness, and catastrophizing, have been found to be significantly correlated to their own depression and marital dissatisfaction (Leonard & Cano, 2006). Furthermore, patients' helplessness and catastrophizing behaviors were also associated with depressive symptoms for SCCPP.

Chronic pain patients who use the coping style of "acceptance" report greater psychological well-being (Viane et al., 2003). However, little empirical support exists regarding SCCPP's acceptance of their partners' chronic pain and how it relates to their own adjustment. A recent study by Mercurio-Riley (2011) found that SCCPP who reported higher levels of acceptance of their partners' pain also reported better quality of life across physical, psychological, social-relationships, and environmental domains of quality of life. In addition, caregivers in this study who were more accepting of their partners' pain were also found to be more resilient. Studies that have looked at similar constructs provide some support for the role of caregiver acceptance and interaction styles in affecting the adjustment process of the chronic pain patient. McCracken (2004) found that solicitous behaviors (i.e., excessive expression of sympathy) by SCCPP are related to increased patient pain behaviors, while punishing responses from SCCPP such as anger, ignoring, and frustration are also related to maladaptive patient outcomes, including less activity engagement and pain willingness (i.e., engaging in activities despite pain and doing little to avoid or control painful experiences) and less overall acceptance of pain. In the generic rehabilitation literature, the concept of acceptance of a disability has been well documented (i.e., that a person with a disability who accepts his or her disability as part of the self is associated with better adjustment; Bishop, 2005; Li & Moore, 1998; Livneh & Antonak, 1997). However, this concept has not been applied to how others' acceptance of a patient's limiting condition or disability would affect the adjustment of their caregivers. An exploration of the coping style of acceptance in SCCPP may provide additional evidence regarding its role in adjustment, well-being, greater relationship satisfaction, and improved quality of life.

While ample research evidence supports the importance of positive and active coping mechanisms among chronic pain patients in dealing with their pain and disability-related stress, limited research has been conducted in the area of stress processing as a coping mechanism among SCCPP. For instance, aligning with the CBTM model discussed earlier, an understanding of the cognitive processes underlying the ways in which SCCPP perceive and cope with their stressors is important in understanding their own adjustment. In addition, the concept of acceptance of the spouse's chronic pain condition by SCCPP can be explored to understand how this acceptance may have an impact on SCCPP themselves.

Intrapersonal variables. The second resistance construct consists of intrapersonal, that is, internal characteristics of the affected individual (in this case the SCCPP) when faced with the stresses and challenges of caregiving, as well as internal characteristics of the chronic pain patients. Such variables will be discussed in relation to the SCCPPs' framework of adjustment and include sense of coherence, self-efficacy, locus of control, optimism, and personality. Antonovsky's (1979) concept of sense coherence is defined as a mixture of optimism and sense of control; one has a sense of confidence about positive outcomes despite adversities in life. Several studies suggest that self-efficacy, as defined as one's perceived ability and confidence in performing or carrying out a task, plays an important role in patients' own adjustment.

In addition, other studies also explored how the self-efficacy level of the patient and the caregiver would affect the other's adjustment. The level of the self-efficacy of patients with rheumatoid arthritis has been found to be one of the strongest predictors of caregiver burden and optimism (Beckham et al., 1995). Self-efficacy in patients with cancer was found to be associated with less anxiety and caregiver strain (Campbell et al., 2004).

Porter and colleagues (2008) investigated the role of self-efficacy in pain communication between SCCPP and chronic pain patients with osteoarthritis. Findings indicated that higher levels of self-efficacy among SCCPP regarding pain communication were related to their own positive affect. Specifically, SCCPP who were more confident in their ability to understand and respond effectively to the patient's pain experienced more positive affect. In addition, higher levels of self-efficacy among SCCPP were significantly and negatively correlated with SCCPP's negative affect. Results from Campbell et al. (2004) indicated that higher levels of caregiver self-efficacy in relation to patients' symptom control were associated with caregivers' reported higher quality of life, better reported health and mental health, reduced depressive symptoms, and less perceived caregiver strain.

In addition to self-efficacy, other intrapersonal variables such as locus of control have been investigated in relation to SCCPP's adjustment. Early study findings suggested that SCCPP's sense of control was related to their adjustment and well-being (Flor et al., 1987). Finally, SCCPP also reported higher levels of control (manageability, sense of coherence) and it related to better SCCPP adjustment when compared with spouses with a partner without any disability (Romano et al., 1997). It was suggested that lower cohesion is a result of the SCCPP's perception that the chronic pain patients cannot contribute to household duties and be a supportive member of the family. Therefore, caregivers exhibit high levels of control in response to the need for organization and rules to help lessen the demands. Intrapersonal factors, similar to the perceived stress/burden factors and the psychological processing previously described, relied on the subjective appraisal of the SCCPP. Despite the fact that there is a paucity of literature on the intrapersonal variables and their

effect on caregiver adjustment, their relationship has been supported in findings in literature of other chronic conditions. For example, Piira, Chow, and Suranyi (2002) found in caregivers of patients with chronic diabetes that caregiver locus of control was a significant predictor of caregivers' negative affect.

The attachment style (e.g., personality traits or interpersonal dynamics) of chronic pain patients and SCCPP has also been studied in relationship to SCCPP's adjustment (Porter, Davis, & Keefe, 2007). Chronic pain patients with secure attachment styles or who are more interpersonally independent were found to have higher levels of self-efficacy, optimism in relation to symptom management, and positive adjustment outcomes (Mikulincer & Shaver, 2003). Other researchers have found that maladaptive attachment styles are related to negative outcomes. Attachment anxiety (overdependence) relates to "hypervigilance," wherein patients tend to exaggerate their appraisal of a threat. These patients exhibit poor coping abilities, overdependence on others, and prolonged emotional distress (Mikulincer & Shaver), which in turn is related to a higher level of pain (McDonald & Kingsbury, 2006; McWilliams & Asmundson, 2000). There is also evidence that chronic pain patients who have an avoidance attachment style tend to use "deactivating" methods to deal with the threat related to caregiving resulting in the patient minimizing attention to and avoiding threat-related cues, as well as underappraising threat and using avoidant and emotion-focused coping styles (Mikulincer & Shaver). Porter et al., (2012) reported that spouses of lung cancer patients with an anxious attachment style had higher levels of caregiving strain, and those with avoidant attachment style experienced lower levels of marital adjustment and lower self-efficacy in relation to assisting the patients.

In summary, this evidence supports the importance of examining the impact of intrapersonal variables of chronic pain patients and SCCPP in further understanding SCCPP's adjustment process. Specifically, locus of control, self-efficacy, and personality styles (e.g., attachment) appear to play important mediating roles in SCCPP's adjustment (e.g., McDonald & Kingsbury, 2006; Piira et al., 2002; Porter et al., 2008). The effects of intrapersonal variables, similar to those from stress processing and perceived stress discussed earlier, are intertwined with the perception of the SCCPP. Ongoing research is needed to provide support on how these intrapersonal variables play a role in SCCPP's adjustment process.

Socioecological variables. The third resistance construct is defined as external and/or environmental variables that affect one's adjustment. Pertaining to the SCCPPs' framework, these socioecological variables include spousal interaction and social support.

In the chronic pain literature, social support is contextualized in terms of how support or SCCPP's behaviors feed into the adjustment of chronic pain patients. Referring to the

cognitive-behavioral transtheoretical chronic pain model (Kerns & Weiss, 1994; Turk & Kerns, 1985) discussed earlier, empirical studies have documented the effect of different types of SCCPP response to chronic pain patients and how such responses affect the pain behavior and functioning. However, these studies have focused primarily on the adjustment of the chronic pain patients and far less on SCCPP adjustment. The various aspects of responses include solicitous, distracting, negative, and punishing spousal responses (Cano, Miller, & Loree, 2009; McCracken, 2004; McCracken & Eccleston, 2005; Raichle, Romano, & Jensen, 2011; Romano, Jensen, Good, & Hops, 2000). Specifically, spousal solicitous behaviors and distracting responses have resulted in negative outcomes among chronic pain patients, namely, increased pain behaviors, increased pain-related functional limitations, and decreased activity (Cano et al., 2004.; Raichle et al., 2011; Romano et al., 2000). Negative responses from spouses have similar negative effects on chronic pain patients. Specifically, it has been reported that chronic pain patients who receive negative responses from SCCPP may perceive the SCCPP to be angry or frustrated with them (Cano, Weisberg, & Gallagher, 2000). This in turn leads to decreased activity among the patients and increased reported affective distress or depression in chronic pain patients and SCCPP (Cano, Gillis, Heinz, Geisser, & Foran, 2004; Faucett & Levine, 1991; Turk, Kerns, & Rosenberg, 1992). Interestingly, negative responses in relation to increased affective distress of patients were buffered by a globally satisfying relationship while depression was reported among chronic pain patients if negative responses from SCCPP occurred within a globally dissatisfying relationship (Goldberg, Kerns, & Rosenberg, 1993; Kerns, Haythornthwaite, Southwick, & Giller, 1990). A punishing response by SCCPP, however, was positively correlated with chronic pain patients' activity. In addition, spouses who attributed their partner's pain to emotional causes have been found to give more punishing responses, possibly due to decreased sympathy for the pain condition (Cano et al., 2009). The impact of the specific chronic pain behaviors manifested by the chronic pain patients on the SCCPP, however, is not well researched.

Additional evidence providing support for the role of social and family support and functioning in the adjustment process is found in the broader caregiving literature but less so within the chronic pain caregiver adjustment literature. Family support was associated with higher dyadic adjustment among spouses and patients with traumatic brain injuries (Moore, Stambrook, Peters, & Lubusko, 1991). Other findings have indicated that social support is associated with lower perceived burden and better quality of life and moderates family functioning as well as caregivers' distress, well-being, and adjustment (Blankfeld & Holahan, 1999; Chronister & Chan, 2006; Ergh, Rapport, Coleman, & Hanks, 2002; Harris, Godfrey, Partridge, & Knight, 2001).

Research concerning how family dynamics, pain behaviors of patients, and the different types of social support (e.g., formal, informal, respite care) affect caregivers is lacking in the chronic pain literature. As noted in the chronic illness literature, those are important factors that may influence caregivers' adjustment. Capitolo (1998) studied the effect of family variables on SCCPP adjustment to chronic pain patients and found that disengaged and rigid family systems, as well as spousal negative response to pain behavior, were associated with depression among SCCPP. In addition, there may be other environmental factors that may affect caregivers' adjustment, including accessibility, availability, and affordability of health care.

Summary of Relationships Among Variables

The proposed framework depicted in Figure 1 is based on the three risk constructs and three resistance constructs guided by Wallander's empirically supported model associated with the psychosocial adjustment of caregivers of individuals with health-related chronic conditions, with added specificity to the factors in each of the six constructs in relation to adjustment outcomes among SCCPP.

The three risk and three resistance constructs included in this conceptual framework each contribute *directly* to the negative and buffering effects on SCCPP adjustment, respectively, as shown in each of the lines connecting each of the six constructs to the outcome construct. Within the three resistance constructs, the socioecological construct relates to the intrapersonal construct as well as the stress processing construct. Second, the availability of support is associated with the perception of stress and how one feels about his or her control over the adverse situation (unidirectional). Third, the intrapersonal and the stress processing constructs, however, can operate in both directions. Fourth, the stress processing and the intrapersonal constructs, which are relatively stable characteristics of a person, would not affect an individual's environmental resources.

Within the three risk constructs, the disability construct relates to the functional dependence as well as the psychological stress constructs, and the stress construct also relates to the functional dependence construct. Furthermore, all three risk constructs represented in the far left column have been shown to be mediated and/or moderated by either one or a combination of the resistance constructs shown in the middle column.

Several additional trends in the literature were observed in which the relationships among certain variables were less conclusive. First, chronic pain's resultant functional limitations and dependence, rather than the chronic pain condition itself, appears to have the strongest impact on SCCPP adjustment. While ample literature in the general caregiving field supports the influence of the stress processing construct of perceived burden and stress on caregiver adjustment, this has not been adequately studied and documented in the SCCPP

adjustment literature, especially the duality of the caregiving role. In addition, the role of coping—by SCCPP and the chronic pain patients—and SCCPP role strain warrant further study and evidence to support its effect on SCCPP adjustment. In terms of the intrapersonal construct, self-efficacy, locus of control, and, to some degree, personality have been shown to have a relationship to SCCPP adjustment. SCCPP's understanding, knowledge, and acceptance of the patient's pain need further examination to explore its impact on SCCPP adjustment.

With regard to the socioecological construct, numerous studies have demonstrated the effect of negative responses from SCCPP on the pain behaviors of the chronic pain patients (e.g., McCracken & Eccleston, 2005; Romano et al., 2000). However, how this process affects SCCPP remains unanswered. Research on the specific types and functions of formal and informal social support systems that are effective for SCCPP and chronic pain patients is lacking. In addition, while there is some evidence for the relationship between family functioning and caregiver adjustment, this area needs to be explored further with regard to its application to the adjustment of chronic pain patients and SCCPP.

Limitations

We acknowledge several limitations in this developing framework. Specifically, some of the particular pain-related variables drawn from the literature may show a correlational instead of a causal relationship to the adjustment of SCCPP. This is in part due to the paucity of current literature on the topic as well as a lack of research design sophistication in the studies that do exist.

In addition, the framework discussed in this article represents a conceptual, not an empirically validated, path model of the relationships among all the risk and resistance constructs. Therefore, although such a working framework for SCCPP adjustment provides some conceptual insights into and awareness of how different constructs are related to each other and/or may interact with each other in affecting the adjustment of SCCPP, this framework lacks the empirical support to clearly delineate the specific strengths of the mediating and moderating effects among those constructs. This lacking can be attributed to methodological inadequacy. Specifically, there are limited empirical studies that demonstrate the relationships among constructs, and methodological design may not allow reasonable hypotheses to be set and tested on the overall model of adjustment. These variables may not allow a complex model to be tested simultaneously using a strong data analysis methodology. In the risk and resistance variables where no evidence in the chronic pain literature exists, evidence will be drawn from other caregiving adjustment literature to demonstrate the importance of incorporating and testing those variables with the chronic pain population. In addition, the factors under each of the constructs are not exhaustive. For instance,

certain demographic factors such as gender, age, ethnicity, income, and education level are excluded in the current framework. Other personal and developmental caregiver factors including history of mental illness, substance abuse, childhood trauma, and family upbringing are not included. This does not suggest that those personal factors or other developmental factors are not important, but such factors may not fit into the three risk and resistance factors that are postulated within the framework of the Wallander et al.'s model.

Applications of Research and Practice

The current framework represents a conceptual model of the relationships among all the risk and resistance constructs and provides some conceptual insights into and awareness of how these constructs are related and/or may interact with each other in affecting the adjustment of SCCPP. We anticipate refining the broader constructs and factors comprising these risk and resistance constructs as additional evidence emerges. Due to the fact that few studies exist with vigorous research design and an adequate sample size, as well as the likelihood of their exclusion of some other potential important variables (e.g., health care accessibility, demographic variables), a perfect picture becomes difficult to present. In addition, based on the results of some of the chronic pain literature, the various risks and resistance constructs appear to have a mediating or moderating effect on each other, rather than a direct relationship with all risk and resistance constructs pointing singly and directly to the outcomes. However, our intention is to begin this conversation to advocate for evidence-based studies to demonstrate important constructs and factors that affect SCCPP adjustment. Other constructs and factors that we may not have included (e.g., health care availability, demographic factors) may also be important variables that affect caregiver adjustment among the chronic pain population. Those variables may need to be studied and added to this working framework.

With vigorous methodological design, empirical evidence among the factors and constructs of each area can be used to test a larger path model or structural equation model in which all variables can be tested simultaneously for their interaction and latent effects. The accumulation of evidence in supporting each of the constructs, therefore, can help in building the broader picture of the adjustment of SCCPP. Finally, this conceptual framework can be used clinically to help SCCPP understand the potential factors that may put them at risk and resistance factors that may protect them from distress when providing care to their spouses with a chronic pain condition. This conceptual framework may also provide insights into the types of interventions that will help the chronic pain patient as well as the SCCPP in adjustment, positive mental health, quality of life, and marital satisfaction.

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