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## Resilience Among Patients Across the Cancer Continuum: Diverse Perspectives

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### Abstract



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Each phase of the cancer experience profoundly affects patients' lives. Much of the literature has focused on negative consequences of cancer; however, the study of resilience may enable providers to promote more positive psychosocial outcomes before, during, and after the cancer experience. The current review describes the ways in which elements of resilience have been defined and studied at each phase of the cancer continuum. Extensive literature searches were conducted to find studies assessing resilience during one or more stages of the adult cancer continuum. For all phases of the cancer continuum, resilience descriptions included preexisting or baseline characteristics, such as demographics and personal attributes (e.g., optimism, social support), mechanisms of adaptation, such as coping and medical experiences (e.g., positive provider communication), as well as psychosocial outcomes, such as growth and quality of life. Promoting resilience is a critical element of patient psychosocial care. Nurses may enable resilience by recognizing and promoting certain baseline characteristics and optimizing mechanisms of adaptation.

### Keywords

resilience; cancer; adaptation cancer screening; cancer survivorship; end-of-life care; palliative care

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The Institute of Medicine called in 2007 for an integrated, multidisciplinary approach to better care for the “whole” patient with cancer (Adler & Page, 2008). Since then, focus has increased on the psychosocial aspects of cancer care, including routine screening for unmet needs and psychological distress and the incorporation of multidisciplinary care teams to standard practice models (Carlson, Waller, & Mitchell, 2012; Fann, Ell, & Sharpe, 2012). Psychosocial care among patients with cancer and those at high risk for developing cancer aims to recognize and address the effects of cancer screening and treatment on the mental status, emotional well-being, and quality of life (QOL) of patients, family members, and caregivers.

Much of the research to date has focused on negative outcomes, such as psychological distress and depression (Carlson et al., 2012). Comparatively, few descriptions exist of positive psychosocial factors before, during, and after cancer. The task is complicated, in part, by varying theoretical descriptions of resilience (i.e., as a baseline characteristic, as a mechanism to promote positive outcomes, or as an outcome itself).

### Resilience

Some have suggested that resilience is defined by baseline characteristics or traits, which are identified at the time of first interactions and enable individuals to thrive in the face of adversity (Connor, 2006; Richardson, 2002). Examples include basic demographic variables and personal resources, such as hope (i.e., positive readiness and expectancy), motivation, optimism, sense of coherence (i.e., recognizing the world as meaningful and predictable), preexisting social support, and spirituality (Herth, 1992; Snyder et al., 1991).

Others have described resilience as a particular trajectory or mechanism of positive adaptation that changes over time and protects against psychological distress (Mancini &

Bonanno, 2009). Some mechanisms can be nominally identical to baseline characteristics; they are distinguished as mechanisms in settings where they change over the course of the illness. For example, coping strategies may be considered an inherent baseline characteristic if measured at the point of screening, whereas coping during and following a diagnosis may be considered a mechanism if it changes throughout the experience. Interventions to promote resilience may attempt to modify the variables and influence the type of trajectory that patients face, such as by using interventions to teach active stress management, coping skills, mindfulness, and goal setting. Other mechanisms are unique to the medical experience itself (e.g., positive patient-provider communication).

A third school of thought is that resilience is evidenced by relatively positive psychosocial functioning that develops as a consequence of traumatic stress (Rutter, 2006). Such resilience outcomes include personal growth (e.g., post-traumatic growth [PTG]) and the absence of psychological distress.

The cancer continuum represents a series of potentially traumatic events, beginning at the time of risk assessment and screening. Healthy individuals may perceive great stress from the potential of a life-threatening diagnosis. Recently diagnosed patients must cope with many life changes and continue to adapt throughout treatment. Survivors meet additional challenges with the adjustment to their “new normal” and the increased risk of poor physical and psychosocial outcomes. Patients who face death from their disease also encounter challenges as they struggle to maintain a positive outlook or find meaning at the end of life. Those phases of the cancer experience may have unique elements and shared aspects of resilience. For example, patients may draw on individual characteristics (e.g., hope) throughout the cancer trajectory; however, the stress and requisite adaptation associated with cancer screening is vastly different from the stress of a terminal diagnosis. Similarly, resilience may manifest at each time point with different clinical characteristics, and it may be fostered by various types of interventions or interactions.

The authors of the current review represent many of the disciplines involved in whole-patient care, including oncology, pediatrics, family medicine, nursing, social psychology, behavioral medicine, health services, and public health (Adler & Page, 2008). The authors reviewed the literature describing resilience at each stage of the cancer continuum (i.e., genetic risk assessment or screening, diagnosis, treatment, survivorship, and end of life). The aim was to describe and summarize three diverse definitions of resilience. The overall objective was to enable healthcare providers and researchers to identify and foster resilience to better meet the complete psychosocial needs of patients with cancer.

## Methods

From January to August 2012, a literature search was conducted using MEDLINE<sup>®</sup>, PsycINFO<sup>®</sup>, Web of Knowledge, and Google Scholar to find studies assessing resilience during one or more stages of the cancer continuum for adults. To be considered for the review, articles had to explicitly discuss and define resilience and its operationalization, include only adult participants undergoing at least one stage of the continuum (e.g., women participating in screening mammography), and be written in English. Search terms used

included *adjustment, care for self, cognitive processing, coping, growth, health-related QOL, hope, inner strength, medical experience, optimism, positive psychological functioning, reduced distress, social support, and spirituality*. The authors designated constructs as baseline resilience characteristics, resilience mechanisms, and resilience outcomes. Baseline characteristics were defined as measured factors existing prior to or at the beginning of a stage (e.g., optimism at the point of screening). Mechanisms were defined as the variables that were expected to change over time and in relation to patient experiences (e.g., coping following a new diagnosis of cancer). Outcome variables were psychosocial outcomes measured during or after a stage (e.g., PTG among cancer survivors). To facilitate readability, terms that appeared to measure the same construct, overlapped, or were closely related were collapsed and unified.

## Results

The authors identified 57 distinct studies of resilience published from 1993–2012 in clinical oncology settings (see Table 1). The following sections highlight elements of resilience at each phase of the cancer experience. The majority of research concerning resilience during stages of the cancer continuum regarded treatment (n = 8, 14%) and survivorship (n = 41, 72%). Although resilience baseline characteristics, mechanisms, and outcomes were found throughout the continuum, the representation of each varied across different stages.

### Risk Assessment and Cancer Screening

Risk assessment and cancer screening may be perceived as stressful, particularly among individuals with a family history of cancer. The identification of baseline characteristics and mechanisms may relate to positive psychological outcomes and optimize appropriate adherence to follow-up care recommendations.

Few other studies describe resilience in the cancer screening phase. Among 71 families with hereditary colorectal cancer, baseline hope has been associated with reduced distress (Ho, Ho, Bonanno, Chu, & Chan, 2010). Members of families with known genetic susceptibility to cancer have reported that baseline spirituality and adoption of optimism and mechanisms of social support encourage greater self-care and, ultimately, enable inner strength for individuals and their families (Mendes & Sousa, 2012).

### Cancer Diagnosis

News of a cancer diagnosis can be distressing for many reasons, including facing a potentially life-threatening disease, fear of the unknown, and practical hardships (e.g., immediate changes to one's personal, professional, and financial life). Baseline characteristics and mechanisms in the immediate diagnosis period may be helpful to understand patient medical and psychosocial morbidities during and after treatment. For example, patients with greater internal strength at baseline have reported reduced distress, better coping strategies, and improved QOL (Kenne Sarenmalm, Browall, Persson, Fall-Dickson, & Gaston-Johansson, 2013). Those themes were common across many studies describing resilience in the peridiagnosis period. Among women with newly diagnosed breast cancer, coping at diagnosis has been associated with growth or finding meaning in life

(Jim, Richardson, Golden-Kreutz, & Andersen, 2006). Coping during diagnosis also has been associated with improved QOL later in treatment and better self-care during survivorship (Gregg, 2011; Stanton & Snider, 1993).

### **Cancer Treatment**

Cancer treatment has its own stressors, including treatment challenges, adverse events, and life changes. Promoting resilience mechanisms during cancer treatment may encourage better adaptation and other positive psychosocial outcomes during and after treatment. Studies have suggested that baseline characteristics and resilience mechanisms can affect patient psychosocial functioning. In a study of 68 patients with newly diagnosed head and neck cancers, baseline characteristics (e.g., being married, optimism) and mechanisms of coping contributed to growth (Llewellyn et al., 2013). Among women with breast cancer, optimism and satisfaction with the medical experience were associated with reduced distress during treatment and up to six years after its completion (Lam et al., 2010; Lam, Shing, Bonanno, Mancini, & Fielding, 2012). Similar findings have been described in patients with colorectal cancer and recurrent ovarian cancer (Hou, Law, Yin, & Fu, 2010; Ponto, Ellington, Mellon, & Beck, 2010).

Coping also appears to be a critical element of resilience outcomes for patients with cancer; early coping was shown to promote growth during adjuvant therapy and QOL following completion of therapy among women with breast cancer (Silva, Crespo, & Canavarro, 2012). Among patients with hepatocellular carcinoma, coping enabled adjustment and better self-care during and after treatment (Fan & Eiser, 2012).

### **Survivorship**

Cancer survivors may be challenged by medical and psychosocial consequences of their diseases and may struggle to adapt to life after cancer. Survivorship literature has focused primarily on negative outcomes, such as depression and cancer-related distress. Although assessing those areas is important, the growth that can come from the cancer experience should not be ignored. Many cancer survivors have reported positive outcomes, such as growth and improved QOL (Aspinwall & MacNamara, 2005; Lelorain, Tessier, Florin, & Bonnaud-Antignac, 2012).

Among survivors, baseline characteristics such as optimism and hope have been associated with better adjustment and growth (Bozo, Gündogdu, & Büyükasik-Colak, 2009; Carver, Smith, Petronis, & Antoni, 2006; Chambers et al., 2012; Gall, 2004; Kung et al., 2006; Perkins et al., 2007; Petersen et al., 2008; Prati & Pietrantonio, 2009; Stanton, Danoff-Burg, & Huggins, 2002). In addition, age has been consistently associated with outcomes, in that older survivors reported better QOL but less growth than younger survivors (Gall, 2004; Pudrovskaya, 2010; Salsman, Segerstrom, Brechting, Carlson, & Andrykowski, 2009; Widows, Jacobsen, Booth-Jones, & Fields, 2005). Marital status also has been implicated. Breast cancer survivors with partners have reported more positive psychological functioning than those who were single (Carver et al., 2006; Chambers et al., 2012; Tessier, Lelorain, & Bonnaud-Antignac, 2012).

Coping also has been associated with growth (Lelorain et al., 2012; Prati & Pietrantonio, 2009; Schmidt, Blank, Bellizzi, & Park, 2012; Thornton & Perez, 2006). Among breast cancer survivors, those who used positive coping techniques have reported better QOL and reduced distress (Kraemer, Stanton, Meyerowitz, Rowland, & Ganz, 2011). The amount and quality of social support can enhance outcomes, including growth (Chambers et al., 2012; Prati & Pietrantonio, 2009; Sabiston, McDonough, & Crocker, 2007; Schroevers, Helgeson, Sanderman, & Ranchor, 2010; Tallman, Shaw, Schultz, & Altmaier, 2010). Evolving spirituality, a mechanism, also has been associated with resilience outcomes (Gall, 2004; Schreiber & Brockopp, 2012; Wenzel et al., 2002). For example, prayer has been associated with growth (Levine, Aviv, Yoo, Ewing, & Au, 2009).

### **End of Life**

Interest has been shown in the palliative care experiences of patients with cancer with respect to symptom management and survival time (Temel et al., 2010). Promoting adjustment may affect QOL for patients and their caregivers. Studies of patients with brain tumors have associated baseline resilience characteristics (e.g., cognitive processing, hope, spirituality) with improved inner strength, QOL, social support, and positive psychological functioning (Cavers et al., 2012). Among patients with end-stage brain cancer, inner strength recognized during the cancer experience has enabled appropriate coping and growth mechanisms, ultimately allowing for the prioritization of attainable and appropriate goals, such as QOL rather than a cure when necessary (Lipsman, Skanda, Kimmelman, & Bernstein, 2007).

### **Resilience Interventions**

Interventions devoted to promoting resilience have been developed only for survivors so far (Duijts, Faber, Oldenburg, van Beurden, & Aaronson, 2011; Loprinzi, Prasad, Schroeder, & Sood, 2011). For example, stress management and resilience training is a brief, group-based cognitive behavioral therapy that characterizes resilience as a mechanism; patients are taught to redirect their perceptions of stressful experiences and focus on adjustment and growth (e.g., gratitude, acceptance, purpose). Among breast cancer survivors, the program was found to reduce distress and increase QOL, and it measured inner strength in the presence of adversity (Loprinzi et al., 2011). Interventions that target other aspects of the cancer experience may indirectly promote resilience as well. For example, meaning-making interventions have been shown to improve optimism and self-efficacy among patients with breast and colon cancers (Lee, Robin Cohen, Edgar, Laizner, & Gagnon, 2006).

### **Discussion**

The current article discusses resilience across stressful stages of the cancer continuum for adults. This article is timely because healthcare providers and researchers have highlighted the importance of resilience. In 2002, the first Biennial Cancer Survivorship Research Conference was titled “Resilience Across the Lifespan.” As a follow-up on that conference, a special issue of *Cancer* in 2005 was dedicated to resilience (Rowland & Baker, 2005).

In the current article, the authors described resilience in the three general ways it has been characterized in existing literature throughout the cancer continuum (i.e., as a baseline characteristic, as a mechanism to promote positive outcomes, and as an outcome itself). A similar framework has been proposed for understanding resilience in the setting of pediatric cancer (Rosenberg, Baker, Syrjala, Back, & Wolfe, 2013).

Although the majority of research describing resilience has focused on treatment and survivorship, the authors were able to identify components found throughout the majority of the stages of the cancer continuum. For all stages of the cancer experience, studies described baseline resilience characteristics (e.g., optimism). Positive outcomes may be enhanced by recognizing and promoting those characteristics at any stage of the continuum. For example, resilience-promoting interventions have sought to modify the way in which survivors approach their lives. Similarly, studies from all phases of the continuum included descriptions of resilience mechanisms. Resilience mechanisms are elements of the cancer experience that change over time and may be modifiable toward increased well-being. Examples include coping mechanisms, social support, new or changing spirituality, and aspects of the medical experience (e.g., supportive provider communication, performance status). Resilience mechanisms could be targeted for future interventions to foster resilience; for example, interventions may seek to increase social support during diagnosis and treatment to improve well-being. Most studies across the stages used reduced distress as a main outcome or marker of resilience.

In addition to shared elements, the current review highlights components unique to different stages. For example, adjustment at the time of diagnosis requires dramatic life changes to meet the demands of treatment, whereas adjustment at the end of life may imply changed goals of care and a focus on QOL. Similarly, PTG and QOL are critical components of resilience during diagnosis, treatment, survivorship, and at the end of life, but those constructs were not associated with resilience during screening or risk assessment.

## Limitations

Despite encouraging findings, major gaps exist in the literature for definitions of resilience, and the current review has notable limitations. The diversity of definitions, literature, and study design (e.g., qualitative versus quantitative, cross-sectional versus longitudinal) precluded a formal systematic review with meta-analysis. The review exemplifies the heterogeneity of approaches to resilience across disciplines. Several studies were not included in this review because measured factors were not explicitly identified as resilience. Several studies addressed positive outcomes that were associated with resilience in other stages (e.g., social support), but not in the screening stage (Varela, Jandorf, & Duhamel, 2010). In addition, certain characteristics (e.g., demographics, growth) have not been measured across all stages. Additional research identifying those gaps will allow for identification of shared and unique aspects of resilience across the cancer continuum. The authors focused on patients, but studies of resilience among caregivers and healthcare providers also may be beneficial, particularly given the findings on the importance of social support. Having similar coping styles between caregivers and patients has been known to predict better adjustment than those with dissimilar styles (Kraemer et al., 2011). Resilience

interventions have only been developed with regard to survivorship, and additional interventions may improve resilience among patients with cancer in all stages.

## Implications for Practice

Factors of resilience include baseline characteristics, mechanisms of adaptation, and psychosocial outcomes. The current review may inform healthcare providers and researchers on key points regarding resilience. Oncology nurses may be able to recognize protective or risk characteristics (e.g., self-perceived optimism, lack of optimism) and enable coping by supporting cognitive processes. This may be as simple as assisting with problem solving, giving information in small amounts, listening, and expressing care and concern (Hagopian, 1993). That approach applies to patients at all stages, including cancer screening, because several characteristics, mechanisms, and outcomes are common to all stages in the continuum.

Developing earlier interventions related to coping and stress management may be a way to foster resilience outcomes in patients with cancer across the cancer continuum. Similar programs may serve as a base for future research (Steinhardt & Dolbier, 2008). Practices and resilience interventions unique to specific stages may improve well-being and adherence to care guidelines (e.g., PTG for survivors, hope for high-risk individuals).

Researchers have indicated future research on resilience in survivors should focus on how positive changes affect physical and mental health over time, understanding the multiple pathways to resilience and how those pathways vary from person to person, and elucidating the psychosocial processes that support resilience so they can be used in interventions to promote resilience (Aspinwall & MacNamara, 2005). The current review provides important implications for practice concerning multi-disciplinary teamwork. Promoting resilience is a critical element of whole-patient psychosocial care; multidisciplinary healthcare teams can foster resilience by recognizing and optimizing aspects of resilience throughout the cancer continuum.

## Conclusion

The current review was a first step to integrate research on resilience and positive psychological consequences. The review was approached through a multidisciplinary lens and relied on the strengths of the authors' different backgrounds. The authors synthesized the literature with a whole-patient-centered care focus. The review provided important information to consider at each stage of the continuum and offered healthcare providers and researchers different forms of resilience to incorporate in whole-patient approaches.

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### Implications for Practice

- ▶ Identify baseline characteristics that may be protective or risk factors concerning psychosocial outcomes.
- ▶ Promote resilience by becoming familiar with mechanisms of adaptation most likely to promote positive psychosocial outcomes.
- ▶ Track and encourage positive psychosocial outcomes among patients and survivors.

**TABLE 1**  
**Studies Highlighting Elements of Resilience Among Patients With Cancer in the Cancer Continuum**

Study	Sample	N	Characteristics	Mechanisms	Outcomes
<b>Risk Assessment or Screening</b>					
Ho et al., 2010	Individuals with family history of colorectal cancer mutations	76	Hope	-	Reduced distress
Mendes & Sousa, 2012	Families with breast, ovarian, and colorectal cancer mutations	9	Spirituality	Optimism, social support	Hope, inner strength
<b>Diagnosis</b>					
Gregg, 2011	Breast	23	Demographics, spirituality	Coping, spirituality	Growth
Jim et al., 2006	Breast	167	-	Coping	Growth
Kenne Sarenmalm et al., 2013	Breast	131	Inner strength	Coping	QOL, reduced distress
Stanton & Snider, 1993	Breast	36	Demographics, optimism	Coping	QOL, reduced distress
<b>Treatment</b>					
Fan & Eiser, 2012	Hepatocellular	33	-	Coping, medical experience	QOL
Hou et al., 2010	Colorectal	234	Hope, optimism	Medical experience, social support	Reduced distress
Lam et al., 2010	Breast	285	Optimism	Medical experience	Reduced distress
Lam et al., 2012	Breast (six years postdiagnosis)	186	Optimism	Medical experience	Reduced distress
Llewellyn et al., 2013	Head, neck	68	Demographics, optimism	Coping	Growth
Ponto et al., 2010	Ovarian	60	Demographics	Medical experience	Adjustment, growth
Silva et al., 2012	Breast	50	-	Coping	Growth, QOL
<b>Survivorship</b>					
Bellizzi et al., 2010	Breast	802	Demographics	Spirituality	QOL
Blank & Bellizzi, 2006	Prostate	490	Optimism	-	Coping, positive psychological functioning
Bozo et al., 2009	Breast	104	Optimism	Social support	PTG
Carver et al., 2006	Breast	163	Optimism	-	QOL
Chambers et al., 2012	Colorectal	763	Demographics	-	QOL
Chan et al., 2011	Breast	170	Cognitive processing	-	PTG
Costanzo et al., 2009	Various	389	-	-	Adjustment
Gall, 2004	Prostate	34	Spirituality	-	QOL

Study	Sample	N	Characteristics	Mechanisms	Outcomes
Kraemer et al., 2011	Breast	139	Coping	-	Adjustment
Kung et al., 2006	Head, neck, thyroid	190	Optimism	-	QOL
Lelorain et al., 2012	Breast	28	Coping, social support	-	PTG
Levine et al., 2009	Breast	175	Spirituality	-	Reduced distress, QOL, social support
Lopez-Class et al., 2011	Breast	28	-	-	QOL
<b>Survivorship</b>					
Loprinzi et al., 2011	Breast	20	-	-	QOL, reduced distress
Low et al., 2006	Breast	538	Coping	-	Growth, QOL, reduced distress
Marcus et al., 2010	Breast	304	-	-	Growth, QOL, reduced distress
Mizuno et al., 2011	GI	25	-	-	QOL
Mols et al., 2009	Breast	183	-	-	Growth
Morrill et al., 2008	Breast	161	PTG	-	QOL, reduced distress
Mosher et al., 2009	Breast, prostate, colorectal	753	Demographics	-	QOL
Park & Fenster, 2004	Various	167	-	PTG	Positive psychological functioning, spirituality
Perkins et al., 2007	Breast	127	Inner strength, optimism, social support, spirituality	-	Positive psychological functioning, QOL, reduced distress
Petersen et al., 2008	Breast	268	Optimism	-	QOL
Pudrovska et al., 2010	Various	497	Demographics	-	Growth
Sabiston et al., 2007	Breast	20	-	-	Positive psychological functioning
Salsman et al., 2009	Colorectal	55	Cognitive processing	-	Growth
Schmidt et al., 2012	Various	5	Coping, social support, spirituality	-	Growth
Schroevers et al., 2010	Various	206	Social support	-	Growth
Stanton, Danoff-Burg, & Huggins, 2002	Breast	70	Coping	-	Positive psychological functioning, reduced distress
Stanton, Danoff-Burg, Sworowski, et al., 2002	Ovarian	200	-	-	QOL
Stanton et al., 2000	Breast	92	Coping	-	QOL, positive psychological functioning
Stanton et al., 2005	Breast	558	-	-	QOL, reduced distress
Tallman et al., 2010	Hematologic	25	Demographics, optimism, social support	-	Growth, QOL, reduced distress



Study	Sample	N	Characteristics	Mechanisms	Outcomes
Tessier et al., 2012	Breast	321	–	–	QOL
Thornton et al., 2012	Lung	118	Positive coping	–	Growth
Thornton & Perez, 2006	Prostate	106	–	–	Growth
Wenzel et al., 2002	Ovarian	49	Spirituality	–	QOL
Widows et al., 2005	Hematologic	72	Coping, demographics	–	Growth
<b>Survivorship</b>					
Zebrack et al., 2008	Breast, prostate, colorectal, lymphoma	193	Demographics	–	QOL
Zucca et al., 2010	Various	863	Social support	–	Coping
Zucca et al., 2012	Various	863	–	–	QOL
<b>End of Life</b>					
Cavers et al., 2012	Brain	26	Hope	Medical experience, social support, spirituality	Adjustment, QOL, positive psychological functioning, social support
Lipsman et al., 2007	Brain	29	–	Medical experience	Adjustment, growth, QOL

GI—gastrointestinal; PTG—post-traumatic growth; QOL—quality of life