

Am I a Survivor? Illness Identity, Centrality, and Well-Being Among Cancer Survivors

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A Dissertation Submitted in Partial Fulfillment of the Requirements for the
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ABSTRACT

Surviving cancer often involves identity reconstruction and the integration of the experience into one's identity. The goal of this study was to contribute to the limited research on illness centrality among cancer survivors by examining the relationship between illness centrality and its effects on meaning in life, life satisfaction, and benefit finding. Contrary to what was hypothesized, illness centrality was positively related to meaning in life and unrelated to life satisfaction. However, as hypothesized, there was a significant positive association between illness centrality and benefit finding. As predicted, the relationship between illness centrality and both meaning in life and life satisfaction were moderated by stress-related growth, such that illness centrality was only related to higher meaning in life when stress-related growth was positive and was only related to lower life satisfaction when stress-related growth was negative. Research findings suggest that post-cancer, individuals may begin to reconstruct their identity by adopting cancer-related identity labels. Despite differing attitudes related to the term "cancer survivor," this term can have positive associations with well-being. This study found that identifying as a cancer survivor was positively associated with stress-related growth, meaning in life, life satisfaction, and benefit finding. Furthermore, some research suggests that how cancer survivors respond to having had cancer varies across the lifespan. Young adults have been found to experience greater impacts associated with cancer and yet are not as extensively studied as their older counterparts. This study explored the relationship between age and this study's main variables and found that age was negatively correlated with illness centrality but unrelated to well-being outcome variables.

Keywords: cancer survivor, illness centrality, stress-related growth, meaning, life satisfaction, benefit finding

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CHAPTER 1: INTRODUCTION

Cancer is one of the global leading causes of morbidity with approximately 14 million new diagnoses in 2012, and is expected to rise by about 70% over the next two decades (Cancer, 2018). It is also the second leading cause of death worldwide, responsible for 8.8 million fatalities in 2015. Although the prevalence of cancer continues to increase, so do improvements in the detection and treatment of cancer, with significant decreases in mortality among those diagnosed with cancer over the past four decades (Wronksi, 2015). An updated report by the American Cancer Society, in collaboration with the National Cancer Institute, estimates that there are more than 15.5 million cancer survivors alive in the United States as of 2016, and that number is expected to grow to more than 20 million by 2026 (Simon, 2016). This increase in survivorship warrants a need to understand cancer's long-term effects on the well-being of cancer survivors.

Surviving cancer can have positive effects such as having a greater appreciation of life, experiencing improved interpersonal relationships, and having an enhanced and more fulfilling sense of spirituality and meaning in life (George & Park, 2017; Morgan, 2009). However, some cancer survivors experience an array of physical and psychological problems related to cancer and to its treatment (O'Hea et al., 2016; Wronksi, 2015). In coping with the uncertainty of their illness, cancer survivors may also experience existential suffering, which can be related to lower levels of meaning in life and life satisfaction. The stress caused by all phases of the cancer experience often produces an enormous sense of fear and uncertainty about the future that can be related to diagnoses of anxiety, depression, and other forms of psychological distress (Ryan et al., 2005). Considering the different ways individuals react to life after cancer treatment, there remains a strong need to account for these differences.

Cancer has been found to impact self-identity in several ways (Zebrack, 2000), particularly affecting the cancer-related identities survivors adopt post-diagnosis and the extent to which survivors integrate their cancer experience into their self-concept (Park, Bharadwaj, & Blank, 2011). After being diagnosed, cancer survivors are faced with the task of reconstructing a new identity that accommodates previously held identities and their post-cancer identity. Adopting cancer-related identities such as “cancer survivor” and integrating the illness into their identity, known as *illness centrality*, has several implications for psychological well-being (Helgeson, 2011; Park et al., 2011; Park, Zlateva, & Blank, 2009b). There is some research that suggests that thinking of oneself as a “cancer survivor” has positive benefits, but the research is relatively limited. Moreover, there remains uncertainty as to whether illness integration is beneficial or not.

Compared to older adults, a cancer diagnosis in young adults between the ages 18 and 35 is rare. However, there are more than 60,000 young adults ages 20 to 39 diagnosed with cancer each year in the United States (What are the Key Statistics? 2015) and there are more than 1 million young adult cancer survivors in the United States (Report of the Adolescent, 2006). Although young adults face challenges similar to their older counterparts, they may encounter disruption in their age-related developmental tasks that include establishing social and financial independence, identity exploration, and starting a family (Park, Wortmann, Hale, Cho, & Blank, 2014). Studies have also found that young adult cancer survivors are more likely to experience more psychological distress than older survivors possibly due to the combination of achieving age-appropriate milestones and simultaneously coping with a life-changing cancer diagnosis (Cho & Park, 2015; Kumar & Schapira, 2013; Zebrack, 2011). It is therefore surprising that young adult cancer survivors have been relatively understudied when compared to older adults.

This study examined the effects of illness identity and illness centrality on the well-being of cancer survivors. It attempted to provide a more comprehensive understanding of these factors by distinguishing between the identity labels the individuals adopt and the degree to which the illness is central to their self-concept. It examined how illness centrality is associated with stress-related positive and negative changes post-cancer and how this interaction influences indicators of well-being. Finally, this study looked at age differences, something often missing in previous research, by specifically examining relationships between age and this study's main variables.

LITERATURE REVIEW

CANCER-RELATED IDENTITY

Cancer has been found to significantly impact self-identity, which has emerged as a key area of research to better understand psychological adjustment after a cancer diagnosis (Zebrack, 2000). Its impact on one's sense of self is not universal but rather individually and socially constructed (Smith, Klassen, Coa, & Hannum, 2016). Regardless of cancer type, severity, or prognosis, those who have survived cancer need to discover how their new role as a cancer survivor will affect their self-identity and their daily life. The increase in survival rates among those diagnosed with cancer has greatly impacted terminology used to describe individuals diagnosed with cancer, specifically replacing the use of "victim" or "patient" which has a negative connotation to the arguably more empowering term, "survivor" (Bellizzi & Blank, 2007). Adjusting these labels can have a great influence on how people who have had cancer view their life currently and continue to plan for their future. Going through a cancer diagnosis and its treatment holds considerable potential to shift the way that people see themselves and their relationship to the world (Smith et al., 2016), ultimately affecting their well-being (Zebrack, 2000).

Identity Theory

Identity theory has emerged as a useful framework in understanding the process of adopting illness-related identities and how that affects the self (Thoits, 1991). Identity theory focuses on the stability and change in identity over the life course and the importance individuals attach to specific roles. The more salient the role-identity, the more meaning and purpose the individual should derive from it and therefore, the more that identity should influence psychological well-being (e.g. I am a mother, college professor). Significant life stressors like a

life-threatening illness may result in changes in the importance attached to these roles. These changes can alter aspects of one's self-concept. Cancer is one example of a life-threatening illness that can possibly alter the significance of specific identities and replace them with primary identities related to the illness (Deimling, Bowman, & Wagner, 2007). Zebrack (2000) quotes a survivor who reports that having had cancer outweighed everything else going on in his life. Soon after receiving a cancer diagnosis, individuals are faced with the difficult task of reconstructing their identity (Little, Paul, Jordens, & Sayers, 2002; Park et al., 2009b). Both the physical and emotional effects of cancer treatment can impact how well an individual performs roles that are central to his or her identity, such as family roles or professional roles (Deimling et al., 2007). This process of reconstructing identity is ongoing, going through several alterations throughout diagnosis, treatment, and long-term survival. Cancer survivors may want to restore previously held identities (e.g. professional and family roles), develop new identities, or learn to accommodate both (Deimling et al., 2007; Little et al., 2002). Other people close to the survivor (e.g. family, friends, and peers) may have a prior understanding of that person's identity and it may be difficult to communicate this new sense of self with them (Little et al., 2002). Identity challenges among cancer survivors also arise in some part, because the roles of a survivor are much less clear than those of a patient.

Cancer Survivor Defined

Over the past 40 years, the concept of "survivor" has been a socially acceptable identity to adopt following a cancer diagnosis (Deimling et al., 2007). Previously, the term was used to define someone who has lived free of cancer for at least five years (Mullan, 1985). However, in the 1980's, Fitzhugh Mullen, an American physician, cancer survivor, and one of the founders of the National Coalition for Cancer Survivorship (NCCS), expanded the term cancer survivor to

include all stages related to the cancer experience (Morgan, 2009; Mullan, 1985). As a result, the NCCS states that a person becomes a cancer survivor the moment they are diagnosed and has to rethink their life and make adjustments to it and remains a cancer survivor for the remainder of their life (Cheung & Delfabbro, 2016). Survivorship includes acute survival, extended survival, and permanent survival (Mullan, 1985). Mullan defined acute survival as the moment the patient is diagnosed with cancer and the main goal is to survive aggressive treatment. Once remission is achieved, the patient enters extended survival, which includes the termination of treatment and reintegrating into one's former life while also confronting the possibility of the cancer reoccurring. Lastly, permanent survival is associated with being cured of the disease at which the possibility of recurrence is minimal. Both Mullan's expansion of the term "cancer survivor" and the increase in successful cancer treatments have influenced the term "survivor" being embraced by the media, researchers, and advocacy groups (Cheung & Delfabbro, 2016).

In spite of recognizing the importance and popularity of the term cancer survivor, there is a disagreement on how and when it should be defined. Researchers use a variety of definitions with each one formulated to define the researcher's area of interest (Cheung & Delfabbro, 2016). Some use the end of active treatment as an appropriate time when someone becomes a cancer survivor but this can be problematic as there are patients who receive long-term treatments who are unsure if they should be considered a patient or not (Khan, Rose, & Evans, 2012b). Other researchers use a cutoff of 5 years post diagnosis for defining a survivor. Although this 5-year time period may be appropriate for cancers where the majority of patients survive more than 5 years, some cancers like lung and pancreatic have a 1-year survival rate. It is not clear if those that survive that first year are considered to be cancer survivors as well. There are also a number of people that live many years past a cancer diagnosis but are not considered to be cancer-free.

Other researchers have suggested that perhaps for some patients who have had certain cancer types (e.g. non-Hodgkin's lymphoma) and may have had a period of "watchful waiting" prior to intensive treatment may have a less defined transition between treatment and survivorship (Smith et. al., 2016). Some researchers have proposed that it is best practice to allow the way a cancer survivor is defined be dependent on the type of cancer and the individual experience of the person who has been diagnosed (Khan, Rose & Evans, 2012b).

Attitudes Towards Being a Cancer Survivor

Cheung and Delfabbro (2016) conducted a review of qualitative and quantitative research on search terms including "cancer", "survivor" and "identity" and they identified five categories in which individuals diagnosed with cancer could fall under: embracing, constructive, ambiguous, resisting, and non-salient. The embracing category is when an individual identifies as a survivor and accepts the dominant image of a survivor. They often feel like they have fought and have beaten cancer and visually represent the role (e.g. cancer-related events, wearing cancer ribbons) (Kaiser, 2008; Smith et al., 2016). The constructive group identifies as a survivor but is selective about what they identify with and/or alters the meaning. For example, they identify as being a survivor but acknowledge having to live with ongoing fears of recurrence (Kaiser, 2008). Those that fall under the ambiguous category are unsure about the term survivor. Although they may like the term, they're not sure if their experience qualifies them to be part of the cancer survivor community or may feel that their fear of recurrence prevents them from fully accepting the term (Miller 2015; Smith et al., 2016). Individuals that fall under the resisting category dislike the term survivor or do not want to be labeled as such even if they acknowledge fitting the criteria to be one. They often find the term inappropriate and possibly offensive or feel that it is not a suitable way to define them (Miller, 2015; Smith et al., 2016). Lastly, those that are

considered part of the non-salient category have never heard of the term or even considered themselves to be a survivor. This was more prominent among older women who may have other more defining moments in life and didn't find their lives after having had cancer any different from their lives before (Kaiser, 2008).

Accepting and Rejecting the Cancer Survivor Identity

Studies have found that individuals with a history of cancer are more likely to endorse identifying as a “survivor” as their preferred cancer label identity (Belizzi & Blank, 2007; Park et al., 2009b). Several studies have confirmed higher endorsements of the survivor identity: 86% in a study of mostly older and long-term survivors (Diemling et al., 2007) and 78% of adult breast cancer survivors (Jagielski, Hawley, Corbin, Weiss, & Griggs, 2012). A study on cancer survivors, ages 18-55, found that the most frequently endorsed identity was cancer survivor (83%) followed closely by “someone who has had cancer” (81%), which is considered to be more neutral term (Park et al., 2009b). However, one study of older men with prostate cancer found that “someone who has had cancer” was most often endorsed (Belizzi & Blank, 2007). This finding was replicated among a sample of young adult cancer survivors, ages 15-39, who found that “someone who has had cancer” was the most endorsed label (75%), with only 55% endorsing survivor (Cho & Park, 2015). This study also found that young adult survivors tend to adopt multiple identities. It is possible that survivors are able to recognize different identities as part of their experience and that those different identities are impacted by different aspects of their experience (Park et al., 2009b). No study has found that patient or victim was the most frequently endorsed. It is important to note that the specific percentages of endorsement may vary depending on how cancer-related identities are measured as some researchers ask participants to choose only one identity to describe themselves (Belizzi & Blank, 2007) or to rate

the extent to which multiple cancer identities describe themselves (Park et al., 2009b). In some studies that have used open-ended questions (Smith et al., 2016) or a formal interview style (Kaiser, 2008) to measure endorsement of the survivor label, findings suggest that participants rarely voluntarily identified as a cancer survivor, only doing so after being prompted.

Researchers have identified several predictors of identifying as a cancer survivor including gender, type of cancer and prognosis. When examining specific cancer types, Cheung & Delfabbro's (2016) review identified that 77.9% of adult women diagnosed with breast cancer identified as cancer survivors, as opposed to 30.6% of adult males with a prostate cancer diagnosis. Deimling et al., (2007) found similar differences with adult survivors who were diagnosed with prostate cancer being less likely to identify as survivors when compared to those who had breast or colorectal cancer. Researchers also suggest that the type of treatment received may influence adopting the survivor label, finding that adult women ages 18 through 60 who had breast cancer and underwent chemotherapy were more likely to identify as a survivor than those who did not (Jagielski et al., 2012). This is particularly interesting because this study found a negative correlation between receiving chemotherapy and perceived prognosis meaning that those who receive chemotherapy possibly have a poorer prognosis than those who do not. However, it is possible that having gone through the stressors related to chemotherapy may lead to a sense of having earned the title of "survivor". Studies evaluating if age is a predictor of identifying as a survivor are limited but one study found that age was not associated with identifying as a cancer survivor (Jagielski et al., 2012).

Cheung & Delfabbro (2016) reviewed possible reasons that may lead to the identification as a survivor. For some people, the term "cancer survivor" is an appropriate and factual description of their experience with cancer. This experience has become an important part of

their life and their sense of self. Second, having positive thoughts may lead to identifying as a survivor. Studies have shown that certain traits, such as optimism, play a role in cancer identity (Diemling et al., 2007). Several participants reported feeling optimistic regarding their illness and believing that they would survive because of their positive attitude (Allen & Roberto, 2013). Religious faith has also been associated with optimism with cancer survivors believing that their faith in God has brought them through their illness (Diemling et al., 2007). Several participants reported “I knew God allowed me to survive” or “God brought me through this”. Another factor in survivor identification includes whether or not the individual is experiencing any cancer-related symptoms (Jagielski et al., 2012). Individuals have reported that they feel like a survivor when they no longer feel sick, while those who were still experiencing cancer-related symptoms were more likely to identify as patients. Studies have also shown that some predictors of the survivor identity include successful treatment and/or getting desirable medical results. Additionally, identifying as a cancer survivor has been shown to increase if the individuals believe to have a “very good” prognosis compared to others or if they recalled being told by a medical professional that they were cured.

Although it has become a socially acceptable identity, a “survivor” identity is not universal for everyone who has had cancer because some who may be considered a survivor may not actually identify as such (Kaiser, 2008). There has been some resistance in using the cancer survivor label in both in the U.S. and other parts of the world because it ignores individual differences that range from type of cancer, treatment, or prognosis and also ignores differences based on gender, age, and ethnicity (Khan et al., 2012b). Some people who have had cancer find the survivor label inappropriate because they believe that claiming to be a survivor insinuates that survival is a choice instead of luck or good medical treatment and in doing so, feel that this

disrespects those who have died from cancer (Khan, Harrison, Rose, Ward & Evans, 2012a). The societal connotations related to the term survivor may place unwanted pressures and expectations on people who have had cancer (Bell & Ristovski-Slijepcevic, 2013) like that the illness is in the past or that they should be grateful for their second chance in life. Although some may find these expectations reassuring, others may find it limiting. People who have had cancer have reported feeling that the label survivor is unfitting because the term doesn't recognize the possibility of death from future recurrences (Smith et al., 2016). This study on cancer survivors ages 45-74 found that two participants who had been diagnosed with non-Hodgkin's lymphoma at least three years prior, reported that they distanced themselves from the survivor label because it insinuated that cancer was in the past, when in fact they considered it an ongoing struggle or a perceived threat of possible recurrences in the future (Smith et al., 2016). Some felt that it was dangerous to tempt fate by telling others they had survived. Kaiser (2008) also found that many adult women who have had cancer believe the term "survivor" is alienating, particularly due to the fear of cancer recurrence. A study on Australian cancer survivors diagnosed with various types of cancer found that some struggled with the survivor identity because it indicated that they had returned to their normal pre-cancer life, when in fact they felt that it was difficult to return to normal after such an acute experience (Little et al., 2002).

Researchers have found that some people who have had cancer reject the label survivor because they believe the word "survivor" only places emphasis on mere existence, rather than focusing on quality of life (Dyer, 2015). This study found that young adult cancer survivors, ages 21-45, in Puerto Rico did not like the term because of this reason and also criticized the general understanding of post-cancer survivorship in society as focusing simply on survival. "Survivorship is not just about if or how long people live, but also how well they survive and,

hopefully, thrive” (Leigh, 2007, p.10-11). It is also possible that for some people, cancer is a small part of their lives. Some cancer survivors did not feel that they had experienced a change in their identity due to their illness or did not wish to define themselves within the constraints of a survivor identity or any other identity for that matter (Khan et al., 2012a). This is especially true for older adults who have had cancer because they may have other experiences in their life that they feel define them better and are more integral parts of their identity (Pieters & Heilemann, 2011).

There are also individuals who have had cancer that deny the term because they feel that they were not sick enough or close enough to death as those who may have struggled and survived a poor prognosis (Khan et al., 2012a; McGrath & Holewa, 2012). They felt that this label should be reserved for those that had survived more aggressive forms of cancer with a poor prognosis (Khan et al., 2012a). Some people do not want to be associated with the negative implications that come with the cancer survivor label (Smith et al., 2016). Others wish to move on from their cancer experience and feel that a label results in a pointless focus on their disease. Some feel that the term “cancer survivor” makes them feel as though they are dwelling on the disease instead of focusing on and living their life (McGrath & Holewa, 2012). They do not want to be associated with cancer symbols such as pink ribbons or survivorship clothing because they serve as reminders of the disease and what they have been through (Kaiser, 2008).

Some people who have had cancer reject the term survivor because of its historical association with the Holocaust and victims of violent crimes (Marcus, 2004). Some even point out that those who have had heart attacks are not called heart attack survivors. This also relates to how the concept of being a “survivor” groups victims of violence, survivors of the Holocaust, and patients who have had cancer as having experienced some type of trauma. This can be

problematic since there has been debate about whether all people who experience cancer find it traumatizing, and, if so, whether they find it traumatizing in the same way (Sinding & Wiernikowski, 2008). It is also important to consider that although “cancer survivor” refers to someone completing treatment and being free of disease, there are some blurred boundaries of the survivorship phase (Bell & Ristovski-Slijepcevic, 2012). Many survivors continue to take chemotherapy drugs long after they may be considered to be cancer-free. Also, there are an increasing number of people that are living with incurable but controlled cancer. Although they might never beat cancer, they are expected to live a long time with the disease.

Studies have suggested that the neutral label “someone who has had cancer” is more appropriate than “cancer survivor” (Bellizzi & Blank, 2007; Park et al., 2009b) because although identifying as a survivor has shown to have positive implications on psychological well-being (Diemling et al., 2007; Park et al., 2009b), labeling a population with a term that may be offensive to some should be avoided. People that have had cancer also may feel a need for certainty and truth which can be observed by suggestions of factual descriptions, such as “was treated for cancer” or “has had cancer” (Kaiser, 2008; Khan et al., 2012a). Labels associated with flourishing, such as “thrivers” have also been considered appropriate terms because it speaks to the desire to live every moment to the fullest while valuing life and loved ones more than before (Dyer, 2015). Ideally, it is best practice to let the individual experience of the person who has been diagnosed determine what label they feel comfortable with (Khan, et al., 2012b).

Effects of Cancer-related Identities

Understanding how people perceive themselves in relation to their cancer experience is important for creating patient-centered care for people living with a cancer history (Park, Lechner, Antoni & Stanton, 2009a). There is now a growing area of research showing that cancer

identities are not only associated with the appraisal of the cancer experience, but also associated with mental and physical well-being. Belizzi and Blank (2007) found that middle and older aged men diagnosed with prostate cancer who were more likely to endorse positive oriented labels (e.g. survivor, conqueror) reported higher positive affect compared to those who identified as a “patient”. Other researchers found that women over the age of 35 who had breast cancer who were able to make a positive transformation after their diagnosis had higher self-esteem and well-being than those who had not (Carpenter, Brockopp & Andrykowski, 1999). A study on young to middle aged cancer survivors (ages 18-55) found that survivor identity was positively related to positive affect and reports of growth but negatively related to negative affect (Park et al., 2009b). Those who identify as survivors have been found to take a more active approach to dealing with cancer and its aftermath, reducing anxiety and depression and improving self-esteem (Diemling et al., 2007).

Endorsing negatively connoted cancer related identities has been found to negatively impact well-being among those who have had cancer (Park et al., 2009b). This study found that young to middle aged adult women who had cancer and identified as being a “victim of cancer” rather than a “survivor” reported higher levels of negative affect and intrusive thoughts and lower levels of mental health quality of life, positive affect, and life satisfaction. Studies found that older adults who identified as a “patient” reported higher levels of hostility and depression (Diemling et al., 2007). Other researchers found that identifying as a “victim” or “patient” was shown to be associated with fears of recurrence, however, so was identifying as “someone who has had cancer” (Park et al., 2009b). Researchers have found that identifying as “someone who has had cancer” was positively related to engaging in cancer-related activities like advocacy

involvement but was unrelated to well-being outcomes: positive and negative affect, post-traumatic growth or physical or mental health related quality of life (Park et al., 2009b)

Although researchers found that the amount of time since diagnosis was not associated with identifying as a survivor (Jagielski et al., 2012; Park et al., 2009b), others have found that some people who have had cancer distanced themselves from the survivor label after some time had passed since their illness (Smith et al., 2016). As cancer became less significant, so did the idea of being a survivor. However, it is also possible that as time passes and fears of recurrence may decrease, people may be more comfortable to identify as a survivor, feeling more confident that their struggle is behind them. The timing of claiming the survivor identity has been linked with several aspects of mental well-being (Diemling et al., 2007). This study found that among adults over age 60, those who identified as a “survivor” earlier reported higher levels of self-esteem and significantly lower levels of anxiety and depression. Individuals who took longer to adopt the “survivor” identity were more likely to view themselves as an incomplete person. It is also important to understand if cancer survivor identification develops and changes over time. In a longitudinal study, researchers found a significant decrease in the endorsement of the patient and victim identities after one year (Cho & Park, 2015). Other researchers have found similar results (Smith et. al., 2016), suggesting that one’s relationship with cancer can change over time.

Illness Centrality

In addition to cancer labels, researchers have examined the extent to which having a chronic illness is integrated into one’s sense of self (Charmaz, 1995). According to Charmaz (1995), the process of integrating illness into one’s self-concept is common among those with chronic illness where one’s sense of self is transformed from a healthy self to a sick self. There may be difficulties integrating an illness into one’s sense of self, particularly if the chronic illness

is viewed as a stigmatizing condition (Jones et al., 1984). Research on stigma has noted that some individuals build their self-concepts around the stigmatizing condition, but others disregard it (Jones et al., 1984). That is, individuals vary in the extent to which they define themselves in terms of their illness, also known as, *illness centrality* (Charmaz, 1995; Helgeson, 2011; Morea et al., 2008).

Research in chronic illness has found that people vary in the extent to which they incorporate having an illness into their self-concepts; some people come to define themselves in terms of the illness while others try to separate the illness from the rest of their lives (Charmaz, 1995). In some instances, having a chronic illness completely dominates a person's identity and daily life, at the expense of other important life aspects (Morea et al., 2008). This has been conceptualized as *engulfment*, and researchers have found that those with chronic kidney disease who reported higher levels of engulfment, reported higher levels of depression and lower life satisfaction (Beanlands, 2001). Conversely, researchers have also identified the state of *rejection*, which refers to the degree to which illness is rejected as part of someone's identity and is viewed as a threat to the self (Oris et al., 2018). This was mostly based on qualitative studies that examined reasons for poor treatment adherence in patients with asthma, where researchers concluded that some people tend to reject their illness, resulting in poor treatment adherence (Adams, Pill, & Jones, 1997). In contrast to engulfment and rejection, *acceptance* and *enrichment* are two identity states that represent adaptive illness integration. Acceptance is the degree to which individuals accept the illness as part of their identity without being overwhelmed. In this case, illness plays a peripheral role in one's identity, allowing space for other aspects of personal and social life (Morea et al., 2008), where individuals try to lead as normal a life as possible, while at the same time, do not deny having an illness (Adams et al.,

1997). Enrichment refers to the degree to which having a chronic illness enriches one's sense of self and enables one to grow as a person (Oris et al., 2018).

Illness centrality commonly occurs among cancer survivors but there have only been two studies that have examined this (Helgeson, 2011; Park et al., 2011). Helgeson (2011) found that women who said that breast cancer was the most stressful thing that had ever happened to them were more likely to define themselves in terms of their illness. This study also found that a cancer recurrence was not indicative of illness centrality. Therefore, women who had worse prognoses or more illness-related problems were not more likely to define themselves in terms of cancer survivorship. Helgeson (2011) found that younger age was related to illness centrality while Park et al. (2011) did not find a significant relationship between age and centrality. It may be possible that younger women were more likely to define themselves in terms of their illness because of the greater impact related to being diagnosed with a life threatening illness at an unexpected age (Helgeson, 2011). Another possible reason for this can be because older people are often more impacted by other significant life events or other health issues when compared to younger individuals (Belizzi, 2004). Park et al. (2011) also had a sample that reported lower reports of centrality among their sample of young to middle aged survivors with a mean of 1.26 on a 4 point scale, whereas Helgeson (2011) found higher reporting of illness centrality among their sample of adult breast cancer survivors with a mean score of 3.58 on a 5 point scale. The reason for these discrepancies is unclear but could be related to the single item measure used by Park et al. (2011) rather than using a more psychometrically sound and established measure.

Park et al. (2011) found that in their sample of young and middle-aged adult cancer survivors, ages 18-55, those who reported higher illness centrality had higher levels of negative affect and intrusive thoughts and had lower levels life satisfaction and of positive affect.

Helgeson (2011) also found that among adult breast cancer survivors, illness centrality was related to greater negative affect, poorer mental functioning and greater psychological distress. Possible explanations for the negative relationship between illness centrality and various psychological well-being outcomes may be a result of the stigma attached to having cancer leading people to feel worse or it could be because those who are doing poorly psychologically are more likely to remain focused on their cancer experience. Cancer is considered to be a stigmatized illness because it is poorly understood, feared, and evokes images thoughts related to mortality (Fife & Wright, 2000). This is similar to prior research on a sample of 300 people living with concealable stigmatized identities (e.g. mental illness, medical conditions, and criminal actions), that found that because of anticipated stigma, the more central a stigmatized identity is to an individual's self-concept, the lower their psychological well-being will be (Quinn & Chaudoir, 2009).

However, there is a growing body of literature that suggests that many cancer survivors perceive their illness in positive terms, partly due to experiencing positive changes from the illness (Stanton, 2006). People that have had cancer tend to report closer relationships with others, increased personal strength, and deeper spirituality (Stanton, Bower, & Low, 2006). Researchers have found that perceiving an illness in positive or negative terms may affect the relationship between illness centrality on health outcomes (Wiebe et al., 2002). This study found that the centrality of diabetes was related to more depressive symptoms only when the illness was perceived in a negative light. Similarly, illness centrality among adult women who have had breast cancer was associated with higher negative affect and psychological distress if the women viewed the illness in more negative terms (Helgeson, 2011). However, this interaction effect did not appear for other wellbeing outcomes (positive affect, mental or physical functioning). These

results indicate that illness centrality was only negatively related to psychological well-being when the illness was viewed in less positive terms.

The only two research studies that have examined effects of illness centrality among cancer survivors and well-being have found interesting results pertaining to growth and benefit finding after having had cancer (Helgeson 2011; Park et al., 2011). Both studies found that at the bivariate level, illness centrality was related to perceiving some type of growth or benefit after being diagnosed with cancer. However, Park et al. (2011), found that when considered in the context of openness/disclosure, the link between illness centrality and growth disappeared, suggesting that openness rather than centrality was more closely aligned with growth.

Results indicating that illness centrality is associated with experiencing benefit after an illness appear to be inconsistent with findings suggesting that illness centrality is associated with lower levels of well-being. However, these findings are similar to results from a study of adults living with a chronic medical illness, showing that those who reported that their illness dominated their identity and daily life also reported higher positive changes as a result of their illness (Oris et al., 2018). The experience of perceived positive changes as a result of stressful events does not necessarily occur without the experience of psychological distress.

Experiencing significant impact from an illness may result in strongly identifying with the illness (Beanlands et al., 2003) but also in recognizing that one has overcome adversity and that despite of or possibly because of the continued psychological difficulties related to surviving an illness, those who identified more strongly with their illness were able to find positive aspects of it (Helgeson, 2011). Continued confrontation with their illness may be both stressful and also indicative of incorporating the cancer experience in a way that has provided the opportunity to use that experience as means to personal growth (Helgeson, Reynolds, & Tomich, 2006; Park,

Edmondson, Fenster, & Blank, 2008). Researchers have found that to enhance the self in the context of a stressor (i.e. illness), individuals initiate cognitive efforts, such as identifying benefits, which tend to be greater when stressors are perceived as more severe (Taylor & Brown, 1994). Additionally, it may be that those who are still struggling after several years report positive changes as a way to cope with their distress (Maercker & Zoellner, 2004).

PERCEIVED CHANGES POST CANCER

Researchers have identified that people who have experienced a major life crisis and/or traumatic event may derive significant positive changes as a result of struggling with the traumatic experience (Tedeschi & Calhoun, 1996). Many researchers identify this experience as posttraumatic growth (PTG) with examples of increased sense of personal strength, changed priorities, and an enhanced spiritual life. PTG involves reconstructing your worldview in a new way following trauma and develops as a result of the rumination and restructuring of your place in the world, which occurs in the weeks, months, and even years following trauma (Tedeschi & Calhoun, 1996; Tedeschi & Calhoun, 1998).

Most work on PTG has not included a normal or baseline reference, making it unclear whether hypothesized growth actually changes or differs from the rest of the population following a traumatic event (Constanzo, Ryff & Singer, 2009). In other words, there has not been evidence to prove that growth post trauma is triggered by the traumatic event or if it is in fact a result of maturation, referring to cognitive and behavioral changes across the lifespan that would transpire even if the traumatic event did not occur (Eve & Kangas, 2015). As a result, researchers should be careful not to conceptualize these positive changes followed by a stressful event as “posttraumatic growth” but simply as perceived positive changes after a stressful event.

Benefit Finding

In addition to experiencing positive changes after a stressful event, individuals have also reported benefits from their experience (Sears, Stanton, & Danoff-Burg, 2003; Stanton et al., 2006). Although, finding benefit and experiencing positive changes following adversity have conceptual overlap that describes similar outcomes, there are differences (Tennen & Affleck, 2002). For example, in a study of adult breast cancer survivors, benefit finding was predicted by personal characteristics (i.e., education, optimism, and hope), but posttraumatic growth was not (Sears et al., 2003). Benefit finding is described as identifying some type of improvement from adversity. Benefit finding may start immediately after the distressing event, while perceived positive changes result from challenges to deeper cognitive representations and result in changed rules for living. It is possible that over time, identifying benefits may lead to perceived positive personal changes. For example, a cancer survivor may report the benefit that after their illness they realized how supportive other people are. With time, they may implement shifts in their priorities resulting in more time spent with loved ones, indicating a positive change in their interpersonal relationships (Calhoun & Tedeschi, 1998). Positive changes after a distressing event can be categorized in three groups: perceived changes in self (e.g. feeling stronger), changes in interpersonal relationships (e.g. connections with others are strengthened), and changes in spirituality or life philosophy (e.g. a greater appreciation of what one has) (Tedeschi, Park, & Calhoun, 1998).

Positive Changes

It is common for people with cancer to report ways in which the cancer experience has enhanced their lives (Stanton, 2006; Stanton et al., 2006; Sears et al., 2003). For example, one study of women with early stage breast cancer found that 83% of women were able to identify something positive from the experience within the first year of diagnosis (Sears et al., 2003). In a

study of childhood cancer survivors under the age of 21, the majority reported experiencing positive changes rather than negative or no change at all after their illness (Arpawong, Oland, Milam, Ruccione & Meeske, 2013). The top three areas of positive changes reported included knowing they could count on others in times of need, finding their own inner strength, and improvement in their relationship with family. Findings from this study also suggest that those who had reported higher positive changes after being diagnosed had lower levels of depression. In a study of 122 adult stomach cancer survivors, 53% reported moderate to high levels of perceived positive changes post diagnosis (Sim, Lee, Kim, & Kim, S., 2015). In this study, the most commonly reported positive change was a change of self-perception, followed by how they related to other people. Participants in this study that reported more positive changes also reported higher social and family well-being.

Due to the increasing interest in perceived positive changes after stressful events and its benefits, researchers have scrutinized whether these reported experiences of growth or positive changes are actual or false (Frazier et al., 2009). Although some reports of positive change may be genuine, some reports may actually be illusory. Are people reporting actual changes in their lives? Or, are people inclined to report these positive results from difficult times as a way to relieve their distress and cope with what they have experienced? It may be possible that individuals may report positive changes resulting from a stressful experience as a way to cope and maintain positive illusions (Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). In other words, reports of growth could reflect cognitive biases motivated by the need to feel good about the self and good about the future. People tend to believe that they are better off than they really are and research has found that this helps to maintain psychological health when facing distressing events (Taylor & Brown, 1994).

Researchers found that in a study of adults diagnosed with cancer between ages 18 and 39 and a matched group of healthy control peers, the young adult cancer survivors reported having experienced more positive changes in their lives (Salsman et al., 2014). The young adults in this study were divided into three cohorts: 0-12 months post treatment, 13-24 months, and 25-60 months and reports of greater positive impacts of cancer was relatively stable across all cohorts. Although the cancer experience may be a catalyst for positive changes after illness among young adults, the comparable levels of reported positive changes among the healthy controls across the 3 cohorts suggests that self-enhancement bias may possibly contribute to this phenomenon. Individuals are often highly motivated to find meaning in their life experiences and to report “having grown” from difficult life experiences.

In addition to this illusory side of growth, researchers have proposed that perceived growth after a stressful event also consists of a constructive side reflecting true positive changes (Maercker & Zoellner, 2004). For individuals still in distress, reports of growth are largely assumed to be illusory while those who have successfully coped with the stressful event, should have lower levels of distress with reports of growth being more likely to reflect actual growth, as a result of positively adapting (McFarland & Alvaro, 2000). Determining whether perceived positive changes reflect actual or illusory changes is a difficult but necessary challenge for researchers.

Negative or Minimal Changes

In addition to experiencing positive changes, researchers have also found that there may be areas where cancer survivors perceive negative changes or no change at all after their illness (Park & Blank, 2012). This study of young to middle aged adults (ages 18-55), diagnosed with cancer in the past 3 years found that although all participants did report experiencing at least

some change, the most commonly reported answer for items of perceived changes was “no change.” This lack of perceived change is an important aspect of the experience of survivorship and is consistent with findings from other researchers that compared survivors with matched controls showing similar trajectories of improvement, finding little evidence of differences across several well-being domains (Costanzo et al., 2009).

However, consistent with prior research, Park and Blank, (2012) found that perceived positive changes were endorsed more frequently than negative changes among a sample of young and middle-aged cancer survivors, and were commonly reported in areas such as appreciation for life and relationships with others, which have been found to be main areas of perceived positive change among cancer survivors (Stanton et al., 2006). Park and Blank (2012) found that although most items were not endorsed with negative change, the items showing the most negative change were a sense of control over life and beliefs related to the safety and fairness of the world. Similarly, a study on female adult cancer survivors who were interviewed 10 years past their diagnosis, found that although most female cancer survivors reported positive changes in both open and closed ended measures, several long-lasting negative changes were reported (Helgeson, 2010). Nearly 20% of survivors said that they had fears of recurrence or of death while 14% of women reported negative changes in their self-image, and 6% reported negative changes pertaining to their emotions (e.g., more pessimistic, sad). These responses suggest that the future outlook for survivors is not completely positive and that there may be a subgroup of survivors who remain distraught and in need of clinical care.

Very few studies have assessed positive and negative changes in the same sample but those that have, clearly established that cancer survivors consistently report experiencing both positive and negative changes as a result of their cancer (Bellizzi, Miller, Arora, & Rowland,

2007; Helgeson, 2010). However, these studies have found inconsistent results regarding the amounts of reported positive and negative changes. For example, a sample of adult bone marrow transplant survivors reported an average of 10 positive and 9 negative changes (Fromm, Andrykowski, & Hunt, 1996). One sample of adult cancer patients, diagnosed at various time points, reported twice as many negative as positive changes (Klauer, Ferring & Filipp, 1998), while survivors in several other studies reported more positive than negative changes (Helgeson, 2010; Park & Blank, 2012). Helgeson (2010) found that in a study of adult breast cancer survivors interviewed 10 years after their diagnosis, along with their significant others, most reported experiencing positive changes after their illness. They often reported having a positive outlook, feeling happier, and being more content.

Studies examining both positive and negative changes have consistently shown that reports of negative changes are related to poorer indices of well-being outcome variables (Curbow, Somerfield, Baker, Wingard, & Legro, 1993; Fromm et al., 1996). However, there have been mixed results regarding the effects of positive changes on well-being. Park and Blank (2012) found that although in their sample of young to middle aged cancer survivors, negative changes were less commonly reported than positive changes, negative changes were found to have strong negative correlations with all of their indices of adjustment (positive and negative affect, mental & physical HRQOL, life satisfaction and spiritual well-being). Positive changes, however, were positively correlated with spiritual well-being but only modestly related to positive affect and was unrelated to the remaining outcome variables. Helgeson (2011) found that experiencing positive changes after cancer was related to greater positive affect, and greater physical functioning but was unrelated to negative affect or mental functioning. Other researchers found that negative changes reported by young adult male survivors of bone marrow

transplants were adversely related to well-being outcomes of current and future life satisfaction and general mood whereas positive changes were not found to be associated strongly with any of these outcomes (Curbow et al., 1993). Therefore, despite the relative infrequency of negative changes, these findings highlight the importance of when they are reported, because they largely drive the associations with adjustment indices.

AGE DIFFERENCES

Theories of human development would suggest that although all cancer patients experience a common set of life disruptions (e.g. attainment of life goals, issues related to independence and interpersonal issues), they experience them differently and attach different levels of importance to different aspects of the experience depending on the time in life at which they were diagnosed (Rowland, 1990; Zebrack, 2011). The impact of these disruptions varies according to an individual's age-related social roles (e.g. parent, student) and the life tasks and responsibilities associated with those roles. For example, the experience and meaning of intimacy will be different for younger cancer survivors who are single and trying to figure out if and when to disclose the effects of cancer treatment to a potential partner compared to older adults in established relationships.

Given the unique emotional and social life changes that take place during young adulthood (e.g. developing sexual identity, making decisions about careers), a cancer diagnosis and treatment for young adults between the ages 18 and 39 may be especially disruptive (Rowland, 1990; Zebrack, 2011). Instead of discovering and experiencing newfound independence, young adult cancer survivors are often forced to become dependent on parents and family members. In addition, being young when facing cancer has the additional burden of feeling like an “anomaly” due to having to face mortality much sooner than developmentally

expected (O’hea et al., 2016, p. 1153). Studies have consistently shown that younger survivors experience higher levels of fears of cancer recurrence (Crist & Grunfeld, 2013; Simard et al., 2013). Possible explanations for this may be because younger survivors report higher levels of anxiety and depression in general (Arden-Close, Gildron, & Moss-Morris, 2008) or because young adults already perceive their cancer diagnosis to be particularly unexpected (Vickberg, 2003).

Studies have found that young adult cancer survivors are more likely to experience more psychological distress than older survivors, and yet are not as sufficiently studied as their older counterparts are (Poort et al., 2017; Quinn, Gonçalves, Sehovic, Bowman, & Reed, 2015). A review of 35 quantitative and qualitative studies on health related quality of life among young adult cancer survivors ages 15-39 (Quinn et al., 2015), found that survivors reported more disturbances in quality of life domains such as emotional well-being and more impacts related to fertility and work/school functioning when compared to healthy peers and with older cancer survivors. More specifically, researchers found that young adults ages 25 -29, reported higher anxiety and depression compared to those in the 30 to 39-year-old age group. It is possible that young adults in the 25 to 29-year-old age group experience greater psychosocial difficulties (e.g. vocational, financial stressors) related to interrupted developmental milestones while young adults in the 30 to 39 age group may have fewer of these challenges (Salsman et al., 2014). Due to these reasons, it has been widely accepted among researchers that young adult cancer survivors should be studied as a distinct category in cancer survivorship (Poort et al., 2017; Quinn et al., 2015; Zebrack, 2011).

Effects of Cancer on Young Adults

Being diagnosed at a younger age also means living longer with the disease and its psychosocial and physical impacts. Some of the physical delayed impacts of cancer-related treatment include chronic fatigue, neurological difficulties, secondary tumors, and infertility, among others (Henderson, 1997). Researchers have found that young adults with cancer reported significantly higher fatigue than matched population-based controls (Poort et. al., 2017).

Young adult cancer survivors may experience altered perceptions of body image and self-esteem, changes in romantic relationships and increased struggles pertaining to family planning (Zebrack, 2011). A study on adult women who were in committed relationships and were within seven months of being diagnosed with cancer, found that among sexually active women, greater body image problems were associated with physical appearance (e.g. mastectomy, hair loss, weight gain or loss), poorer mental health, lower self-esteem, and partner's difficulty understanding one's feelings (Fobair et al., 2006). Researchers found that 21% of young adult survivors ages 18 thru 27, were divorced compared to 10.8% of the young adult control group (Kirchhoff, Yi, Wright, Warner & Smith, 2012). Research has also identified that infertility is one of the highest concerns related to cancer treatment (Bann et al., 2015; Henderson, 1997) greatly impacting young adult cancer survivors since women who undergo chemotherapy or radiation during reproductive years have a 40%-80% chance of losing fertility (Quinn et al., 2015).

Despite the fact that young adults can be negatively impacted by cancer in various domains, studies have found that younger survivors report high levels of positive changes or growth (Cormio, Romito, Giotta, & Mattioli, 2013; Lechner et al., 2003; Sim et al., 2015). Belizzi (2004) found that young adult cancer survivors, ages 26-41, and middle-aged cancer survivors ages 42-54, reported higher levels of positive changes after their illness than did

survivors over 55. Researchers believe that this could be due to the longer life expectancy of young adults and the realization that they have more time left on earth to accomplish desired goals. Older people also appear to be more at peace with their life situation and consider psychological growth less important to them at their life stage.

CANCER AND WELL-BEING

As the number of cancer survivors steadily increases, research interest in the adjustment and psychological well-being after cancer treatment has also increased (Morgan, 2009; Zebrack, 2000). Cancer survivors have been found to have lower levels of various domains of well-being than similar individuals without a history of cancer and the severity of these impacted domains differ by time since diagnosis, cancer type, and gender (LeMasters, Madhaven, & Kurian, 2013). For example, male colorectal cancer survivors reported less life satisfaction than their non-cancer controls whereas female colorectal cancer survivors reported higher amounts of bad mental health days than their non-cancer controls. Cancer survivorship research has identified multiple areas of adjustment for cancer survivors that include a range of physical and psychological issues (Holland, 2002). Survivors have reported various domains where they experience negative changes like physical side effects, interference with their family and work obligations, and fear of the cancer returning (Zebrack, 2000). In coping with the uncertain future of their illness, cancer survivors may also experience existential suffering, which can be related to a loss of meaning in life, while others report to experience life more fully and having more meaning and purpose in their lives (van der Spek, 2014). Cancer survivors that have experienced negative changes since their diagnosis may also experience lower levels of life satisfaction than those who have not (Park & Blank, 2012).

Meaning in Life

Interest in meaning has increased in recent years in many areas of psychology (e.g. positive psychology, health psychology) but establishing a clear definition is difficult. Baumeister (1991) proposed a sensible and commonly used definition of meaning as a “mental representation of possible relationships among things, events, and relationships. Thus meaning, connects things” (p.15). Meaning is widely considered to be essential to psychological, physical, and social well-being (George & Park, 2017; Park, 2010). Individuals high in meaning are better able to make sense of their lives and life events and know what is important to them, what goals they want to pursue, and how to move forward and progress in their lives (George & Park, 2017).

Meaning is central to human experience and is particularly important to people facing highly stressful life experiences (Park, 2010; Park & Gutierrez, 2013). Individuals going through adversity and who are high in meaning may experience less stress due to adaptive ways of appraising and understanding their situation (Park 2010). They may be able to view their stressful experience as just a fragment of a much larger, richer whole (George & Park, 2017). As a result, they may face such stress with greater clarity on how to overcome and move forward with their lives.

Park (2010) proposed the meaning-making model to bring together theory and empirical findings on several related topics, including meaning in life, spirituality and coping with challenging experiences (e.g. physical illness). The meaning-making model proposes that there are two levels of meaning: global meaning and situational meaning. Global meaning refers to an individual’s global belief about the world, themselves, and their main goals in life (Park et al., 2008). Situational meaning refers to an individual’s appraisals of a specific event (Park, 2010). The meaning-making model states that when people perceive major discrepancies between how the world is and how they believe it should be (belief violation) or how they want it to be (goal

violation), they experience distress and lower levels of well-being. The meaning-making model hypothesizes that these discrepancies generate distress and also trigger efforts to reduce those discrepancies by making meaning. In efforts to make meaning, Taylor (1983) proposed that meaning involves understanding the event, including why it happened and what impact it has on the person. Having meaning is reflected by answering the following questions: “Why did this happen to me?” and “What does my life mean now?”

According to researchers, searching for meaning can result in several outcomes. (Park, 2010). Most commonly, individuals report that they have been able to make sense of the stressful event (van der Spek et al., 2014). At other times, individuals report having achieved a sense of acceptance or of having come to terms with the event (Evers et. al., 2001). Understanding the cause of the event and perceiving the event to have created positive life changes are also possible results of meaning-making. Another important outcome of meaning-making involves identity change, as there can be a shift in one’s personal biographical narrative as a response to the stressful event (Gillies & Neimeyer, 2006). For example, people who experience growth after an adverse event often report developing a changed sense of self, like feeling more resilient and confident.

Meaning in life has been linked to well-being among individuals dealing with extreme hardships including serious health issues like cancer. While some cancer survivors find it hard to cope with the psychological consequences of cancer and deal with existential issues like fear of recurrence, death, meaninglessness, and threats to their self-identity, others experience minimal problems coping with the aftermath of their illness (van der Spek et al., 2014). Some even report improved psychological well-being after cancer (i.e. deriving meaning from the cancer experience, experiencing life more fully) (George & Park, 2017). There have been inconsistent

findings in literature regarding whether or not cancer survivors experience more or less meaning in life after their illness (van der Spek et al., 2014; Park, 2010). Meaning-making in cancer survivors has often been found to be a multifaceted process where there can be an increase in meaning in some areas (e.g. relationships) while at the same time, a loss of meaning in other areas (e.g. meaningful activities) (van der Spek et al., 2014).

Van der Spek et al. (2014) found that in general, adult cancer survivors experienced more meaning after cancer in at least one way, mostly related to relationships and a more conscious way of living. Cancer survivors reported to experience enhanced meaning through love and relationships with family and friends by enjoying being with and being there for other people. Others described enhanced meaning by enjoying the little things in life, like the sound of a bird or a good meal. Most participants reported to feel more resilient in dealing with stress and having a better idea of what they find important in life. Other researchers found that adult survivors of lung, breast and gynecological cancer who were financially secure and engaged in pleasurable activities reported more global meaning in life (Scheffold et al., 2014). Research on adult cancer survivors also supports that those who have high spirituality are likely to have more meaning in life over time (George & Park, 2017).

Although less frequent, research also demonstrates that some individuals report to have also experienced a loss of meaning in their lives, mostly losses related to physical impairments or difficulties setting goals because of uncertainties about the future (van der Spek et al., 2014). Some participants reported a loss of meaning related to experiences, because they were no longer able to continue meaningful activities due to physical impairments, for example, not being able to work, have children or do a specific recreational activity. Similarly, researchers found that adult survivors of lung, breast, and gynecological cancer who highly valued work-related goals

and achievements reported lower global meaning in life (Scheffold et al., 2014). Researchers have also found that cancer survivors who reported minimal use of active coping strategies and low family support during their diagnosis and recovery period were more likely to report a loss of meaning in their lives (Jim, Richardson, Golden-Kreutz & Andersen, 2006). In a study of testicular cancer survivors, those who experienced more negative life events during the previous year of the study, reported lower levels of meaning in life compared to those who had fewer negative events happen (Fleer, Hoekstra, Sleijfer, Tuinman, & Hoekstra-Weebers, 2006). This is consistent with previous research that has found that those who experience more negative life events tend to have more negative beliefs about the meaningfulness of the world (Park & Folkman, 1997).

Life Satisfaction

Subjective well-being has been conceptualized as containing two major components: the emotional/affective component and the judgmental/cognitive component (Deiner, 1984). Life satisfaction derives from a judgment process by the individual (Diener, Emmons, Larsen, & Griffin, 1985). Shin and Johnson (1978) define life satisfaction as a “global assessment of a person’s quality of life according to his chosen criteria” (p. 478). Judgments of satisfaction are dependent upon a comparison of one’s circumstances with what is thought to be an appropriate standard set by the individual. As a result, life satisfaction is a subjective judgment, rather than one based on an “externally imposed” objective standard (Diener, et al., 1985, p. 71). Although some specific life domains such as health, wealth and successful relationships are likely to rank highly on people’s judgment of overall life satisfaction, certain individuals may place different values on them (Pavot, Diener, Colvin, & Sandvik, 1991). Some people may be particularly unhappy with a particular domain in their life but satisfied in others (Veenhoven, 1984). In

addition, individuals may be satisfied with most domains in their life and still be dissatisfied overall because of one very important domain not being met. Therefore, it is important to obtain an overall life satisfaction evaluation from individuals rather than relying solely on the summation of satisfactions from a list of domains (Deiner et al., 1985).

Among cancer researchers, health-related quality of life is often studied to understand the well-being of individuals. This concept relates to how physical, mental, and social functions are affected by the disease (Olsson et. al., 2017). Life satisfaction is considered to be separate from quality of life, reflecting an individual's appraisal of life in an aspiration-goal achievement model rather than functional limitations. An individual's own aspirations may change and develop over time as does. An individual's overall life satisfaction also varies over time but is quite constant in larger populations (Fugl-Meyer, 2016). Satisfaction with life has been used as a key outcome when studying recovery from disease and as an indicator for adapting to new life conditions (Mehnert, Boer, & Feruerstein, 2013).

Life satisfaction is influenced by many factors such as happiness with everyday life, meaning in life, positive personal identity and feeling physically well (Feller, Teucher, Kaaks, Boeing, & Vigl, 2013). Studies conducted with individuals having physical illnesses report that life satisfaction among individuals diagnosed with a physical illness is lower than that of the general population (Boonstra, Reneman, Stewart, Post, & Preuper, 2013; Steca et. al., 2013). Issues related to having a chronic physical illness like dependence on others in performing activities of daily life, decrease in social relationships, financial stressors, and psychological problems like depression and anxiety are the most important factors leading to lower levels of life satisfaction (Sabanciogullari, Tuncay, & Avci, 2016).

Researchers found that adult survivors of adolescent cancer were generally less satisfied with their life compared to their matched peers (Seitz et al., 2011). A study that compared survivors of breast, prostate, and colorectal cancer to matched controls also supported these findings with results also showing that only female colorectal cancer survivors reported higher life satisfaction when compared to the other cancer survivor groups (LeMasters, Madhaven, & Kurian, 2013). Researchers have found that positive changes post cancer was positively correlated to life satisfaction (Seitz et al., 2011) while others have not (Park & Blank, 2012). Park and Blank (2012) found that negative changes were adversely related to life satisfaction among young and middle-aged cancer survivors. Research findings show that both adults (Seitz et al., 2011) and older adults, aged 50-99, (Zlata et al., 2015) who reported lower levels of depression and anxiety had higher life satisfaction. Older adult cancer survivors were found to not differ significantly from healthy matched peers on life satisfaction despite having a long history of cancer (Zlata et al., 2015).

Purpose and Rationale

Despite the lack of research on illness centrality and well-being outcomes, professionals have learned that integrating an illness into one's identity is a common theme that emerges from discussions with cancer survivors. This current study looked at illness centrality among cancer survivors and explored its relationship to measures of psychological well-being: stress-related growth, meaning in life, life satisfaction, and benefit finding. Understanding the degree to which cancer survivors integrate an illness into their self-identity does not necessarily predict their well-being. It is the extent to which cancer survivors view their illness in positive or negative terms that will ultimately affect this relationship. Therefore, this study examined if experiencing positive or negative changes post-cancer moderated the relationship between illness centrality

and measures of psychological well-being among cancer survivors. Currently there are only two studies that have examined effects of cancer-related illness centrality on psychological well-being. This current study is the first to examine the relationship between illness centrality and meaning in life. This is important because meaning in life has been found to be essential for cancer survivors. Research findings also suggest that the cancer-related labels individuals adopt post-cancer may be associated with how they cope after the illness. For example, the term “cancer survivor” has been found to have positive associations with well-being and be related to experiencing more positive changes from the illness. This study aimed to confirm these findings and investigate other relationships between demographic variables and endorsement of cancer-related labels.

The ability to accurately measure perceived growth is crucial to furthering our understanding of the consequences of stressful experiences and researchers have criticized measures that have been most commonly used to assess growth. This current study used an improved measure of stress-related growth (SRGS-R) to assess for perceived positive and negative changes in order to minimize illusory reports of exclusively positive growth after a stressful event. Past researchers who have examined illness centrality have recommended that future researchers use a better validated measure than what has been used in prior studies (Park et al., 2011) as illness centrality has been assessed by using a single-item measure. This study used the Centrality of Events Scale (CES), a measure that has demonstrated good internal consistency among various samples (Ogle, Rubin, & Siegler, 2014; Berntsen & Rubin, 2006) to examine illness centrality.

Research suggests that how cancer survivors respond to having had cancer varies across the lifespan. The presence of cancer during young adulthood may pose particular changes for

one's sense of self and yet, young adult cancer survivors are not as extensively researched as older adults. This study contributes to the relatively limited research on young adult cancer survivors by investigating the relationship between younger age illness centrality and stress-related positive and negative changes.

Understanding the role of cancer on self-identity is important for designing effective, patient-centered programs that acknowledge unique cancer experiences and lead to better adjustment post cancer. Therefore, once remission is achieved and survivors transition into the survivorship phase of illness, health care professionals should examine their views of the experiences, particularly whether they perceive any personal changes, both positive and negative. Those who attach a negative label to survivorship may be at risk for psychological distress. Developing interventions to help cancer survivors who may be struggling emotionally reframe their cancer experience may help achieve better post-cancer adjustment.

Research Questions and Hypotheses

Research Question 1: What is the relationship between illness centrality and well-being?

According to researchers, higher illness centrality has been found to result in higher levels of negative affect and intrusive thoughts, and lower life satisfaction and positive affect (Park et al., 2011). Other researchers have found similar findings related to psychological well-being with findings suggesting that illness centrality predicts greater negative affect, poorer mental functioning and greater psychological distress (Helgeson, 2011). A possible explanation for the negative relationship between illness centrality and various psychological well-being outcomes may be because those who are doing poorly psychologically are more likely to remain focused on their cancer experience. Despite findings of adverse relationships between illness centrality and well-being, both these studies found that at the bivariate level, illness centrality

was related to perceiving growth or benefit after being diagnosed with cancer (Helgeson, 2011; Park et al., 2011). Other researchers have found similar results, showing that adults living with a chronic illness who reported that their illness dominated their identity and daily life also reported higher positive changes as a result of their illness (Oris et al., 2018). Therefore, the following hypotheses examine the relationships between illness centrality and well-being.

Hypothesis 1a: Illness centrality will be negatively correlated with meaning in life.

Hypothesis 1b: Illness centrality will be negatively correlated with life satisfaction.

Hypothesis 1c: Illness centrality will be positively correlated with benefit finding.

Research Question 2: Does identifying as a “cancer survivor” have an effect on well-being?

Research has identified that cancer identities are associated with several domains of well-being (Park et al., 2009a). Belizzi and Blank (2007) found that middle and older aged men diagnosed with prostate cancer who were more likely to endorse positive oriented labels, like “survivor” reported higher positive affect compared to those who identified as a “patient”. Other researchers found that women over the age of 35 who had breast cancer who reported positive transformations had higher self-esteem and well-being than those who had not (Carpenter, Brockopp & Andrykowski, 1999). A study on young to middle aged cancer survivors (ages 18-55) found that survivor identity was positively related to positive affect and negatively related to negative affect (Park et al., 2009b). This study also found that those that endorsed a “cancer survivor” identity reported higher levels of growth, while identifying as “someone who has had cancer” or “victim” or “patient” was unrelated to growth (Park et al., 2009b). Therefore, the following hypotheses examine the relationship between identifying as a “survivor” and well-being outcome measures.

Hypothesis 2a: Identifying as a “survivor” will be positively correlated with stress-related growth.

Hypothesis 2b: Identifying as a “survivor” will be positively correlated with meaning in life.

Hypothesis 2c: Identifying as a “survivor” will be positively correlated with life satisfaction.

Hypothesis 2d: Identifying as a “survivor” will be positively correlated with benefit finding.

Research Question 3: How will experiencing negative changes post cancer impact the relationship between illness centrality and well-being outcomes?

Researchers have found that perceiving an illness in positive or negative terms may affect the relationship between illness centrality on health outcomes (Wiebe et al., 2002). Studies have found that have a negative view of their cancer experience has strengthened the negative relationship between illness centrality and well-being (Helgeson, 2011). This current study will examine if perceiving negative changes on the SGRS-R (e.g. I experienced a change in my desire to have some impact on the world.) will moderate the relationship between illness centrality and well-being measures: meaning in life and life satisfaction.

Hypothesis 3a: The relationship between illness centrality and meaning in life will be moderated by the extent to which participants report positive vs. negative changes post cancer, as measured by an indicator of stress-related growth. That is, among those who report less stress-related growth, illness centrality will be negatively associated with meaning in life, as opposed to those who report higher stress-related growth, illness centrality will be positively associated with higher meaning in life.

Hypothesis 3b: The relationship between illness centrality and life satisfaction will be moderated by the extent to which participants report positive vs. negative changes post cancer, as measured by an indicator of stress-related growth. That is, among those who report less stress-related growth, illness centrality will be negatively associated with life satisfaction, as opposed to those who report higher stress-related growth, illness centrality will be positively associated with life satisfaction.

Research Question 4: Will the age of cancer survivors impact how likely they are to integrate cancer into their identity and experience positive changes after their illness?

Helgeson (2011) found that younger age was related to illness centrality while Park et al. (2011) did not find a significant relationship between age and centrality. Reasons for these discrepancies are unclear but could be related to the single item measure used by Park et al. (2011) rather than using a more psychometrically sound and established measure. It may be possible that younger adults are more likely to define themselves in terms of their cancer (i.e. higher illness centrality) because of the greater impact related to being diagnosed with a life threatening illness at an unexpected age (Helgeson, 2011). Younger cancer survivors often report high levels of positive changes or growth after their illness (Cormio et al., 2013; Sim et al., 2015; Lechner et al., 2003). Researchers believe that this could be due to the longer life expectancy of young adults and the realization that they have more time left on earth to accomplish desired goals. Older people also appear to be more at peace with their life situation and consider psychological growth less important to them at their life stage. Therefore, the following hypotheses intend to confirm these findings suggesting that younger survivors will report more positive changes than older survivors, while also exploring if younger survivors will report higher illness centrality.

Hypothesis 4a: Age will correlate negatively with illness centrality.

Hypothesis 4b: Age will correlate negatively with positive changes.

CHAPTER 2: METHOD

Participants

Participants were recruited for an Internet-based study from multiple social media outlets that included Facebook, Instagram, Twitter and online social support communities. Compared to previous studies on adult cancer survivors (Helgeson, 2011, Park et al., 2011), this current study consisted of a larger sample, $N=347$ (312 female, 33 male, and 2 non-binary) and a younger sample with a mean age of 36.8 ($SD = 10.95$). The minimum age was 21 and the maximum age was 75. Otherwise, in general, demographic variables were not vastly different from prior studies. The majority of participants were White and European American making up 54.2% of the sample, followed by 15.6% Hispanic or Latino, 8.1% other, 7.5% Black and African American, and 2.6% Asian and Asian American. The sample was mostly in a committed relationship or married (73.2%) and college educated or higher (79.6%). See Table 1 for further descriptive information pertaining to demographics.

The majority of participants in this sample were diagnosed with breast cancer (40.6%), blood cancer (33.1%), gynecological cancer (8.1%), thyroid cancer (2.9%), and sarcoma cancer (2.9%). Most participants were diagnosed 1-2 years prior participating in this study (32.3%), with 9.8% being diagnosed within the year, 26.5% being diagnosed 2-3 years prior, 12.4% diagnosed 3-4 years prior, and 18.7% diagnosed 4-5 years prior. When diagnosed most participants' cancer was in Stage II (31.7%) or Stage III (21.3%). The majority of participants (69.5%) were given a good prognosis by their medical team. In terms of cancer treatment, 69.5% of this sample had surgery, 85.9% had chemotherapy, and 46.4% had radiation. Most participants

had not experienced a cancer recurrence (84.4%) and the majority had been in remission for some period within 1-2 years (38%) and less than a year (28.2%). Most participants in this study identified as a cancer survivor (65.7%). See Table 2 for further descriptive information regarding illness information.

Table 1
Means, Standard Deviations, Percentages, and Frequencies of Sample Demographics

Variable	M	SD	Frequency	Percentage (%) of Sample
Age of Participant	36.80	10.95		
Gender				
Female			312	90%
Male			33	9.5%
Non-Binary			2	.6%
Ethnicity				
White and European American			188	54.2%
Black and African American			26	7.5%
Hispanic or Latino			54	15.6%
Asian and Asian Americans			9	2.6%
Other			28	8.1%
Race				
White			271	78.1%
Non-white			72	20.7%
Education Level				
No formal education			2	.6%
High School Diploma/ GED			69	19.9%
College Graduate			173	49.9%
Graduate Level Degree			103	29.7%

Variable	M	SD	Frequency	Percentage (%) of Sample
Current Relationship Status				
Married/Committed relationship			254	73.2%
Single/Divorced			92	26.5%

Table 2
Percentage and Frequency of Illness Information

Variable	Frequency	Percentage (%) of Sample
Cancer Type		
Appendix Cancer	1	.3 %
Blood Cancer	115	33.1%
Brain Cancer	2	.6%
Breast Cancer	141	40.6%
Colon and Rectal Cancers	18	5.2%
Gynecological Cancer	28	8.1%
Kidney Cancer	2	.6%
Lung Cancer	1	.3%
Multiple Cancers	5	1.4%
Oral Cancer	2	.6%
Pancreatic Cancer	2	.6%
Prostate Cancer	1	.3%
Sarcoma Cancer	10	2.9%
Skin Cancer	1	.3%
Testicular Cancer	6	1.7%

Variable	Frequency	Percentage (%) of Sample
Thyroid Cancer	10	2.9%
Time Since Diagnosis		
Less than a year ago	34	9.8%
1-2 years ago	112	32.3%
2-3 years ago	92	26.5%
3-4 years ago	43	12.4%
4-5 years ago	65	18.7%
Cancer Stage		
Stage I	68	19.6%
Stage II	110	31.7%
Stage III	74	21.3%
Stage IV	35	10.1%
N/A due to cancer type	59	17.0%
Prognosis		
Good	210	60.5%
Fair	98	28.2%
Poor	36	10.4%
Surgery		
Yes	241	69.5%
No	106	30.5%
Chemotherapy		
Yes	298	85.9%
No	49	14.1%
Radiation		

Variable	Frequency	Percentage (%) of Sample
Yes	161	46.4%
No	186	53.6%
Time in Remission		
Less than a year ago	98	28.2%
1-2 years ago	132	38.0%
2-3 years ago	53	15.3%
3-4 years ago	39	11.2%
4-5 years ago	25	7.2%
Cancer Recurrence		
Yes, one time	40	11.5%
Yes, more than one time	14	4.0%
No	293	84.4%
Cancer Label		
A victim of cancer	4	1.2%
A cancer patient	18	5.2%
A person who has had cancer	96	27.7%
A cancer survivor	228	65.7%

Measurements

Demographic Characteristics. The demographic questionnaire assessed age, gender, ethnicity, educational level, marital status, work status, type of cancer, stage at diagnosis, type of prognosis given by medical providers, type of treatment, current cancer related health status, years in

remission, number of cancer recurrences, and length of time since treatment ended. The information gathered in the demographic questionnaire was used to assess how these factors relate to illness centrality, such as how age or gender will affect endorsement of illness centrality. Demographics helped clarify the other relationships being studied in this project. See Appendix A.

Illness Identity Label. Participants were asked to answer, “When you think about yourself in relation to your cancer, how much does each of these phrases describe you?” (a) a victim of cancer, (b) a cancer patient, (c) a person who has had cancer, and (d) a survivor, each rated from 1 (not at all) to 5 (very much). Identifying to what extent each participant relates to a cancer level has been used to indicate how much of the cancer experience someone internalizes (Park et al., 2009). Illness identity was also assessed by asking a multiple-choice question, “Choose one out of the four categories that best describes you” (a) a victim of cancer, (b) a cancer patient, (c) a person who has had cancer, (d) a cancer survivor. See Appendix B.

Illness Centrality. Illness Centrality was measured using the Centrality of Events Scale (CES), a 20-item self-report measure that assesses how central an event is to a person’s identity and life story (Berntsen & Rubin, 2006). Furthermore, the CES measures the extent to which a memory of a stressful event forms a reference point for personal identity and attributes meaning to other experiences in a person’s life. Examples include “I feel that this event has become part of my identity” and “I often see connections and similarities between this event and my current relationships with other people”. This scale is rated using a Likert scale of 1 (totally disagree) to 5 (totally agree). This measure was originally a 23-item scale but one item was removed for being vague and two items were removed for tapping into slightly differing themes than the CES was intended for. The 20 remaining items had correlations between .55 and .72. The

questionnaire was given to 707 undergraduates from four North American universities and was found to have a high reliability with a Cronbach's alpha of .94 for the combined sample and had a range of correlations of $\alpha = .93$ and $\alpha = .95$ for the four universities. Researchers have confirmed the 20 item CES to have high reliability ($\alpha = .88$) among a sample of older adults (Ogle, Rubin, & Siegler, 2014). In this study, the Cronbach's alpha for the scale was .93. See Appendix C.

Changes Post Cancer. The Stress-Related Growth Scale (SRGS-R) (Boals & Schuler, 2017) measured changes those individuals sometimes experience following stressful or traumatic events. The SRGS-R is a revised version of the Stress-Related Growth Scale (SRGS) (Park, Cohen & Murch, 1996) with two major modifications. The first revision is that each item was reworded from a positively worded statement to a neutral statement. For example, "I learned to be open to new information and ideas" was changed to "I experienced a change in the extent to which I am open to new information and ideas." The second change is that in addition to reporting positive changes, it allows participants to report negative changes as well. The SRGS-R is rated on a scale of -3 (a very negative change) to 0 (no change) to +3 (a very positive change). Additional examples include "I experienced a change in the extent to which I am a confident person" and "I experienced a change in my belief about how many people care about me". This scale was given to adults residing in the United States and demonstrated high internal reliability with a cronbach's alpha of .93 (Boals & Schuler, 2018). Researchers have confirmed good reliability ($\alpha = .88$) among undergraduate students (Boals & Schuler, 2018b). In this study, the Cronbach's alpha for this scale was .91. See Appendix D.

Benefit Finding. The Benefit Finding Scale is a scale to assess the ways having had breast cancer could have a positive impact on one's life. The stem for each question is "Having had

breast cancer has...," This scale is rated using a 5 point Likert scale ranging from 1 (not at all) to 5 (extremely). The original version of this scale is a 30-item questionnaire that taps into eight domains of growth, including personal priorities (e.g., more grateful for each day), family (e.g., more sensitive to family issues), religion (e.g., confirmed my faith in God), among others. This scale was adapted from Behr's positive contributions scale used with parents of disabled children (Behr, Murphy, & Summers, 1991) and was specifically developed for and validated in samples of women with breast cancer. However, researchers have used multiple versions of this scale, mostly shorter versions, depending on their interests. Researchers have used the 16-item measure version of this scale in a study comparing 5-year breast cancer survivors with age matched controls with nine items that focus on personal growth (e.g. made me more productive) and seven that focus on acceptance (e.g. has helped me take things as they come) (Tomich & Helgeson, 2002). Cronbach's alphas for the cancer survivors and healthy controls were 0.89 and 0.86 for personal growth and 0.88 and 0.87 for acceptance, respectively. In another study, researchers used this same 16-item measure comparing 5-year breast cancer survivors but removed the two items pertaining to religion (Tomich, Helgeson, Vache, 2005). This 14-item measure of benefit finding was found to be highly reliable ($\alpha = .93$) with age matched controls ($\alpha = .92$). The version for this current study was the 16-item measure and the Cronbach's alpha for this scale was .92. See Appendix E.

Meaning in Life. The meaning in life questionnaire (MLQ) consists of 10 items designed to measure perceived life meaning and search for meaning. It is comprised of two subscales, presence of meaning (how much participants feel their lives have meaning), and search for meaning (how much respondents strive to find meaning and understanding in their lives) (Steger, Frazier, Oishi & Kaler, 2006). Examples of the Presence subscale include "I am searching for my

life's meaning" and "My life has a clear sense of purpose" and examples of the Search subscale include "I am searching for meaning in my life" and "I am seeking a purpose or mission for my life". Each subscale is rated using a 7-point Likert-type scale ranging from 1 (Absolutely True) to 7 (Absolutely Untrue) thus scores can range from 7 to 35 on each scale, with higher scores indicating greater perceived meaning or greater search for meaning. Internal consistency was good for both the Presence ($\alpha = .86$) and Search ($\alpha = .87$) subscales among a sample of undergraduate students (Steger et al., 2006). One-month test-retest stability coefficients were good (.70 for the MLQ-Presence, .73 for the MLQ-Search) in a combined sample of students from a university and community college from the Minneapolis metropolitan area (Steger et al., 2006). The Cronbach's alpha of the Presence scale was .85 in a sample of undergraduate students from introductory psychology classes at a large Midwestern university (Steger & Frazier, 2005). Researchers confirmed good internal consistency among a clinical sample of adults with a variety of mental health diagnoses for both the Presence ($\alpha = .81$) and Search subscales ($\alpha = .90$) (Schulenberg, Strack, & Buchanan, 2011). In this study, the Cronbach's alpha for the Presence subscale was .88. See Appendix F.

Life Satisfaction. The Satisfaction with Life Scale (SWLS) is a five item self-report scale that measures global judgments of life satisfaction (Diener et al., 1985). Participants will indicate on a 7-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree), with higher scores indicating higher satisfaction with life. Examples include "In most ways my life is close to my ideal" and "I am satisfied with my life". Responses can range from 5 to 35 points, where 5–9 is extremely dissatisfied, 10–14 is dissatisfied, 15–19 is slightly below average, 20–24 is average, 25–29 is satisfied and 30–35 is highly satisfied. The SWLS demonstrates high internal reliability with a cronbach's alpha of .87 among undergraduate students and good two-month

test-retest correlation with a coefficient of .82 (Diener et al., 1985). This scale was also found to be highly reliable in four samples of adults representing both Western and East Asian cultures ($\alpha = .85-.92$) (Scherman, Salgado, Shao & Berntsen, 2015). In this study, the Cronbach's alpha for the total score was .87. See Appendix G.

Procedures

Prior to data collection, Pace University Institutional Review Board (IRB) granted full approval for this study. Participants were recruited for a web-based study from multiple social media outlets that included Facebook, Instagram, Twitter and online social support communities. The first stage of recruitment included contacting facilitators and members of online cancer-related social support communities and blog sites to inform them of this study and how to access it if eligible and interested in participating. The second stage of recruitment included contacting social media users with public profiles on various platforms (e.g. Facebook, Instagram and Twitter) who used key words associated with some aspect of the cancer experience like “cancer”, “remission”, “no evidence of disease”, among others. All participants were informed about: (a) the purpose of the study (b); the estimated time needed to complete the surveys (15 min); (c) the researchers' credentials and contact information; (d) their right to voluntary participation and anonymity; (e) option to enter gift card raffle to win one of ten \$20 Amazon gift cards once they completed the study and (f) instructions on providing their electronic consent to participate in the study. They were then directed to a web-based survey link that included all study measures (see Appendices A-G).

CHAPTER 3: RESULTS

Descriptive Statistics:

To get a better understanding of the relationships between the main study variables, correlation analyses were conducted. Tables 1 and 2 include frequencies and percentages of relevant demographic information. Table 3 includes correlations pertaining to main study variables. Table 4 includes the means and standard deviations for Table 3. Note that in Table 3, the selected demographics were chosen because they were statistically significant.

Among demographic variables, the length of time in remission and length of time since last cancer treatment had small but significant positive correlations with life satisfaction. Relationship status, having had surgery, and having experienced a recurrence were all small but significant negatively correlations with life satisfaction. Race was found to have a small negative correlation with stress-related growth but had a stronger negative correlation with benefit finding. Prognosis was found to have small but significant negative correlation with identifying as a cancer victim and also a cancer survivor. Prognosis also had small but significant negative correlations with meaning in life, benefit finding, and illness centrality. Education was found to have small negative correlations to identifying as a cancer victim and as a cancer survivor. Age was significantly negatively correlated with illness centrality, whereas gender and cancer stage were found to have weaker, yet positive correlations, with illness centrality.

Among the main predictor and outcome variables, identifying as a cancer survivor had small to moderate strong positive correlations to all well-being outcome variables. Stress-related growth had moderate positive correlations to all outcome variables but had the strongest positive correlation with benefit finding. Meaning in life had small to moderate positive correlations with all outcome variables but had the strongest positive correlations with benefit finding and life

satisfaction. Benefit finding had moderate to strong positive correlations with all outcome variables. Illness centrality and life satisfaction had small to moderate positive correlations with all outcome variables but had no significant relationship to each other. Identifying as a victim had a small but negative correlation with life satisfaction.

Table 3
Intercorrelations of all Main Study Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Age	-																				
2. Gender	-.09	-																			
3. Education	.01	-.03	-																		
4. Race	-.03	.01	.07	-																	
5. Time Since Diagnosis	.13*	-.04	-.04	-.02	-																
6. Time in Remission	.09	-.01	-.02	-.04	.78**	-															
7. Cancer Stage	-.13*	-.02	-.06	-.07	.14*	.02	-														
8. Relationship	-.13*	-.03	-.01	-.12*	.04	.05	.03	-													
9. Prognosis	.01	.04	.14*	.09	-.16**	-.06	-.51**	-.04	-												
10. Surgery	.11*	.06	.05	.08	-.03	-.06	-.16**	-.01	.23**	-											
11. Last Treatment	.09	-.02	-.03	-.00	.75**	.86**	.05	.02	-.03	-.05	-										
12. Recurrence	-.07	-.05	-.02	-.03	.26**	-.05	.15**	-.01	.19**	-.08	-.01	-									
13. Cancer Victim	.01	.03	-.21**	-.13*	-.09	-.11	.03	.17**	-.13*	-.03	-.09	.01	-								
14. Cancer Patient	-.06	.17**	-.07	.03	.01	-.06	.06	-.06	-.08	-.01	-.07	.03	.31**	-							
15. Someone Who Had Cancer	-.08	.06	-.04	.00	-.05	.00	-.01	.02	-.00	.04	-.00	-.11*	.15**	.18**	-						
16. Cancer Survivor	-.10	.00	-.13*	-.14*	.01	-.03	.16**	.11*	-.15**	-.11*	-.03	.04	.08	-.08	-.02	-					
17. Illness Centrality	-.19**	.15**	-.07	-.10	-.00	.00	.13*	.07	-.19**	-.07	-.02	.06	.21**	.28**	.08	.16**	-				
18. Stress-related Growth	-.07	-.03	-.14**	-.17**	.04	.08	.04	-.04	-.09	-.04	.07	.02	-.08	-.01	-.04	.38**	.38*	-			
19. Benefit Finding	-.10	-.04	-.20**	-.31**	-.01	.04	.06	.03	-.17**	-.12*	.04	.03	-.00	-.02	-.02	.38**	.36**	.78**	-		
20. Meaning in Life	.06	.03	.06	-.16**	.04	.07	.05	-.02	-.15**	-.07	.08	-.04	-.09	-.07	-.02	.24**	.18**	.36**	.41**	-	
21. Life Satisfaction	-.00	.01	.09	-.02	.03	.13*	.04	-.15**	.02	-.14*	.12*	-.12*	-.22**	-.11*	-.04	.15**	.05	.30**	.28**	.53**	-

Note: * $p < .05$ ** $p < .001$. Gender coded as 0=male 1=female. Race coded as 0=non-white 1=white. Relationship coded as 0=Committed/Married 1= Single/Divorced. Prognosis coded as 1= Poor, 2= Fair, 3= Good. Surgery coded as 0=No 1=Yes. Time in Remission, Time since Diagnosis, and Last Treatment were all measured in years. Cancer Labels pertain to Likert Scale items.

Table 4

Means and Standard Deviations for Correlation Table 3

<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>N</i>
1. Age	36.80	10.95	347
2. Time Since Diagnosis	2.98	1.26	346
3. Time in Remission	2.31	1.20	347
4. Cancer Stage	2.27	.97	288
5. Last Treatment	2.20	1.20	345
6. Cancer Victim	2.01	1.28	340
7. Cancer Patient	3.03	1.35	341
8. Someone who had cancer	4.42	.90	342
9. Cancer Survivor	4.43	.99	346
10. Illness Centrality	4.05	.74	347
11. Stress-related Growth	27.91	12.39	347
12. Benefit Finding	3.27	.88	347
13. Meaning in Life	25.93	6.10	347
14. Life Satisfaction	23.47	6.88	347

Note: Time in Remission, Time since Diagnosis, and Last Treatment were all measured in years. Cancer labels pertain to Likert Scale items.

Research Question 1: The first research question explored the relationship between illness centrality and well-being outcomes.

Hypothesis 1a

It was hypothesized that illness centrality would be negatively correlated with meaning in life. As shown in Table 3, Pearson correlations were calculated to examine this relationship. In contrast to the hypothesis, illness centrality was not negatively correlated with meaning in life but was positively correlated ($r = .18$, $p = .001$) with a small but statistically significant relationship.

Hypothesis 1b

It was hypothesized that illness centrality would be negatively correlated with life satisfaction. As shown in Table 3, Pearson correlations were calculated to examine this relationship. In contrast to the hypothesis, illness centrality was not significantly correlated with life satisfaction ($r = .05$, $p = .000$).

Hypothesis 1c

It was hypothesized that illness centrality would be positively correlated with benefit finding. As predicted and shown in Table 3, illness centrality was significantly positively correlated with benefit finding ($r = .36$, $p < .001$).

For further analyses, a hierarchical regression analysis was conducted to identify the unique contribution of illness centrality to benefit finding, after controlling for demographics. Results can be found in Table 5. In step 1, demographic variables that were found significantly correlated to benefit finding were entered into the model. In step 2, illness centrality was added. Results revealed that in step one, education, race and prognosis contributed to the regression model ($F(4, 297) = 12.58$, $p < .001$), which accounted for 13% of the variance in benefit finding. In step 2, the introduction of illness centrality indicated that the model was statistically significant ($F(5, 296) = 21.07$, $p < .001$), explaining an additional 12% of the variance in benefit finding ($\Delta R^2 = .12$, $p < .001$). Among all the variables in the model, illness centrality was found to be the best unique predictor of benefit finding ($\beta = .35$). Therefore, Hypothesis 1c was fully supported.

Table 5
Hierarchical Regression Analysis Summary for Demographic and Illness Centrality
Predicting Benefit Finding (N=302)

Variable	B [95% CI]	SE	β	p	R^2	ΔR^2
Step 1					.13**	.13**
Education	-.17 [-.31, -.05]	.07	-.14**	.009		
Race	-.52 [-.72, -.33]	.10	-.29**	.000		
Prognosis	-.16 [-.31, -.02]	.07	-.13*	.025		

Variable	B [95% CI]	SE	β	p	R^2	ΔR^2
Surgery	-.09 [-.30, .11]	.10	-.05	.363		
Step 2					.25**	.12**
Education	-.15 [-.27, -.03]	.06	-.12*	.019		
Race	-.48 [-.65, -.29]	.09	-.26**	.000		
Prognosis	-.08 [-.21, .06]	.07	-.06	.271		
Surgery	-.09 [-.27, .10]	.10	-.05	.362		
Illness Centrality	.43 [.30, .55]	.06	.35**	.000		

Note. ** $p < .01$ * $p < .05$. Adjusted R^2 used for less biased estimate. Race coded as 0 = non-white, 1 = white. Prognosis coded as 1= Poor, 2= Fair, 3= Good. Surgery coded as 0 = No, 1 = Yes.

Research Question 2: Does identifying as a “cancer survivor” affect well-being?

Hypothesis 2a: Identifying as a “survivor” will be positively correlated with stress-related growth.

It was hypothesized that identifying as a cancer survivor would be positively correlated with stress-related growth. As predicted and shown in Table 3, identifying as a cancer survivor was significantly positively correlated with stress-related growth ($r = .38, p < .001$).

For further analyses, a hierarchical regression analysis was conducted to identify the unique contributions of identifying as a survivor to stress-related growth, after controlling for demographics. Results are found in Table 6. In step 1, demographic variables that were found significantly correlated to stress-related growth were entered into the model. In step 2, identifying as a survivor (Likert scale) was added. Results revealed that in step one, education and race significantly contributed to the regression model ($F(2, 301) = 6.38, p = .002$), which accounted for 3% of the variance. The introduction of the survivor label indicated that the model was statistically significant, ($F(3, 300) = 16.74, p < .001$), explaining an additional 11% of the variance in benefit finding ($\Delta R^2 = .10, p < .001$). In this second step, identifying as a survivor was found to be the strongest significant predictor of stress-related growth ($\beta = .33, p < .001$).

In addition, to further understand the association of the survivor label with stress-related growth, a second hierarchical regression analysis was conducted using the survivor label when chosen in the multiple-choice format (i.e., survivor label vs. all other categories). Results are found in Table 7. In this analysis, identifying as a survivor (Multiple choice) was also found to be the strongest significant predictor of stress-related growth ($\beta = .29$, $p = <.001$). Therefore, hypothesis 2a was fully supported.

Table 6
Hierarchical Regression Analysis Summary for Demographic and Survivor Label (Likert Scale) Predicting Stress-Related Growth (N=304)

Variable	B [95% CI]	SE	β	p	R^2	ΔR^2
Step 1					.03**	.03**
Education	-2.09 [-4.02, -.16]	.98	-.12*	.034		
Race	-3.94 [-6.81, -1.08]	1.46	-.15*	.007		
Step 2					.14**	.11**
Education	-1.46 [-3.30, .39]	.94	-.08	.121		
Race	-2.81 [-5.55, -.08]	1.40	-.11*	.04		
Survivor Label (Likert scale)	4.28 [2.88, 5.69]	.71	.33**	.000		

Note. ** $p < .01$ * $p < .05$. Adjusted R^2 used for less biased estimate. Race coded as 0 = non-white, 1 = white.

Table 7
Hierarchical Regression Analysis Summary for Demographic and Survivor Label (Multiple Choice) Predicting Stress-Related Growth (N=304)

Variable	B [95% CI]	SE	β	p	R^2	ΔR^2
Step 1					.04**	.04**
Education	-1.99 [-3.92, -.06]	.98	-.12*	.044		
Race	-4.10 [-6.96, -1.23]	1.46	-.16**	.005		
Step 2					.11**	.07**
Education	-1.43 [-3.30, .44]	.94	-.08	.133		
Race	-3.75 [-6.50, -.10]	1.40	-.15**	.008		
Survivor Label (Multiple choice)	7.62 [4.76, 10.47]	1.45	.29**	.000		

Note. ** $p < .01$ * $p < .05$. Adjusted R^2 used for less biased estimate. Race coded as 0 = non-white, 1 = white. Survivor Label coded as 0 = Non-survivor, 1 = survivor.

Although not hypothesized, a series of regression were conducted with the other identity labels in order to determine their relationship to stress-related growth. After controlling for demographics, results indicated that introducing the cancer victim label ($\beta = -.13$, $p = .027$) was statistically significant, ($F(3, 295) = 5.96$, $p = .001$, explaining a total of 6% of the variance. Neither the cancer patient label nor person who had cancer label were statistically significant after controlling for demographic variables.

Hypothesis 2b: Identifying as a “survivor” will be positively correlated with meaning in life.

It was hypothesized that identifying as a cancer survivor would be positively correlated with meaning in life. As predicted and shown in Table 3, identifying as a cancer survivor (Likert Scale) was significantly positively correlated with meaning in life ($r = .24$, $p < .001$).

For further analyses, a hierarchical regression analysis was conducted to identify the unique contributions of identifying as a survivor to meaning in life, after controlling for demographics. Results are found in Table 8. In step 1, demographic variables that were found significantly correlated to meaning in life were entered into the model. In step 2, identifying as a survivor (Likert scale) was added. Results revealed that in step one, race and prognosis significantly contributed to the regression model ($F(2, 298) = 8.37$, $p < .001$), which accounted for 5% of the variance in meaning in life. The introduction of the survivor label (Likert scale) indicated that the regression model was statistically significant ($F(3, 297) = 9.01$, $p = .002$), explaining an additional 2% of the variance in benefit finding ($\Delta R^2 = .03$, $p < .01$). In this second step, identifying as a survivor was found to be the strongest significant predictor of meaning in life ($\beta = .18$, $p = .002$).

In addition, a hierarchical regression analysis was conducted using the survivor label multiple choice item. Results are found in Table 9. In this analysis, identifying as a survivor

(Multiple choice) was also found to be the strongest significant predictor of meaning in life ($\beta = .16, p = .005$). Therefore, Hypothesis 2b was fully supported.

Table 8
Hierarchical Regression Analysis Summary for Demographic and Survivor Label (Likert Scale) Predicting Meaning in Life (N=301)

Variable	B [95% CI]	SE	β	<i>p</i>	R^2	ΔR^2
Step 1					.05**	.05**
Race	-1.87 [-3.27, -.47]	.71	-.15*	.009		
Prognosis	-1.49 [-2.50, -.48]	.51	-.17**	.004		
Step 2					.07**	.02**
Race	-1.57[-2.96, -.18]	.71	-.13*	.027		
Prognosis	-1.27 [-2.27, -.26]	.51	-.14*	.014		
Survivor Label (Likert scale)	1.14 [.42, 1.86]	.36	.18**	.002		

Note. ** $p < .01$ * $p < .05$ Adjusted R^2 used for less biased estimate. Race coded as 0 = non-white, 1=white. Prognosis coded as 1= Poor, 2= Fair, 3= Good.

Table 9
Hierarchical Regression Analysis Summary for Demographic and Survivor Label (Multiple Choice) Predicting Meaning in Life (N=301)

Variable	B [95% CI]	SE	β	<i>p</i>	R^2	ΔR^2
Step 1					.04**	.04**
Race	-1.78 [-3.18, -.36]	.71	-.14*	.012		
Prognosis	-1.42 [-2.42, -.42]	.51	-.16**	.005		
Step 2					.07**	.03**
Race	-1.71 [-3.08, -.33]	.70	-.14*	.015		
Prognosis	-1.17 [-2.17, -.17]	.51	-.13*	.022		
Survivor Label (Multiple choice)	2.07 [.63, 3.51]	.73	.16**	.005		

Note. ** $p < .01$ * $p < .05$ Adjusted R^2 used for less biased estimate. Race coded as 0 = non-white, 1=white. Prognosis coded as 1= Poor, 2= Fair, 3= Good. Survivor Label coded as 0 = Non-survivor, 1 = survivor.

Although not hypothesized, a series of regression were conducted with the other identity labels in order to determine their relationship to meaning in life. After controlling for demographics variables, results indicated that introducing the cancer victim label ($\beta = -.14, p = .015$) was statistically significant, ($F(3, 292) = 7.72, p < .001$), explaining a total of 7% of the

variance. Neither the cancer patient label nor person who had cancer label were statistically significant after controlling for demographic variables.

Hypothesis 2c: Identifying as a “survivor” will be positively correlated with life satisfaction.

It was hypothesized that identifying as a cancer survivor would be positively correlated with life satisfaction. As predicted and shown in Table 3, there was a small but significant negative relationship between identifying as a cancer survivor and life satisfaction ($r = .15$, $p = .005$).

For further analyses, a hierarchical regression analysis was conducted to identify the unique contributions of identifying as a survivor to life satisfaction, after controlling for demographics. Results are found in Table 10. In step 1, demographic variables that were found significantly correlated to life satisfaction were entered into the model. In step 2, the survivor label (Likert scale) was added. Results revealed that in step one, all demographic variables significantly contributed to the regression model ($F(4, 337) = 6.553$, $p < .001$), which accounted for 6% of the variance in life satisfaction. The introduction of the survivor label (Likert scale) indicated that the regression model was statistically significant ($F(5, 336) = 7.26$, $p = .002$), explaining an additional 2% of the variance in life satisfaction ($\Delta R^2 = .02$, $p < .01$). In the full model, all demographic variables were significant predictors of life satisfaction. Identifying as a survivor was also found to be a significant predictor of life satisfaction ($\beta = .16$, $p = .002$).

In addition, a hierarchical regression analysis was conducted using the survivor label multiple choice item. Results are found in Table 11. However, in this analysis, identifying as a survivor (Multiple choice) was not found to be a significant predictor of life satisfaction ($\beta = .08$,

$p = .145$). Therefore, Hypothesis 2c was fully supported when using the survivor label (Likert scale) item but not when using the survivor label (Multiple choice) item.

Table 10

Hierarchical Regression Analysis Summary for Demographic and Survivor Label (Likert Scale) Predicting Life Satisfaction (N=342)

Variable	B [95% CI]	SE	β	p	R^2	ΔR^2
Step 1					.06**	.06**
Relationship	-2.50 [-4.12, -.88]	.82	-.16*	.003		
Surgery	-2.02 [-3.57, -.470]	.79	-.14*	.011		
Last Treatment	.68 [.09, 1.28]	.30	.12*	.025		
Cancer Recurrence	-1.88 [-3.35, -.41]	.75	-.13*	.012		
Step 2					.08**	.02**
Relationship	-2.77 [-4.37, -1.16]	.81	-.18**	.001		
Surgery	-1.77 [-3.31, -.23]	.78	-.12*	.025		
Last Treatment	.72 [.13, 1.31]	.30	.13*	.016		
Cancer Recurrence	-2.00 [-3.41, -.51]	.74	-.14**	.008		
Survivor Label (Likert scale)	1.13 [.41, 1.86]	.37	.16**	.002		

Note. ** $p < .01$ * $p < .05$. Adjusted R^2 used for less biased estimate. Relationship coded as 0 = Committed/Married, 1 = Single/Divorced. Surgery coded as 0 = No, 1 = Yes. Last Treatment was measured in years. Cancer Recurrence coded as 1 = No, 2 = Yes, once, 3 = Yes, more than once.

Table 11

Hierarchical Regression Analysis Summary for Demographic and Survivor Label (Multiple Choice) Predicting Life Satisfaction (N=342)

Variable	B [95% CI]	SE	β	p	R^2	ΔR^2
Step 1					.06**	.06**
Relationship	-2.46 [-4.07, -.85]	.82	-.16**	.003		
Surgery	-2.00 [-3.56, -.45]	.79	-.13*	.012		
Last Treatment	.68 [.08, 1.27]	.30	.11*	.026		
Cancer Recurrence	-1.84 [-3.31, -.38]	.74	-.13*	.014		
Step 2					.06	.00
Relationship	-4.13 [-4.37, -.91]	.81	-.16**	.002		
Surgery	-1.89 [-3.45, -.33]	.79	-.13*	.017		
Last Treatment	.67 [.08, 1.27]	.30	.12*	.026		
Cancer Recurrence	-1.91 [-3.38, -.48]	.74	-.14*	.011		
Survivor Label (Multiple choice)	1.12 [-.39, 2.6]	.77	.08	.145		

Note. ** $p < .01$ * $p < .05$. Adjusted R^2 used for less biased estimate. Relationship coded as 0 = Committed/Married, 1 = Single/Divorced. Surgery coded as 0 = No, 1 = Yes. Last Treatment was measured in years. Cancer Recurrence coded as 1 = No, 2 = Yes, once, 3 = Yes, more than once. Survivor Label coded as 0 = Non-survivor, 1 = survivor.

Although not hypothesized, a series of regression were conducted with the other identity labels in order to determine their relationship to life satisfaction. After controlling for demographics variables, results indicated that introducing the cancer victim label ($\beta = -.19$, $p = .015$) was statistically significant, ($F(5, 335) = 7.69$, $p < .000$), explaining a total of 10% of the variance. Neither the cancer patient label nor person who had cancer label were statistically significant after controlling for demographic variables.

Hypothesis 2d: Identifying as a “survivor” will be positively correlated with benefit finding.

It was hypothesized that identifying as a cancer survivor (Likert scale) would be positively correlated with benefit finding. As predicted and shown in Table 3, identifying as a cancer survivor was significantly positively correlated with benefit finding ($r = .38$, $p = .000$).

For further analyses, a hierarchical regression analysis was conducted to identify the unique contributions of identifying as a survivor to life benefit finding, after controlling for demographics. Results are found in Table 12. In step 1, demographic variables that were found significantly correlated to benefit finding were entered into the model. In step 2, identifying as a survivor (Likert scale) was added. Results revealed that in step one, demographic variables significantly contributed to the regression model ($F(4, 296) = 12.286$, $p < .001$), which accounted for 13% of the variance in benefit finding. Race ($\beta = -.28$, $p < .001$), education ($\beta = -.15$, $p = .006$), and prognosis ($\beta = -.11$, $p = .042$) were significant predictors of benefit finding. The introduction of the survivor label (Likert scale) indicated that the regression model was statistically significant ($F(5, 295) = 17.21$, $p < .001$), explaining an additional 8% of the variance in benefit finding ($\Delta R^2 = .08$, $p < .01$). In this second step, identifying as a survivor (Likert scale) was the strongest predictor of benefit finding ($\beta = .30$, $p < .001$)

In addition, a hierarchical regression analysis was conducted using the survivor label multiple choice item. Results are found in Table 13. In this analysis, identifying as a survivor (Multiple choice) was also found to be the strongest significant predictor of benefit finding ($\beta = .25, p < .001$). Therefore, Hypothesis 2d was fully supported.

Table 12
Hierarchical Regression Analysis Summary for Demographic and Survivor Label (Likert Scale) Predicting Benefit Finding (N=301)

Variable	B [95% CI]	SE	β	<i>p</i>	R^2	ΔR^2
Step 1					.13**	.13**
Race	-.51 [-.71, -.32]	.10	-.28**	.000		
Education	-.19 [-.32, -.05]	.07	-.15**	.006		
Prognosis	-.15 [-.29, -.01]	.07	-.11*	.042		
Surgery	-.10 [-.31, .10]	.10	-.06	.318		
Step 2					.21**	.08**
Race	-.45 [-.63, -.26]	.09	-.25**	.000		
Education	-.15 [-.28, -.02]	.06	-.12*	.020		
Prognosis	-.11 [-.24, .03]	.07	-.08	.132		
Surgery	-.07 [-.27, .12]	.10	-.04	.471		
Survivor Label (Likert Scale)	2.74 [.18, .37]	.05	.30**	.000		

Note. ** $p < .01$ * $p < .05$. Adjusted R^2 used for less biased estimate. Race coded as 0 = non-white, 1 = white. Prognosis coded as 1 = Poor, 2 = Fair, 3 = Good. Surgery coded as 0 = No, 1 = Yes.

Table 13
Hierarchical Regression Analysis Summary for Demographic and Survivor Label (Multiple Choice) Predicting Benefit Finding (N=301)

Variable	B [95% CI]	SE	β	<i>p</i>	R^2	ΔR^2
Step 1					.13**	.13**
Race	-.52 [-.71, -.32]	.10	-.29**	.000		
Education	-.18 [-.31, -.05]	.07	-.15**	.008		
Prognosis	-.16 [-.30, -.02]	.07	-.12*	.027		
Surgery	-.09 [-.39, .11]	.10	-.05	.383		
Step 2					.19**	.06**
Race	-.50 [-.69, -.32]	.10	-.28**	.000		
Education	-.15 [-.28, -.02]	.07	-.12*	.022		
Prognosis	-.11 [-.25, .03]	.07	-.09	.115		
Surgery	-.05 [-.25, .14]	.10	-.03	.589		
Survivor Label (Multiple Choice)	.47 [.28, .67]	.10	.25**	.000		

Table continues

Table continued

Note. $**p < .01$ $*p < .05$. Adjusted R^2 used for less biased estimate. Race coded as 0 = non-white, 1 = white. Prognosis coded as 1= Poor, 2= Fair, 3= Good. Surgery coded as 0 = No, 1 = Yes. Survivor Label coded as 0 = Non-survivor, 1 = survivor.

Although not hypothesized, a series of regression were conducted with the other identity labels in order to determine their relationship to benefit finding. After controlling for demographics variables, none of the other cancer labels significantly predicted benefit finding.

Supplementary Analysis for Identity Categories

Based on previous research (Park et al., 2009), the primary way illness identity was measured was by asking participants to indicate the degree to which they identified with each of the four prescribed labels (victim of cancer, cancer patient, a person who has had cancer, cancer survivor) on 1 (not at all) to 5 (very much) Likert scale. An advantage of this format is that it allows individuals to independently rank each category, therefore providing a picture of multiple identities at the same time. One disadvantage, however, is that it does not allow for clean comparisons across the respective identities, given that the groups are not mutually exclusive. To get a better understanding of whether there might be differences based on the cancer label they most identified with, a second question asked participants to “choose the category that best describes you.”

Using results from this second assessment, mean differences across the 4 outcomes measures were examined. As indicated in Table 14, there were considerable differences in cell sizes. Whereas the majority of participants were most likely to choose the “survivor” label (n=228), followed by “person with cancer” (n=96), very few were likely to choose “cancer patient” (n=18) and “victim of cancer ” label (n=4). Although unequal sample sizes can present problems of interpretation using the traditional F statistic, the main results presented below were

no different using the more robust and conservative Welch test. The F results are presented here because it more easily allows for interpretation of effect size (η^2).

Table 14
Means and Standard Deviations for Identity Categories (Multiple Choice) and Outcome Variables

Variable	<u>Cancer Victim</u> (MC) <i>n</i> =4		<u>Cancer Patient</u> (MC) <i>n</i> =18		<u>Someone who</u> <u>had Cancer (MC)</u> <i>n</i> =96		<u>Cancer Survivor</u> (MC) <i>n</i> =228		F Test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Total Score									
Stress-related	19.25	15.71	23.28	12.64	22.58	13.08	30.66	11.17	12.20, <i>p</i> = .000
Growth									
Benefit Finding	3.06	.71	2.73	1.00	2.90	.86	3.48	.83	4.98, <i>p</i> = .002
Meaning in Life	20.50	7.19	23.11	5.74	24.83	6.14	26.76	5.91	5.99, <i>p</i> = .001
Life Satisfaction	12.00	1.83	19.78	7.80	23.68	6.49	23.87	6.80	13.06, <i>p</i> = .000
	2.01 _a	1.28 _a	3.03 _a	1.35 _a	4.42 _a	.90 _a	4.43 _a	.99 _a	

Note: Subscript scores pertain to means and standard deviations for identity categories on Likert scale.

Table 15
Means and Standard Deviations for Identity Categories (Multiple Choice) and Identity Categories (Likert Scale)

Variable	<u>Cancer Victim</u> (MC) <i>n</i> =4		<u>Cancer Patient</u> (MC) <i>n</i> =18		<u>Someone who</u> <u>had Cancer (MC)</u> <i>n</i> =96		<u>Cancer</u> <u>Survivor (MC)</u> <i>n</i> = 228		F test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Cancer Victim (Likert)	3.75	1.89	2.12	1.45	1.76	1.02	2.09	1.34	4.09, <i>p</i> = .007
Cancer Patient (Likert)	3.50	1.30	4.89	.32	2.91	1.26	2.92	1.34	13.55, <i>p</i> = .000
Someone who had Cancer (Likert)	3.25	1.71	4.11	1.08	4.83	.48	4.42	.90	12.50, <i>p</i> = .000
Cancer Survivor (Likert)	3.25	1.26	3.12	1.58	3.64	1.01	4.89	.41	92.27, <i>p</i> = .000

First, a one-way analysis of variance was conducted to determine if there was any difference in stress-related growth based on identity labels endorsed by participants. There was a significant effect of identity label on stress-related growth for the four conditions ($F = (3, 342) = 12.20, p < .001$). The strength of this relationship, as indexed by η^2 , was .10, indicating a medium-sized effect. Levene's test indicated no violation of homogeneity of variances across

groups. Post hoc comparisons using the Tukey HSD test indicated that the mean score of stress-related growth for the cancer survivor label ($M = 30.66$, $SD = 11.16$) was significantly higher than a person who has had cancer label ($M = 22.58$, $SD = 13.08$, $p < .001$).

Second, a one-way analysis of variance was conducted to determine if there was any difference in benefit finding based on identity labels endorsed by participants. There was a significant effect of identity label on benefit finding for the four conditions ($F = (3, 342) = 13.06$, $p < .001$). The strength of this relationship, as indexed by η^2 , was .10, indicating a medium-sized effect. Levene's test indicated no violation of homogeneity of variances across groups. Post hoc comparisons using the Tukey HSD test indicated that the mean score of benefit finding for cancer survivor ($M = 3.48$, $SD = .83$) was significantly higher than a person who has had cancer ($M = 2.90$, $SD = .86$, $p < .001$) and a cancer patient ($M = 2.73$, $SD = .10$, $p = .002$).

Third, a one-way analysis of variance was conducted to determine if there was any difference in meaning in life based on identity labels endorsed by participants. There was a significant effect of identity label on benefit finding for the four conditions ($F = (3, 342) = 4.98$, $p = .002$). The strength of this relationship, as indexed by η^2 , was .04, indicating a small-sized effect. Levene's test indicated no violation of homogeneity of variances across groups. Post hoc comparisons using the Tukey HSD test indicated that the mean score of meaning in life for cancer survivor ($M = 26.76$, $SD = 5.91$, $p = .041$) was significantly higher than a person who has had cancer ($M = 24.83$, $SD = 6.13$).

Fourth, a one-way analysis of variance was conducted to determine if there was any difference in life satisfaction based on identity labels endorsed by participants. There was a significant effect of identity label on benefit finding for the four conditions ($F = (3, 342) = 5.99$, $p = .001$). The strength of this relationship, as indexed by η^2 , was .05, indicating a small-sized

effect. Levene's test indicated no violation of homogeneity of variances across groups. Post hoc comparisons using the Tukey HSD test indicated that the mean score of life satisfaction for a victim of cancer ($M = 12.00$, $SD = 1.83$) was significantly lower than the mean score for a person who has had cancer ($M = 23.67$, $SD = 6.49$, $p < .004$) and also significantly lower than a cancer survivor ($M = 23.87$, $SD = 6.80$, $p < .003$).

In summary, the analyses of mean differences across cancer identity labels provided further support that identifying as a cancer survivor was most associated with positive outcomes. Although the cancer victim label was associated with the lowest means on the well-being outcomes, with the exception of life satisfaction, it did not yield significant differences most probably due to the small number of endorsed members in this group ($n = 4$).

Since this study measured illness identity (victim of cancer, cancer patient, a person who has had cancer, cancer survivor) using both a Likert scale and a multiple-choice item, mean differences across the various illness identity labels were examined. These results are in Table 15.

First, a one-way analysis of variance was conducted to determine if there was any difference in endorsement of the victim of cancer likert scale item based on multiple choice illness identity labels. Post-hoc comparisons using the Tukey HSD test indicated that there were no statistical mean differences for the victim of cancer (Likert scale) and any of the multiple-choice cancer labels.

Second, a one-way analysis of variance was conducted to determine if there was any difference in endorsement of the cancer patient likert scale item based on multiple choice illness identity labels. Post hoc comparisons using the Tukey HSD test indicated that the mean score of cancer patient (Likert-- capital (again, need to correct these mistakes) scale) for the cancer

patient (multiple choice) item ($M = 4.89$, $SD = .32$, $p < .001$) was significantly higher than for the cancer survivor (multiple choice) item ($M = 2.92$, $SD = 1.34$, $p < .001$) and for a person who has had cancer ($M = 2.91$, $SD = 1.34$, $p < .001$). These results suggest that identifying as a cancer patient for the multiple-choice item resulted in higher endorsement of cancer patient for the likert scale item.

Third, a one-way analysis of variance was conducted to determine if there was any difference in endorsement of the person who had cancer likert scale item based on multiple choice illness identity labels. Post hoc comparisons using the Tukey HSD test indicated the mean score of a person who has had cancer (Likert scale) for the person who had cancer (multiple choice) item ($M = 4.83$, $SD = 4.27$, $p < .001$) was higher than the cancer survivor (multiple choice) item ($M = 4.29$, $SD = .95$, $p < .001$). These results suggest that identifying as a person who had cancer for the multiple-choice item resulted in higher endorsement of person who had cancer for the likert scale item.

Lastly, a one-way analysis of variance was conducted to determine if there was any difference in endorsement of the cancer survivor likert scale item based on multiple choice illness identity labels. Post hoc comparisons using the Tukey HSD test indicated the mean score of cancer survivor (likert scale) for the cancer survivor (multiple choice) item was significantly higher for the person who had cancer (multiple choice) item ($M = 3.64$, $SD = 1.01$, $p < .001$) and cancer patient (multiple choice) item ($M = 3.12$, $SD = 1.58$, $p = .001$). These results suggest that identifying as a cancer survivor for the multiple-choice item resulted in higher endorsement of cancer survivor for the likert scale item.

Research Question 3: How will experiencing changes, positive and negative, post cancer, impact the relationship between illness centrality and well-being outcomes?

Hypothesis 3a: The relationship between illness centrality and meaning in life will be moderated by the extent to which participants report positive vs. negative changes post cancer, as measured by an indicator of stress-related growth. That is, among those who report less stress-related growth, illness centrality will be negatively associated with meaning in life, as opposed to those who report higher stress-related growth, illness centrality will be positively associated with meaning in life.

To test whether perceived changes post cancer moderates the relationship between illness centrality and meaning in life, a hierarchical multiple regression analysis was conducted. Results are found in Table 16. In step 1, two variables were included: illness centrality and stress-related growth. To avoid potentially problematic high multicollinearity with the interaction term, the variables were standardized and an interaction term between illness centrality and stress-related growth was created. Results revealed that in step one, illness centrality and stress-related growth significantly contributed to the regression model, $F(2, 344) = 26.88, p < .001$ which accounted for 13% of the variance in meaning in life. Stress-related growth ($\beta = .35, p < .001$) was found to be the only significant predictor in this step.

Next, the interaction term between illness centrality and stress-related growth was added to the regression model. The introduction of the interaction variable indicated that the regression model was statistically significant $F(3, 343) = 25.18, p = .001$. Introducing the interaction variable to the regression model explained an additional 4% of the variance in meaning in life ($\Delta R^2 = .04, p < .001$). In this second step, stress-related growth ($\beta = -.36, p < .001$) and the interaction term ($\beta = .22, p < .001$) were found to be significant predictors of meaning in life. Therefore, Hypothesis 3a was fully supported.

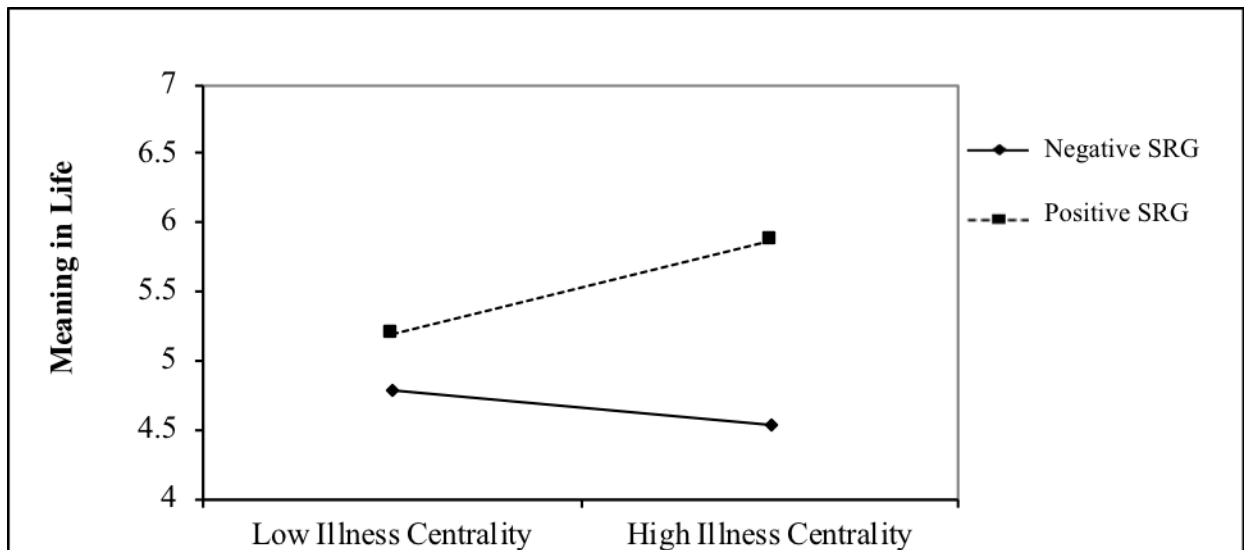
To better understand the nature of the interaction effect, a simple slopes analysis was conducted. The simple-slopes analysis depicted in Figure 1, revealed that among people with positive levels of stress-related growth (1 SD above the mean), illness centrality was strongly associated with higher levels of meaning in life, $B = 0.35$ ($SE = .095$), $t = 3.65$, $p = .0003$. By contrast, among people with negative levels of stress related growth (1 SD below the mean), illness centrality was associated with lower meaning in life, but effects were small, $B = 0.13$ ($SE = .070$), $t = 1.87$, $p = .063$.

Table 16
Hierarchical Regression Analysis Summary for Illness Centrality and Stress- Related Growth Predicting Meaning in Life (N=347)

Variable	B [95% CI]	SE	β	p	R^2	ΔR^2
Step 1					.13**	.13**
Illness Centrality	.05 [-.08, .18]	.07	.04	.467		
Stress-Related Growth	.43 [.30, .56]	.07	.35**	.000		
Step 2					.17**	.04**
Illness Centrality	-.10 [-.02, .24]	.07	.09	.107		
Stress-Related Growth	.44 [.31, .56]	.07	.36**	.000		
Centrality X Growth	.24 [.13, .35]	.06	.22**	.000		

Note. ** $p < .01$ * $p < .05$. Adjusted R^2 used for less biased estimate

Figure 1. Relation of illness centrality to meaning in life for those who reported higher vs. lower stress related growth.



Hypothesis 3b: The relationship between illness centrality and life satisfaction will be moderated by the extent to which participants report positive vs. negative changes post cancer, as measured by an indicator of stress-related growth. That is, among those who report less stress-related growth, illness centrality will be negatively associated with life satisfaction, as opposed to those who report higher stress-related growth, illness centrality will be positively associated with life satisfaction.

To test whether perceived changes post cancer moderates the relationship between illness centrality and life satisfaction, a hierarchical multiple regression analysis was conducted. Results are found in Table 17. In step 1, two variables were included: illness centrality and stress related growth. To avoid potentially problematic high multicollinearity with the interaction term, the variables were standardized and an interaction term between illness centrality and stress-related growth was created. Results revealed that in step one, illness centrality and stress-related growth significantly contributed to the regression model, $F(2, 344) = 19.16, p < .001$ which accounted for 10% of the variance in life satisfaction. Only stress-related growth was found to be a significant unique predictor of life satisfaction ($\beta = .34, p < .001$).

Next, the interaction term between illness centrality and stress-related growth was added to the regression model. The introduction of the interaction variable indicated that the regression model was statistically significant $F(3, 343) = 16.93, p = .001$. Introducing the interaction variable to the regression model explained an additional 3% of the variance in meaning in life ($\Delta R^2 = .03, p < .001$). In this second step, stress-related growth ($\beta = .34, p < .001$) and the interaction term were found to be significant predictors of life satisfaction ($\beta = .17, p = .001$). Therefore, Hypothesis 3b was fully supported.

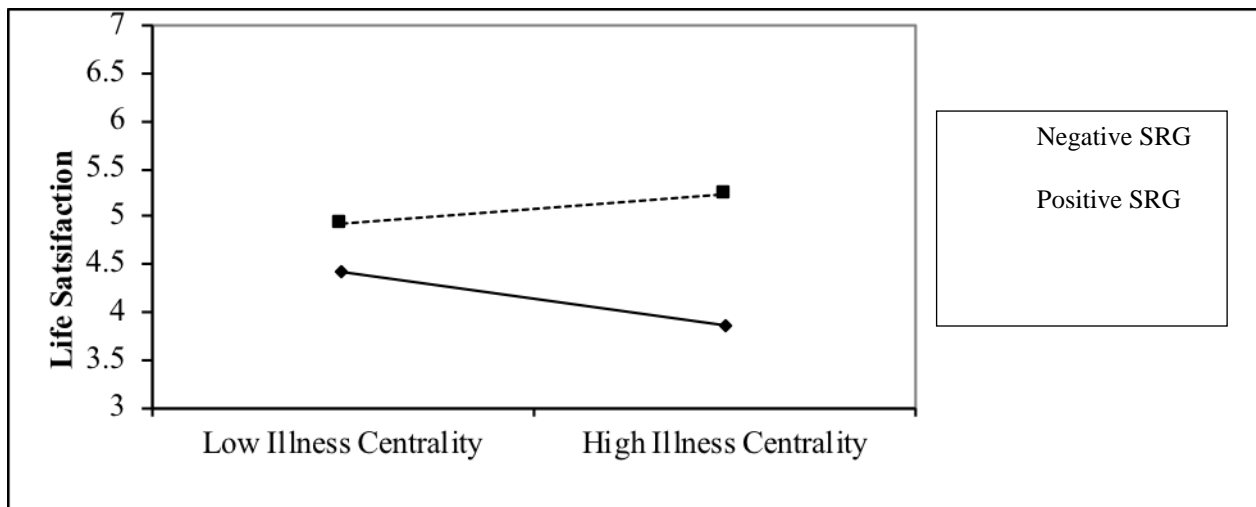
To better understand the nature of the interaction effect, a simple slopes analysis was conducted. The simple-slopes analysis depicted in Figure 2, revealed that among people with negative levels of stress related growth (1 SD below the mean), illness centrality was strongly associated with lower levels of life satisfaction, $B = 0.27$ ($SE = .1$), $t=2.74$, $p = .0065$. By contrast, among people with positive levels of stress related growth (1 SD above the mean), illness centrality was associated with higher life satisfaction, but not significant, $B = 0.15$ ($SE = .118$), $t = 1.30$, $p = .194$.

Table 17
Hierarchical Regression Analysis Summary for Illness Centrality and Stress- Related Growth Predicting Life Satisfaction (N=347)

Variable	B [95% CI]	SE	β	p	R^2	ΔR^2
Step 1					.10**	.10**
Illness Centrality	-.11 [-.26, .04]	.08	-.08	.142		
Stress-Related Growth	.47 [.32, .62]	.08	.34**	.000		
Step 2					.12**	.02**
Illness Centrality	-.06 [-.21, .09]	.08	-.04	.437		
Stress-Related Growth	.47 [.32, .62]	.08	.34**	.000		
Centrality X Growth	.21[.09, .34]	.06	.17**	.001		

Note. ** $p < .01$ * $p < .05$. Adjusted R^2 used for less biased estimate

Figure 2. Relation of illness centrality to life satisfaction for those who reported higher vs. lower stress related growth.



Research Question 4: The fourth research question explored the relationship between the age of cancer survivors with how likely they were to integrate cancer into their identity and experience positive changes after their illness.

Hypothesis 4a:

It was hypothesized that age would be negatively correlated with illness centrality. As shown in Table 3, Pearson correlations were calculated to examine this relationship. As predicted, there was a small but significant negative relationship between age and illness centrality ($r = -.19$, $p = .000$).

Hypothesis 4b:

It was hypothesized that age would be negatively correlated with stress-related growth. As shown in Table 3, Pearson correlations were calculated to examine this relationship. In contrast to the hypothesis, age was not significantly correlated with stress-related growth ($r = -.07$, $p = .192$).

DISCUSSION

Summary of Results

Research has identified that living as a cancer survivor involves identity reconstruction and the integration of the illness into one's self-concept. Several studies have examined this by either investigating identity labels endorsed by people who have had cancer (Park et al., 2009b) or by examining levels of illness centrality among people who have had cancer (Helgeson, 2011; Park et al., 2011). This current study is the first study to examine both of these indicators of illness identity as predictors of well-being.

The first goal of this study was to confirm previous findings on illness identity and well-being outcome variables. This study is the first to explore meaning in life as an indicator of well-being in association with illness identity, which is surprising considering the important role meaning has for cancer survivors (Park, 2010). In contrast to some previous research and to what was hypothesized, illness centrality was not negatively correlated with meaning in life or life satisfaction. In fact, the opposite relationship was found. However, as expected, it was significantly positively correlated to benefit finding. Also, as expected, identifying as a cancer survivor was significantly correlated with all outcome variables: stress-related growth, benefit finding, meaning in life, and life satisfaction.

The second goal of this study was to investigate whether experiencing stress-related positive and negative changes would moderate the relationship between illness centrality and meaning in life and life satisfaction. Perhaps the most noteworthy finding of this study was that as expected, stress-related growth was found to moderate the relationship between illness centrality and meaning in life and life satisfaction.

The last goal of this study was to explore how age would impact illness centrality and the experience of stress-related positive and negative changes after their illness. As expected, age was significantly negatively correlated with illness centrality. However, in contrast to what was hypothesized, age was not found to significantly correlate with stress-related growth.

Demographics, Illness Identity, and Well-being Outcomes

In terms of who was more or less likely to identify themselves in terms of having had cancer, a few demographic variables were predictive. In this current study, gender was a significant predictor of illness centrality, ($r = .15$, $p = .004$). Albeit a small effect, females in this sample viewed cancer as more central to their self-concept than males, a finding not found in

previous research on illness centrality (Park et al., 2011). However, this finding is consistent with prior research that has found similar results among those with chronic illness (Helgeson & Novak, 2007; Luyckx, Rassart, & Weets, 2015). Helgeson and Novak (2007) found that among adolescents with diabetes, females were more likely to report their illness as central to their identity while Luyckx et al. (2015), did not find gender differences in levels of illness centrality among adults with diabetes. One possible explanation for why women may report illness to be more central to their self-concept than men is because women have been found to be more concerned about health matters than men. Women tend to think more and take a more active role with their health by visiting their doctor more frequently than men (Kandrack, Grant, & Segall, 1991), and valuing healthy eating more than men (Wardle et al., 2004). Also, when sick, women are more likely than men to adopt a “sick role” by taking medication, limiting activities, or seeking out medical care (Green & Pope, 1999; Kandrack et al., 1991). It is important to note, however, that the number of female participants ($n = 312$) in this study was significantly higher than males ($n = 33$). Therefore, these significant differences might be related to this stark contrast and possible selection effects. Future research should continue to explore gender and its relationship to illness centrality.

Researchers have found that young adults report greater impacts as a result of cancer, both negative (Poort et al., 2017) and positive (Helgeson et al., 2006), possibly influencing how they view their illness as part of their identity. This study hypothesized and found that age was a significant negative predictor of illness centrality ($r = -.19$, $p < .001$). Younger participants in this study were more likely to view their illness as central to their self-concept. There have been mixed findings pertaining to age and illness centrality among cancer survivors as Helgeson

(2011) found that younger age was related to illness centrality while Park et al. (2011) did not find a significant relationship between age and centrality.

Previous research on illness centrality among cancer survivors found no significant relationships between illness-related demographic variables and illness centrality (Helgeson, 2011; Park et al., 2011), however this study did. This current study found that cancer stage and prognosis were significantly correlated with illness centrality ($r = .13$, $p = .031$; $r = -.19$, $p < .001$ respectively). Although these relationships were small, these results suggest that those who had a higher cancer stage and worse prognosis viewed their illness as more central to their self-concept. Future research should examine these relationships further.

This current study found some relationships between demographic variables and cancer label endorsement (Likert scale questions). Those with a worse prognosis were more likely to identify as a cancer victim but also as a cancer survivor. Those that had lower education and were non-white were more likely to endorse being a cancer survivor. Findings suggest that the type of treatment received may influence adopting the survivor label. For example, chemotherapy was a significant predictor of identifying as a cancer survivor ($r = .18$, $p = .001$). This confirms prior research that found that adult women who had breast cancer and had chemotherapy were more likely to identify as a survivor than those who did not (Jagielski et al., 2012).

Research has found that young adults can be negatively impacted by cancer in various domains, however, younger survivors tend to report high levels of positive changes or growth (Cormio et al., 2013; Helgeson et al., 2006; Lechner et al., 2003; Sim et al., 2015). Researchers believe that this could be because older people appear to be more at peace with their life situation and consider psychological growth less important to them at their life stage. Therefore, it was

hypothesized that age would be negatively correlated with stress-related growth. However, age was not significantly correlated with stress-related growth ($r = -.07$, $p = .192$) or with any of the outcome variables. It is important to note that overall, the sample in this study was relatively young ($M=36.80$, $SD=10.95$) with the youngest participant being 21 and the oldest 75.

Although not hypothesized, this study found interesting relationships between other demographic variables and well-being outcomes. Prognosis was found to be negatively correlated with meaning in life and benefit finding at the bivariate level but also in multiple regression analyses for meaning in life, where better prognosis predicted lower well-being. This is consistent with prior research that has found that cancer survivors undergoing bone marrow transplants who had poorer prognosis reported more positive outcomes than survivors with a better prognosis (Fromm et al., 1996). However, other findings have not supported that prognosis would predict positive outcomes pertaining to resilience or meaning in life, instead finding no relationship (Gotay, Isaacs, & Pagano, 2004). Gotay (1984) compared experiences of cancer among female patients of both early and advanced stages of breast and gynecological cancer and found that there were more similarities than differences in coping styles indicating prognosis and cancer stage was not predictive of adjustment post cancer. Future research is needed to further investigate these inconsistencies.

This current study found that being married or in a committed relationship was unrelated to all well-being outcomes except for life satisfaction where it was found to have a positive relationship. This is consistent with prior research that has found that married survivors have been found to report better physical function and better overall quality of life (Gotay et al., 2004). This current study also found that identifying as non-white was positively associated with meaning in life, benefit finding, and stress-related growth. This is also consistent with prior

research that has found that among men with prostate cancer and women with breast cancer, non-whites report higher positive changes than Caucasians (Penedo et al., 2006; Tomich & Helgeson, 2004). Other studies on people living with chronic illness have found a similar pattern, where Black people with HIV report higher rates of benefit finding compared to White people living with HIV (Littlewood et al., 2008; Siegel et al., 2005). A meta-analysis found that across all types of illness and traumatic events, benefit finding was more strongly related to better mental health when samples included a larger percentage of minority participants (Helgeson et al., 2006). Future research should take a closer look at relationships between various demographic variables and indicators of well-being to have a better understanding of the role these variables with play with post cancer adjustment.

Illness Centrality and Well-being

Illness centrality scores in this sample were high ($M = 4.05$, $SD = .74$), similar to past research (Helgeson, 2011). This study proposed illness centrality would be negatively correlated with two well-being outcomes: meaning in life and life satisfaction. The findings from this study do not support the idea that illness centrality among cancer survivors is adversely related to well-being, despite findings from previous research suggesting otherwise (Park et al., 2011; Helgeson, 2011). In this study, illness centrality and meaning were actually positively correlated ($r = .18$, $p = .001$). It is very likely that these unexpected results are a result of the measure used in this study to assess illness centrality. It has been suggested by prior researchers that illness centrality is made up of multiple states and therefore, measures should accurately distinguish between them (Oris et al., 2018). Measures of illness centrality that include scale items suggesting being dominated by the illness are more likely to result in adverse well-being outcomes. In contrast measures of illness centrality that include items suggesting accepting illness as a part of the self-

concept are more likely to result in positive well-being outcomes, which is most likely what transpired in this study. Prior research found that adults living with chronic illness who reported high levels of illness dominance or engulfment, reported more depressive and anxiety symptoms, while those who reported higher acceptance of the illness as a part of themselves, reported less depressive and anxiety symptoms (Oris et al, 2018).

Research on illness centrality among cancer survivors has found that those who report higher levels of centrality also report higher levels of growth or benefit finding (Helgeson 2011; Oris et al., 2018; Park et al., 2011). As hypothesized, illness centrality was positively related to benefit finding ($r = .36, p < .001$), even when controlling for other factors. Research studies suggesting that illness centrality is associated with benefit finding appear to be inconsistent with other results that indicate that illness centrality is adversely related to well-being. However, the experience of perceived positive changes as a result of stressful events does not necessarily occur without the experience of psychological distress. Continued confrontation with their illness may be both stressful and also indicative of incorporating the cancer experience in a way that has provided the opportunity to use that experience as means to personal growth (Helgeson, Reynolds, & Tomich, 2006; Park et al., 2008). Researchers have found that to enhance the self in the context of a stressor (i.e. illness), individuals initiate cognitive efforts, such as identifying benefits, which tend to be greater when stressors are perceived as more severe (Taylor & Brown, 1994).

Previous research findings suggest that individuals who have had cancer, often report experiencing positive changes after their experience (Sears et al., 2003; Stanton, 2006). Findings from this study confirm this, as the majority of participants reported high levels of stress-related growth ($M = 27.91$). Researchers have suggested that the impact of illness centrality on health

outcomes would depend on the individual's attitude toward the illness; that is, whether the individual perceives the illness in positive or negative terms (Wiebe et al., 2002). A previous study found that among children with diabetes, illness centrality was related to more depressive symptoms only when the illness was perceived in highly negative terms. Helgeson (2011), also found that among adult women who have had breast cancer, illness centrality was associated with higher negative affect and psychological distress if the women viewed the illness in more negative terms (Helgeson, 2011). As a result, this study sought to investigate if stress-related growth would moderate the relationship between illness centrality and well-being indicators among cancer survivors. As expected, stress-related growth moderated the relationship between illness centrality and meaning in life. Among those who reported negative stress-related changes, illness centrality was associated with lower meaning in life, and for those who reported positive stress-related changes, illness centrality was associated with higher meaning in life. Further analyses revealed that the effect between illness centrality and meaning in life was much stronger when there were positive reports of stress-related changes than when there were negative reports of stress-related changes. The positive relationship between illness and meaning was most pronounced in individuals who reported cancer as central to their identity and positive stress-related changes, as opposed to those who also reported high illness centrality but negative stress-related changes.

Also, as hypothesized, stress-related growth was found to moderate the relationship between illness centrality and life satisfaction. Analyses suggest that among those who reported negative stress-related changes, illness centrality was negatively associated with life satisfaction, as opposed to those who reported positive stress-related changes, illness centrality was positively associated with life satisfaction. Further slope analysis indicated that unlike meaning in life, the

association between illness centrality and life satisfaction was much stronger when there were negative reports of stress-related changes, than when there were positive reports of stress-related changes. Whereas individuals who reported high illness centrality and positive stress-related changes reported more life satisfaction, those who reported high illness centrality and negative stress-related changes reported significantly lower level of satisfaction.

These findings are important because they indicate that to better understand psychological difficulties related to coping and adjusting post cancer, knowing whether the illness was central to identity is only of partial importance. Having a better understanding of experienced positive and/or negative changes is critical to better understand the relationship between identifying strongly with cancer and well-being variables. For those that experienced higher stress-related growth, identifying with their illness was associated with higher meaning in life while but for those that reported lower stress-related growth, identifying with their illness was associated with lower life satisfaction. This is a new finding that will help cancer researchers have a more comprehensive understanding of the complexities related to cancer survivorship, identity integration, and post cancer adjustment.

Illness Identity Cancer Label and Well-Being

People who have had cancer appear to identify strongly with multiple labels relative to their experience (Belizzi & Blank, 2007, Park et al., 2009b). Most cancer survivors recognize different identities as part of their experience impacted by different aspects of their cancer experience. It is important to note that endorsement of cancer-related illness identity may vary depending on how cancer-related identities are measured. Some researchers ask participants to choose only one identity to describe themselves (Belizzi & Blank, 2007) or to rate the extent to which multiple cancer identities describe themselves (Park et al., 2009b). This current study

assessed illness identity labels by asking clients to both choose one identity and to rate the extent to which multiple cancer identities describe them on a Likert scale of 1 to 5. The Likert scale endorsements were cancer victim ($M = 2.01$, $SD = 1.28$), cancer patient ($M = 3.03$, $SD = 1.35$), someone who has had cancer ($M = 4.42$, $SD = .90$), and cancer survivor ($M = 4.43$, $SD = .99$). For the multiple choice item, the majority of participants were more likely to choose the “survivor” label ($n = 228$), followed by “person with cancer” ($n = 96$), while very few were likely to choose “cancer patient” ($n = 18$) and “victim of cancer” label ($n = 4$). Several studies have confirmed higher endorsements of the survivor identity (Belizzi & Blank, 2007; Diemling et al., 2007; Jagielski et al., 2012). The frequent use of survivor as an identity and less frequent use of patient and victim were similar to previous research (Belizzi & Blank, 2007; Diemling et al., 2007; Park et al., 2009b).

These cancer identities are complex and are associated with various domains of well-being (Diemling et al., 2007; Park et al., 2009b). More specifically, studies have indicated that those who identify as a cancer survivor report better psychological well-being than those who do not (Belizzi & Blank, 2007; Park et al., 2009a). This current study confirmed these findings. As hypothesized, the degree to which one identified with the cancer survivor label was significantly correlated with stress-related growth ($r = .38$, $p < .001$), meaning in life ($r = .24$, $p < .001$), life satisfaction ($r = .15$, $p = .005$), and benefit finding ($r = .38$, $p < .001$). Even when controlling for other significant demographic variables, identifying as a cancer survivor remained a significant unique positive predictor of all well-being outcomes.

To further examine the differences between the survivor label and other categories, a second set of regressions were conducted comparing the survivor label versus all other labels. These analyses were similar to the first set of regressions, with the exception of life satisfaction.

One-way ANOVAs were also conducted to examine mean differences across groups. Although the cancer survivor label was not statistically higher in all cases, the same general pattern of higher means for this label versus other cancer labels emerged.

Also noteworthy, was the fact that the other cancer labels were not predictive of outcomes in most cases. Life satisfaction was also the only outcome variable that was correlated with identifying as a cancer victim (Likert scale) ($r = -.22, p < .001$) and cancer patient (Likert scale) ($r = -.11, p = .049$). This negative association is in line with previous findings indicating that identifying as a cancer victim was adversely related with life satisfaction, positive affect, and mental health (Park et al., 2009b). The negative association for life satisfaction and cancer patient is reflective of one study that found this label related to higher levels of hostility and depression (Diemling et al., 2007), although another found it to be unrelated to well-being outcome variables (Park et al., 2009b). Identifying as someone who has had cancer (Likert scale) was unrelated to well-being outcomes in this study, which is similar to previous findings (Park et al., 2009b).

Besides cancer survivor, additional statistical analyses revealed cancer victim to be the only other label with predictive value. Even when controlling for demographic variables, it was significantly negatively associated with stress-related growth, meaning in life, and life satisfaction. However, it did not predict benefit finding. In line with previous research, people who see themselves as victims to illness are more likely to show poorer outcomes. The same predictive value was not found for cancer patient nor person who has cancer. This likely has to do with the rather benign nature of the label themselves. In contrast, “survivor” and “victim” mostly signify the manner in which people view their illness.

The increase of the use of the term cancer survivor is indicative of the improvements and advancements in the treatment of cancer in the last four decades, resulting in significant decreases in mortality among those diagnosed with cancer (Wronski, 2015). What was once considered an automatic death sentence is now considered something that can be beaten, and therefore survived. Despite differing attitudes towards the term itself (Cheung and Delfabbro, 2016), identifying as a cancer survivor suggests that although there are varying levels of distress that accompany the illness, there is possibility to overcome it and therefore outlive cancer (Mullan, 1985). Those that are more likely to identify as a cancer survivor may identify themselves with feelings associated with strength and resilience (Kaiser, 2008; Smith et al., 2016). Researchers have found that those diagnosed with cancer who were more likely to endorse positive labels, such as “survivor”, reported higher positive affect than those that did not (Belizzi & Blank, 2007). Those who identify as survivors have been found to take a more active approach to dealing with their illness, reducing anxiety and depression and improving self-esteem (Diemling et al., 2007). Endorsing cancer-related identities that have negative undertones have been found to negatively impact well-being among those who have had cancer (Park et al., 2009b). Identifying as a victim of cancer has been found to result in higher negative affect and lower levels of mental health (Park et al., 2009b). Identifying as a cancer patient has been found to result in higher levels of hostility and depression (Diemling et al., 2007). A possible reason for these negative relationships with well-being among endorsement of cancer victim and cancer patient label may be because it suggests that the person is experiencing negative impacts from their cancer and possible worry about their future. Researchers have found that identifying as a cancer victim or cancer patient was shown to be associated with fears of their cancer returning

(Park et al., 2009b). Identifying as someone who has had cancer is considered a more neutral term and has not been found to be related to well-being outcomes.

Limitations and Strengths

Despite several important findings, it is important to consider the limitations of this study. This study was based on self-reported measures, which could increase the possibility of participants' inflating reports of well-being. Research has found that people that have gone through distressing events may be inclined to report being better off than they really are in order to relieve their own distress (Taylor et al., 2000; Taylor & Brown, 1994). Due to the nature of their illness, cancer survivors may be motivated to find meaning in their life and to report "having grown" from difficult life experiences (Salsman et al., 2014). Research has found that people tend to inaccurately recall personal change retrospectively, leading researchers to question whether measures of growth and related constructs accurately capture results (Frazier et al., 2009).

Second, the sample in this study was predominantly female. Also, nearly half of the sample were breast cancer survivors, and thus the features of that population may have driven some of the results, as prior research suggests that women diagnosed with breast cancer report high positive changes (Helgeson, 2011) and greater benefits (Tomich & Helgeson, 2002). While a sample that has experienced various types of cancer has merit in investigating general concepts, it limits generalization of these findings to any specific cancer type. This study was also a cross-sectional study making it difficult to determine cause and effect. For example, this study assumes that illness centrality determines well-being outcomes, however it is also possible that cancer survivors' well-being influences the extent to which they identify with their illness.

The last limitation pertains to two measures used in this study. The first is the illness identity measure that asked participants to indicate the degree to which they identified with each of the four cancer labels (victim of cancer, cancer patient, a person who has had cancer, cancer survivor) on 1 (not at all) to 5 (very much) Likert scale, as done in previous research (Park et al., 2009). Although this allowed endorsement of multiple identities at the same time, it did not allow for clean comparisons across the respective identities, given that the groups are not mutually exclusive. However, because of this, participants were also asked to endorse only one cancer identity in a multiple-choice question. In measuring illness centrality, researchers have recommended using a better validated measure than what has been used in prior studies (Park et al., 2011) as illness centrality has often been assessed only by using a single-item measure. This current study attempted to overcome this limitation by using The Centrality of Events Scale (CES), a 20- item measure that has demonstrated high reliability among various samples (Ogle, Rubin, & Siegler, 2014) as it did with this current study ($\alpha = .93$). Despite being an improved measure of illness centrality, the CES did not fully capture the intended construct for this current study. Researchers have identified that there are multiple states that comprise illness centrality: engulfment, rejection, acceptance, and enrichment (Morea, 2008; Oris et al., 2018). Future researchers may benefit from using measures that explicitly distinguish these states in order to fully understand the complexities related to illness centrality (Oris et al., 2018).

Despite these limitations, one strength of this study is that it considered critiques from past researchers regarding measures of posttraumatic growth. The ability to accurately measure perceived positive and negative changes is crucial to furthering our understanding of the consequences of stressful experiences. However, researchers have criticized commonly used measures of stress-related growth (ex: PTGI, SRGS) due to the wording of questions influencing

illusory reports of growth since these measures only allow reports ranging from “no change” to “a great deal of positive change”, thus discounting the possibility of any negative changes (Boals & Schuler, 2017). A strength of this present study is that it used the modified and improved version of the SRGS (SRGS-R), a measure that allows participants to report positive, negative, and no change at all, therefore providing a more accurate assessment of individual’s adjustment post cancer.

This study has added to the limited research pertaining to illness centrality specifically among cancer survivors in several ways. This is the first study that has explored the relationships of both the identity label endorsed by cancer survivors and illness centrality among participants and distinguishing how each is associated with well-being. This study supports the hypothesis that identifying as a cancer survivor is associated with higher levels well-being. However, what makes this study really interesting is the results suggesting that the experience of stress-related positive and negative changes significantly affects the relationship between illness centrality and well-being. Therefore, it is not sufficient to know whether a cancer survivor defines him or herself in terms of their illness to indicate problems related to coping with their illness or adjusting after their diagnosis and treatment. Having a better understanding of the degree to which cancer survivors perceive to have experienced positive and/or negative changes as a result of their illness can better illustrate the relationship between strongly identifying with their illness and indicators of well-being. Further research is needed to expand on these findings, particularly to other well-being variables.

Future Research

Because of some disparities between prior research (Helgeson, 2011) and this current study, future research on understanding who is more likely to define themselves in terms of their

illness is needed, particularly related to those with a higher cancer stage and/or worse prognosis. Considering the distinct ways young adult cancer survivors are impacted from their illness, it is necessary to further understand how this affects their psychological well-being, despite the fact that in this study, age was not predictive of well-being. In future research examining the relationship between cancer-related identities and well-being, it would be beneficial for researchers to utilize various ways of measuring endorsement of the “survivor” label in order to fully understand the intended construct.

Results from this study suggest that in order to fully understand the relationship between illness centrality and well-being, it is important to know how people perceive their cancer experience, specifically pertaining to the experience of positive and negative changes. Since illness centrality among cancer survivors has been understudied among researchers, future research is needed in this area, as well as examining whether survivorship is generally viewed in positive or negative terms. In addition, further studies on illness centrality among cancer survivors should assess centrality at multiple time points, ideally from diagnosis, through treatment, and into long-term survivorship. It would be useful to examine the extent to which illness centrality changes over time and how that may impact psychological well-being.

Implications for mental health counselors

The findings from this research have several implications for mental health professionals who see cancer survivors over the course of treatment and survivorship. Counselors working with cancer survivors should have knowledge on identity theory and how having an illness affects identity. Although many people who have had cancer are likely to identify as a “cancer survivor”, professionals working with this population should be aware that this term may not resonate with every individual’s experience. Research has identified that labeling a population

with a term that may be offensive to some should be avoided. Ideally, it is best practice to let the individual experience of the person who has been diagnosed determine what label they feel comfortable with. Finding out which label is most comfortable or meaningful for a particular client can help in tailoring practice in a patient-centered way and enables clients to integrate their cancer experience into a much broader context of their life most effectively.

Mental health counselors should also be aware of the extent to which those who have had cancer integrate the illness into their sense of self. Knowing whether cancer survivors integrate their illness into their identity or maintain it as separate from themselves only partially describes their adjustment after their illness. Those that strongly identify with their illness and perceive to have experienced negative changes resulting from their illness may be at greater risk for psychological distress. Therefore, when cancer treatment is terminated, health care professionals should explore the nature of the individual's multifaceted cancer experience, specifically the perception of stress-related positive and negative changes. Having this understanding will benefit designing effective, patient-centered programs that acknowledge diverse experiences and lead to better post-cancer adjustment. Developing interventions to help cancer survivors who may be struggling emotionally reframe their cancer experience may help achieve better post-cancer adjustment.

In addition, counselors should be cognizant of the potential impact age has on the well-being of cancer survivors. Despite some of the null findings pertaining to age and well-being in this study, research has found that some of the primary concerns of young adult cancer survivors include decreased autonomy and self-esteem (Zebrack, 2011) and worries related to family planning (Quinn et al., 2015), and their cancer returning (Simard et al., 2013). In order to appropriately address the impact experienced by young cancer survivors, counselors should

familiarize themselves with these main areas and know how this will determine how to best integrate strategies to engage and support young survivors in clinical practice.

References

- Adams, S., Pill, R., & Jones, A. (1997). Medication, chronic illness and identity: The perspective of people with asthma. *Social Science & Medicine*, 45(2), 189–201. [https://doi-org.rlib.pace.edu/10.1016/S0277-9536\(96\)00333-4](https://doi-org.rlib.pace.edu/10.1016/S0277-9536(96)00333-4)
- Allen, R. K., & Roberto, A.K. (2013). Older Women in Appalachia: Experiences with Gynecological Cancer. *The Gerontologist*, 54(6), 1024-1034
- Arden-Close, E., Gidron, Y., & Moss-Morris, R. (2008). Psychological distress and its correlates in ovarian cancer: A systematic review. *Psycho-Oncology*, 17(11), 1061–1072. <https://doi-org.rlib.pace.edu/10.1002/pon.1363>
- Arpawong, T. E., Oland, A., Milam, J. E., Ruccione, K., & Meeske, K. A. (2013). Post - traumatic growth among an ethnically diverse sample of adolescent and young adult cancer survivors. *Psycho-Oncology*, 22(10), 2235-2244. Retrieved from <http://rlib.pace.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2013-35253-013&login.asp&site=ehost-live&scope=site>
- Bann, C. M., Treiman, K., Squiers, L., Tzeng, J., Nutt, S., Arvey, S., & ... Rechis, R. (2015). Cancer Survivors' Use of Fertility Preservation. *Journal Of Women's Health* (15409996), 24(12), 1030-1037. doi:10.1089/jwh.2014.5160
- Baumeister, R. F. (1991). *Meanings of Life*. Guilford Press
- Beanlands, H. J., (2001). Engulfment among adults with chronic renal disease, a study of self-loss and its correlates. *National Library of Canada*
- Beanlands, H. J., Lipton, J. H., McCay, E. A., Schimmer, A. D., Elliott, M. E., Messner, H. A., & Devins, G. M. (2003). Self-concept as a 'BMT patient', illness intrusiveness, and

- engulfment in allogeneic bone marrow transplant recipients. *Journal of Psychosomatic Research*, 55(5), 419–425. [https://doi-org.rlib.pace.edu/10.1016/S0022-3999\(03\)00509-9](https://doi-org.rlib.pace.edu/10.1016/S0022-3999(03)00509-9)
- Bell, K., & Ristovski-Slijepcevic, S. (2013). Cancer survivorship: why labels matter. *J Clin Oncol*, 31(4), 409-411. doi:10.1200/jco.2012.43.5891
- Bellizzi, K. M. (2004). Expressions of generativity and posttraumatic growth in adult cancer survivors. *The International Journal of Aging & Human Development*, 58(4), 267–287. <https://doi-org.rlib.pace.edu/10.2190/DC07-CPVW-4UVE-5GK0>
- Bellizzi, K. M., & Blank, T. O. (2007). Cancer-related identity and positive affect in survivors of prostate cancer. *J Cancer Surviv*, 1(1), 44-48. doi:10.1007/s11764-007-0005-2
- Bellizzi, K. M., Miller, M. F., Arora, N. K., & Rowland, J. H. (2007). Positive and negative life changes experienced by survivors of non-Hodgkin's Lymphoma. *Annals of Behavioral Medicine*, 34(2), 188–199. <https://doi-org.rlib.pace.edu/10.1007/BF02872673>
- Behr, S. K., Murphy, D. L., & Summers, J. A. (1991). User's manual: Kansas Inventory of Parental Perceptions. University of Kansas.
- Berntsen, D., & Rubin, D. C. (2006). The centrality of event scale: A measure of integrating a trauma into one's identity and its relation to post-traumatic stress disorder symptoms. *Behaviour Research And Therapy*, 44(2), 219-231. doi:10.1016/j.brat.2005.01.009
- Boals, A., & Schuler, K. L. (2018). Reducing reports of illusory posttraumatic growth: A revised version of the Stress-Related Growth Scale (SRGS-R). *Psychological Trauma: Theory, Research, Practice, And Policy*, 10(2), 190-198. doi:10.1037/tra0000267
- Boals, A., & Schuler, K. (2018)b. Shattered cell phones, but not shattered lives: A comparison of reports of illusory posttraumatic growth on the Posttraumatic Growth Inventory and the

- Stress-Related Growth Scale—Revised. *Psychological Trauma: Theory, Research, Practice, and Policy*. <https://doi-org.rlib.pace.edu/10.1037/tra0000390>
- Boonstra, A. M., Reneman, M. F., Stewart, R. E., Post, M. W., & Preuper, H. S. (2013). Life satisfaction in patients with chronic musculoskeletal pain and its predictors. *Quality Of Life Research: An International Journal Of Quality Of Life Aspects Of Treatment, Care & Rehabilitation*, 22(1), 93-101. doi:10.1007/s11136-012-0132-8
- Calhoun & Tedeschi (1998) Calhoun LG, Tedeschi RG. Posttraumatic growth: future directions. In: Tedeschi RG, Park CL, Calhoun LG, editors. Posttraumatic growth: positive changes in the aftermath of crisis. Mahwah, NJ: Lawrence Erlbaum Associates; 1998. pp. 215–238.
- Cancer Fact Sheet. (2018, September). Retrieved July 13, 2019, from <http://www.who.int/mediacentre/factsheets/fs297/en/>
- Carpenter, J.S., Brockopp, D.Y., Andrykowski, M.A. (1998). Self - transformation as a factor in the self-esteem and well-being of breast cancer survivors. *Journal of Advanced Nursing*, 29 (6), 1402-1411.
- Charmaz, K. (1995). The Body, Identity, and Self: Adapting To Impairment. *The Sociological Quarterly*, 36(4), 657-680. DOI: [10.1111/j.1533-8525.1995.tb00459.x](https://doi.org/10.1111/j.1533-8525.1995.tb00459.x)
- Cheung, S. Y., & Delfabbro, P. (2016). Are you a cancer survivor? A review on cancer identity. *Journal of Cancer Survivorship*, 10(4), 759-771. doi:10.1007/s11764-016-0521-z
- Cho, D., & Park, C. L. (2015). Cancer-related identities in people diagnosed during late adolescence and young adulthood. *British Journal of Health Psychology*, 20(3), 594-612. doi:10.1111/bjhp.12110

- Costanzo, E. S., Ryff, C. D., & Singer, B. H. (2009). Psychosocial adjustment among cancer survivors: Findings from a national survey of health and well-being. *Health Psychology, 28*(2), 147–156. <https://doi-org.rlib.pace.edu/10.1037/a0013221>
- Crist, J. V., & Grunfeld, E. A. (2013). Factors reported to influence fear of recurrence in cancer patients: a systematic review. *Psycho-Oncology, 22*(5), 978–986. doi:10.1002/pon.3114
- Cormio, C., Romito, F., Giotta, F., & Mattioli, V. (2015). Post- traumatic growth in the Italian experience of long- term disease- free cancer survivors. *Stress and Health: Journal of the International Society for the Investigation of Stress, 31*(3), 189–196. <https://doi-org.rlib.pace.edu/10.1002/smi.2545>
- Curbow, B., Somerfield, M. R., Baker, F., Wingard, J. R., & Legro, M. W. (1993). Personal changes, dispositional optimism, and psychological adjustment to bone marrow transplantation. *Journal of Behavioral Medicine, 16*(5), 423–443. <https://doi-org.rlib.pace.edu/10.1007/BF00844815>
- Deimling, G., F Bowman, K., & J Wagner, L. (2007). *Cancer Survivorship and Identity among Long-Term Survivors* (Vol. 25).
- Deiner, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542-575.
- Deiner, E., Emmons, R.A., Larsen, R.J. & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment, 49*, 71-75.
- Dyer, K. E. (2015). 'Surviving is not the same as living': Cancer and Sobrevivencia in Puerto Rico. *Social Science & Medicine, 132*, 20-29. doi:10.1016/j.socscimed.2015.02.033
- Eve, P., & Kangas, M. (2015). Posttraumatic growth following trauma: Is growth accelerated or a reflection of cognitive maturation? *The Humanistic Psychologist, 43*(4), 354–370. <https://doi-org.rlib.pace.edu/10.1080/08873267.2015.1025272>

- Evers, A. M., Kraaimaat, F. W., van Lankveld, W., Jongen, P. H., Jacobs, J. G., & Bijlsma, J. J. (2001). Beyond unfavorable thinking: The Illness Cognition Questionnaire for chronic diseases. *Journal Of Consulting And Clinical Psychology*, 69(6), 1026-1036. doi:10.1037/0022-006X.69.6.1026
- Feller, S., Teucher, B., Kaaks, R., Boeing, H., & Vigl, M. (2013). Life satisfaction and risk of chronic diseases in the European Prospective Investigation into Cancer and Nutrition (EPIC)-Germany study. *Plos ONE*, 8(8), doi:10.1371/journal.pone.0073462
- Fife, B. L., & Wright, E. R. (2000). The dimensionality of stigma: A comparison of its impact on the self of persons with HIV/AIDS and cancer. *Journal of Health and Social Behavior*, 41(1), 50-67. doi:10.2307/2676360
- Fleer, J., Hoekstra, H. J., Sleijfer, D. T., Tuinman, M. A., & Hoekstra-Weebers, J. E. H. M. (2006). The role of meaning in the prediction of psychosocial well-being of testicular cancer survivors. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation*, 15(4), 705–717. <https://doi-org.rlib.pace.edu/10.1007/s11136-005-3569-1>
- Fobair, P., Stewart, S. L., Chang, S., D’Onofrio, C., Banks, P. J., & Bloom, J. R. (2006). Body image and sexual problems in young women with breast cancer. *Psycho-Oncology*, 15(7), 579–594. <https://doi-org.rlib.pace.edu/10.1002/pon.991>
- Frazier, P., Tennen, H., Gavian, M., Park, C., Tomich, P., & Tashiro, T. (2009). Does self-reported posttraumatic growth reflect genuine positive change? *Psychological Science*, 20(7), 912-919. doi:10.1111/j.1467-9280.2009.02381.x

- Fromm, K., Andrykowski, M. A., & Hunt, J. (1996). Positive and negative psychosocial sequelae of bone marrow transplantation: Implications for quality of life assessment. *Journal of Behavioral Medicine*, 19(3), 221–240. <https://doi-org.rlib.pace.edu/10.1007/BF01857767>
- Fugl-Meyer, K.S. (2016). A medical social work perspective on rehabilitation. *Journal of Rehabilitation Medicine*, 48, 758-763
- George, L. S., & Park, C. L. (2017). Does spirituality confer meaning in life among heart failure patients and cancer survivors?. *Psychology Of Religion And Spirituality*, 9(1), 131-136. doi:10.1037/rel0000103
- Gillies, J., & Neimeyer, R. A. (2006). Loss, grief, and the search for significance: Toward a model of meaning reconstruction in bereavement. *Journal Of Constructivist Psychology*, 19(1), 31-65. doi:10.1080/10720530500311182
- Gotay, C. C. (1984). The experience of cancer during early and advanced stages: The views of patients and their mates. *Social Science & Medicine*, 18(7), 605–613. [https://doi-org.rlib.pace.edu/10.1016/0277-9536\(84\)90076-5](https://doi-org.rlib.pace.edu/10.1016/0277-9536(84)90076-5)
- Gotay, C. C., Isaacs, P., & Pagano, I. (2004). Quality of Life in Patients Who Survive a Dire Prognosis Compared to Control Cancer Survivors. *Psycho-Oncology*, 13(12), 882–892. <https://doi-org.rlib.pace.edu/10.1002/pon.808>
- Green, C. A., & Pope, C. R. (1999). Gender, psychosocial factors and the use of medical services: A longitudinal analysis. *Social Science and Medicine*, 48, 1363–1372.
- Helgeson, V. S. (2010). Corroboration of growth following breast cancer: Ten years later. *Journal of Social and Clinical Psychology*, 29(5), 546–574. <https://doi-org.rlib.pace.edu/10.1521/jscp.2010.29.5.546>

- Helgeson, V. S. (2011). Survivor centrality among breast cancer survivors: Implications for well-being. *Psycho-Oncology*, 20(5), 517-524. doi:10.1002/pon.1750
- Helgeson, V. S., & Novak, S. A. (2007). Illness centrality and well-being among male and female early adolescents with diabetes. *Journal of Pediatric Psychology*, 32(3), 260–272. <https://doi-org.rlib.pace.edu/10.1093/jpepsy/jsl018>
- Helgeson, V. S., Reynolds, K. A., & Tomich, P. L. (2006). A meta-analytic review of benefit finding and growth. *Journal of Consulting and Clinical Psychology*, 74(5), 797–816. <https://doi-org.rlib.pace.edu/10.1037/0022-006X.74.5.797>
- Henderson, P. A. (1997). Psychosocial adjustment for adult cancer survivors: Their needs and counselor interventions. *Journal Of Counseling & Development*, 75(3), 188-194. doi:10.1002/j.1556-6676.1997.tb02332.x
- Holland, J. C. (2002). History of psycho-oncology: Overcoming attitudinal and conceptual barriers. *Psychosomatic Medicine*, 64(2), 206-221. doi:10.1097/00006842-200203000-00004
- Jagielski, C. H., Hawley, S. T., Corbin, K., Weiss, M. C., & Griggs, J. J. (2012). A phoenix rising: Who considers herself a 'survivor' after a diagnosis of breast cancer? *Journal of Cancer Survivorship*, 6(4), 451-457. doi:10.1007/s11764-012-0240-z
- Jim, H. S., Richardson, S. A., Golden-Kreutz, D. M., & Andersen, B. L. (2006). Strategies Used in Coping With a Cancer Diagnosis Predict Meaning in Life for Survivors. *Health Psychology : Official Journal of the Division of Health Psychology, American Psychological Association*, 25(6), 753–761. <http://doi.org.rlib.pace.edu/10.1037/0278-6133.25.6.753>

- Jones, E. E., Farina, A., Hastorf, A. H., Markus, H., Miller, D. T., & Scott, R. A. (1984). *Social stigma: The psychology of marked relationships*. New York: W.H. Freeman.
- Kaiser, K. (2008). The meaning of the survivor identity for women with breast cancer. *Social Science & Medicine*, 67(1), 79-87. doi:10.1016/j.socscimed.2008.03.036
- Kandrack, M.A., Grant, K. R., & Segall, A. (1991). Gender differences in health related behavior: Some unanswered questions. *Social Science & Medicine*, 32, 579–590.
- Khan, N. F., Harrison, S., Rose, P. W., Ward, A., & Evans, J. (2012)a. Interpretation and acceptance of the term 'cancer survivor': A United Kingdom-based qualitative study. *European Journal of Cancer Care*, 21(2), 177-186. doi:10.1111/j.1365-2354.2011.01277.x
- Khan, N. F., Rose, P. W., & Evans, J. (2012)b. Defining cancer survivorship: A more transparent approach is needed. *Journal of Cancer Survivorship*, 6(1), 33-36. doi:10.1007/s11764-011-0194-6
- Kirchhoff, A. C., Yi, J., Wright, J., Warner, E. L., & Smith, K. R. (2012) Marriage and divorce among young adult cancer survivors. *Journal of Cancer Survivorship*, 6, 441-450. doi:10.1007/s11764-012-0238-6
- Klauer, T., Ferring, D., & Filipp, S.-H. (1998). “Still stable after all this...?": Temporal comparison in coping with severe and chronic disease. *International Journal of Behavioral Development*, 22(2), 339–355. <https://doi-org.rlib.pace.edu/10.1080/016502598384405>
- Kumar, A. R., & Schapira, L. (2013). The impact of intrapersonal, interpersonal, and community factors on the identity formation of young adults with cancer: A qualitative study. *Psycho-Oncology*, 22(8), 1753-1758. doi:10.1002/pon.3207

- Lechner, S. C., Zakowski, S. G., Antoni, M. H., Greenhawt, M., Block, K., & Block, P. (2003). Do sociodemographic and disease-related variables influence benefit-finding in cancer patients? *Psycho-Oncology*, 12(5), 491–499. <https://doi-org.rlib.pace.edu/10.1002/pon.671>
- Leigh, S. (2007). Cancer survivorship: A nursing perspective. In P. A. Ganz (Ed.), *Cancer survivorship: Today and tomorrow*. (pp. 8–13). New York, NY: Springer Science + Business Media. [https://doi-org.rlib.pace.edu/10.1007/978-0-387-68265-5pass:\[_\]2](https://doi-org.rlib.pace.edu/10.1007/978-0-387-68265-5pass:[_]2)
- LeMasters, T., Madhavan, S., Sambamoorthi, U., & Kurian, S. (2013). A population - based study comparing HRQoL among breast, prostate, and colorectal cancer survivors to propensity score matched controls, by cancer type, and gender. *Psycho-Oncology*, 22(10), 2270–2282. Retrieved from <http://rlib.pace.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2013-35253-017&site=ehost-live&scope=site>
- Little, M., Paul, K., Jordens, C. F. C., & Sayers, E.J. (2002). Survivorship and discourses of identity. *Psycho-Oncology*, 11(2), 170-178. doi:10.1002/pon.549
- Littlewood, R. A., Vanable, P. A., Carey, M. P., & Blair, D. C. (2008). The association of benefit finding to psychosocial and health behavior adaptation among HIV+ men and women. *Journal of Behavioral Medicine*, 31(2), 145–155. <https://doi-org.rlib.pace.edu/10.1007/s10865-007-9142-3>
- Luyckx, K., Rassart, J., & Weets, I. (2015). Illness self-concept in Type 1 diabetes: A cross-sectional view on clinical, demographic, and psychosocial correlates. *Psychology, Health & Medicine*, 20(1), 77–86. <https://doi-org.rlib.pace.edu/10.1080/13548506.2014.902482>

- Maercker, A., Zoellner, T., (2004). The Janus Face of Self-Perceived Growth: Toward a Two-Component Model of Posttraumatic Growth. *Psychological Inquiry*, 15(1), 41-48
- Marcus, A. (2004). Debate heats up on defining a cancer survivor. *Wall Street Journal*, D4.
- McGrath, P., & Holewa, H. (2012). What does the term 'survivor' mean to individuals diagnosed with a haematological malignancy? Findings from Australia. *Support Care Cancer*, 20(12), 3287-3295. doi:10.1007/s00520-012-1453-4
- McFarland, C., & Alvaro, C. (2000). The impact of motivation on temporal comparisons: Coping with traumatic events by perceiving personal growth. *Journal of Personality and Social Psychology*, 79(3), 327–343. <https://doi-org.rlib.pace.edu/10.1037/0022-3514.79.3.327>
- Mehnert, A., de Boer, A., & Feuerstein, M. (2013). Employment challenges for cancer survivors. *Cancer*, 119(11, Suppl), 2151-2159. doi:10.1002/cncr.28067
- Miller, L. E. (2015). 'People don't understand that it is not easy being a cancer survivor': Communicating and negotiating identity throughout cancer survivorship. *Southern Communication Journal*, 80(1), 1-19. doi:10.1080/1041794X.2014.936971
- Morea, J. M., Friend, R., & Bennett, R. M. (2008). Conceptualizing and measuring illness self-concept: A comparison with self-esteem and optimism in predicting fibromyalgia adjustment. *Research in Nursing & Health*, 31(6), 563–575. <https://doi-org.rlib.pace.edu/10.1002/nur.20294>
- Morgan, M. A. (2009). Cancer survivorship: History, quality-of-life issues, and the evolving multidisciplinary approach to implementation of cancer survivorship care plans. *Oncology Nursing Forum*, 36(4), 429-436. doi:10.1188/09.ONF.429-436
- Mullan, F. (1985). Seasons of survival: Reflections of a physician with cancer. . *The New England Journal of Medicine* , 313, 270-273.

- Ogle, C. M., Rubin, D. C., & Siegler, I. C. (2014). Cumulative exposure to traumatic events in older adults. *Aging & Mental Health*, 18(3), 316–325. <https://doi-org.rlib.pace.edu/10.1080/13607863.2013.832730>
- O'Hea, E. L., Monahan, B. R., Cutillo, A., Person, S. D., Grissom, G., & Boudreaux, E. D. (2016). Predictors of psychological distress and interest in mental health services in individuals with cancer. *Journal Of Health Psychology*, 21(6), 1145-1156. doi:10.1177/1359105314547752
- Olsson, M., Nilsson, M., Fugl-Meyer, K., Petersson, L., Wennman-Larsen, A., Kjeldgård, L., & Alexanderson, K. (2017). Life satisfaction of women of working age shortly after breast cancer surgery. *Quality Of Life Research: An International Journal Of Quality Of Life Aspects Of Treatment, Care & Rehabilitation*, 26(3), 673-684. doi:10.1007/s11136-016-1479-z
- Oris, L., Luyckx, K., Rassart, J., Goubert, L., Goossens, E., Apers, S., ... Moons, P. (2018). Illness identity in adults with a chronic illness. *Journal of Clinical Psychology in Medical Settings*, 25(4), 429–440. <https://doi-org.rlib.pace.edu/10.1007/s10880-018-9552-0>
- Park, C. L. (2010). Making Sense of the Meaning Literature: An Integrative Review of Meaning Making and Its Effects on Adjustment to Stressful Life Events. *Psychological Bulletin*, 136(2), 257-301. doi:10.1037/a0018301
- Park, C. L., Bharadwaj, A. K., & Blank, T. O. (2011). Illness centrality, disclosure, and well-being in younger and middle-aged adult cancer survivors. *British Journal Of Health Psychology*, 16(4), 880-889. doi:10.1111/j.2044-8287.2011.02024.x

- Park, C. L., & Blank, T. O. (2012). Associations of positive and negative life changes with well-being in young and middle-aged adult cancer survivors. *Psychology & Health*, 27(4), 412–429. <https://doi-org.rlib.pace.edu/10.1080/08870446.2011.586033>
- Park, C. L., Cohen, L. H., & Murch, R. L. (1996). Assessment and prediction of stress-related growth. *Journal of Personality*, 64(1), 71–105. <https://doi-org.rlib.pace.edu/10.1111/j.1467-6494.1996.tb00815.x>
- Park, C. L., Edmondson, D., Fenster, J. R., & Blank, T. O. (2008). Meaning Making and Psychological Adjustment Following Cancer: The Mediating Roles of Growth, Life Meaning, and Restored Just-World Beliefs. *Journal Of Consulting & Clinical Psychology*, 76(5), 863-875. doi:10.1037/a0013348
- Park, C.L., & Folkman, S. (1997). Meaning in the Context of Stress and Coping. *Review of General Psychology*, 1(2), 115-144.
- Park, C. L., & Gutierrez, I. A. (2013). Global and situational meanings in the context of trauma: Relations with psychological well-being. *Counseling Psychology Quarterly*, 26(1), 8-25. doi:10.1080/09515070.2012.727547
- Park, C. L., Lechner, S. C., Antoni, M. H., & Stanton, A. L. (2009)a. *Medical illness and positive life change: Can crisis lead to personal transformation?* (C. L. Park, S. C. Lechner, M. H. Antoni, & A. L. Stanton, Eds.). Washington, DC: American Psychological Association. <https://doi-org.rlib.pace.edu/10.1037/11854-000>
- Park, C.L., Wortmann, J. H., Hale, A. E., Cho, D., & Blank, T. O. (2014). Assessing quality of life in young adult cancer survivors: Development of the Survivorship-Related Quality of Life Scale. *Quality Of Life Research: An International Journal Of Quality Of Life*

- Aspects Of Treatment, Care & Rehabilitation*, 23(8), 2213-2224. doi:10.1007/s11136-014-0682-z
- Park, C. L., Zlateva, I., & Blank, T. O. (2009)b. Self-identity after cancer: 'survivor', 'victim', 'patient', and 'person with cancer'. *Journal of General Internal Medicine*, 24(Suppl 2), S430-S435. doi:10.1007/s11606-009-0993-x
- Pavot, W. G., Diener, E., Colvin, C. R., & Sandvik, E. (1991). Further validation of the Satisfaction With Life Scale: Evidence for the cross-method convergence of well-being measures. *Journal Of Personality Assessment*, 57(1), 149-161. doi:10.1207/s15327752jpa5701_17
- Penedo, F. J., Molton, I., Dahn, J. R., Shen, B.-J., Kinsinger, D., Traeger, L., ... Antoni, M. (2006). A Randomized Clinical Trial of Group-Based Cognitive-Behavioral Stress Management in Localized Prostate Cancer: Development of Stress Management Skills Improves Quality of Life and Benefit Finding. *Annals of Behavioral Medicine*, 31(3), 261–270. https://doi-org.rlib.pace.edu/10.1207/s15324796abm3103_8
- Pieters, H. C., & Heilemann, M. V. (2011). " Once You're 82 Going on 83, Surviving Has a Different Meaning": Older Breast Cancer Survivors Reflect on Cancer Survivorship. *Cancer nursing*, 34(2), 124-133.
- Poort, H., Kaal, S., Knoop, H., Jansen, R., Prins, J., Manten-Horst, E., & ... van der Graaf, W. A. (2017). Prevalence and impact of severe fatigue in adolescent and young adult cancer patients in comparison with population-based controls. *Supportive Care In Cancer*, 25(9), 2911-2918. doi:10.1007/s00520-017-3746-0
- Quinn, D. M., & Chaudoir, S. R. (2009). Living with a concealable stigmatized identity: The impact of anticipated stigma, centrality, salience, and cultural stigma on psychological

- distress and health. *Stigma and Health*, 1(S), 35–59. <https://doi-org.rlib.pace.edu/10.1037/2376-6972.1.S.35>
- Quinn, G. P., Gonçalves, V., Sehovic, I., Bowman, M. L., & Reed, D. R. (2015). Quality of life in adolescent and young adult cancer patients: a systematic review of the literature. *Patient Related Outcome Measures*, 6, 19-51
- Report of the Adolescent and Young Adult Oncology Progress Review Group. (2006, August). Retrieved December 19, 2017, from <https://www.cancer.gov/types/aya/research/ayao-august-2006.pdf>
- Rowland, J. H. (1989). Psychological factors and adaptation. In J. C. Holland & J. H. Rowland (Eds.), *Handbook of psychooncology: Psychological care of the patient with cancer*. (pp. 23–71). New York, NY: Oxford University Press. Retrieved from <http://search.ebscohost.com.rlib.pace.edu/login.aspx?direct=true&db=psych&AN=1989-98449-002&login.asp&site=ehost-live&scope=site>
- Ryan, H., Schofield, P., Cockburn, J., Butow, P., Tattersall, M., Turner, J., & ... Bowman, D. (2005). How to recognize and manage psychological distress in cancer patients. *European Journal Of Cancer Care*, 14(1), 7-15. doi:10.1111/j.1365-2354.2005.00482.x
- Sabanciogullari, S., Tuncay, F. O., & Avci, D. (2016). The relationship between life satisfaction and perceived health and sexuality in individuals diagnosed with a physical illness. *Sexuality And Disability*, 34(4), 389-402. doi:10.1007/s11195-016-9456-6
- Salsman, J. M., Garcia, S. F., Yanez, B., Sanford, S. D., Snyder, M. A., & Victorson, D. (2014). Physical, emotional, and social health differences between posttreatment young adults with cancer and matched healthy controls. *Cancer*, 120(15), 2247-2254.

- Scheffold, K., Mehnert, A., Müller, V., Koch, U., Härter, M., & Vehling, S. (2014). Sources of meaning in cancer patients—Influences on global meaning, anxiety and depression in a longitudinal study. *European Journal of Cancer Care*, 23(4), 472–480. <https://doi-org.rlib.pace.edu/10.1111/ecc.12152>
- Scherman, A. Z., Salgado, S., Shao, Z., & Berntsen, D. (2015). Event centrality of positive and negative autobiographical memories to identity and life story across cultures. *Memory*, 23(8), 1152–1171. <https://doi-org.rlib.pace.edu/10.1080/09658211.2014.962997>
- Schulenberg, S. E., Strack, K. M., & Buchanan, E. M. (2011). The Meaning in Life Questionnaire: Psychometric properties with individuals with serious mental illness in an inpatient setting. *Journal of Clinical Psychology*, 67(12), 1210–1219. <https://doi-org.rlib.pace.edu/10.1002/jclp.20841>
- Sears, S. R., Stanton, A. L., & Danoff-Burg, S. (2003). The yellow brick road and the emerald city: Benefit finding, positive reappraisal coping and posttraumatic growth in women with early-stage breast cancer. *Health Psychology*, 22(5), 487–497. <https://doi-org.rlib.pace.edu/10.1037/0278-6133.22.5.487>
- Seitz, D. C. M., Hagmann, D., Besier, T., Dieluweit, U., Debatin, K.-M., Grabow, D., ... Goldbeck, L. (2011). Life satisfaction in adult survivors of cancer during adolescence: What contributes to the latter satisfaction with life? *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation*, 20(2), 225–236. <https://doi-org.rlib.pace.edu/10.1007/s11136-010-9739-9>
- Shin, D. C., & Johnson, D.M. (1978). Avowed happiness as an overall assessment of the quality of life. *Social Indicators Research*, 5, 475- 492.

- Siegel, K., Schrimshaw, E. W., & Pretter, S. (2005). Stress-related growth among women living with HIV/AIDS: Examination of an explanatory model¹. *Journal of Behavioral Medicine*, 28(5), 403–414. <https://doi-org.rlib.pace.edu/10.1007/s10865-005-9015-6>
- Sim, B. Y., Lee, Y. W., Kim, H., & Kim, S. H. (2015). Post-traumatic growth in stomach cancer survivors: Prevalence, correlates and relationship with health-related quality of life. *European Journal of Oncology Nursing*, 19(3), 230–236. <https://doi-org.rlib.pace.edu/10.1016/j.ejon.2014.10.017>
- Simard, S., Thewes, B., Humphris, G., Dixon, M., Hayden, C., Mireskandari, S., & Ozakinci, G. (2013). Fear of cancer recurrence in adult cancer survivors: A systematic review of quantitative studies. *Journal Of Cancer Survivorship*, 7(3), 300-322. doi:10.1007/s11764-013-0272-z
- Simon, S. (2016, June 2). ACS Report: Number of US Cancer Survivors Expected to Exceed 20 Million by 2026. Retrieved December 18, 2017, from <https://www.cancer.org/latest-news/report-number-of-cancer-survivors-continues-to-grow.html>
- Sinding, C., & Wiernikowski, J. (2008). Disruption foreclosed: older women's cancer narratives. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, 12(3), 389-411. doi:10.1177/1363459308090055
- Smith, K. C., Klassen, A. C., Coa, K. I., & Hannum, S. M. (2016). The salience of cancer and the 'survivor' identity for people who have completed acute cancer treatment: A qualitative study. *Journal of Cancer Survivorship*, 10(3), 457-466. doi:10.1007/s11764-015-0489-0
- Stanton, A. L. (2006). Psychosocial concerns and interventions for cancer survivors. *Journal of clinical oncology*, 24(32), 5132-5137.

- Stanton, A. L., Bower, J. E., & Low, C. A. (2006). Posttraumatic Growth After Cancer. In L. G. Calhoun & R. G. Tedeschi (Eds.), *Handbook of posttraumatic growth: Research & practice* (pp. 138-175). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Steca, P., Greco, A., Monzani, D., Politi, A., Gestra, R., Ferrari, G., & ... Parati, G. (2013). How does illness severity influence depression, health satisfaction and life satisfaction in patients with cardiovascular disease? The mediating role of illness perception and self-efficacy beliefs. *Psychology & Health*, 28(7), 765-783.
doi:10.1080/08870446.2012.759223
- Steger, M. F., & Frazier, P. (2005). Meaning in Life: One Link in the Chain From Religiousness to Well-Being. *Journal of Counseling Psychology*, 52(4), 574–582. <https://doi-org.rlib.pace.edu/10.1037/0022-0167.52.4.574>
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, 53(1), 80–93. <https://doi-org.rlib.pace.edu/10.1037/0022-0167.53.1.80>
- Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, 38(11), 1161-1173. doi:10.1037/0003-066X.38.11.1161
- Taylor, S. E. and Brown, J. D. (1994) Positive Illusions and Well-being revisited: Separating Fact from Fiction. *Psychological Bulletin*, 116, 21-27
- Taylor, S. E., Kemeny, M. E., Reed, G. M., Bower, J. E., & Gruenewald, T. L. (2000). Psychological resources, positive illusions, and health. *American Psychologist*, 55(1), 99–109. <https://doi-org.rlib.pace.edu/10.1037/0003-066X.55.1.99>

- Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9(3), 455–472. <https://doi-org.rlib.pace.edu/10.1002/jts.2490090305>
- Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (1998). *Posttraumatic growth: Positive changes in the aftermath of crisis*. (R. G. Tedeschi, C. L. Park, & L. G. Calhoun, Eds.). Mahwah, NJ: Lawrence Erlbaum Associates Publishers. Retrieved from <http://rlib.pace.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1998-07186-000&login.asp&site=ehost-live&scope=site>
- Tennen, H., & Affleck, G. (2002). Benefit-finding and benefit-reminding. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology*. (pp. 584–597). New York, NY: Oxford University Press. Retrieved from <http://search.ebscohost.com.rlib.pace.edu/login.aspx?direct=true&db=psych&AN=2002-02382-042&login.asp&site=ehost-live&scope=site>
- Thoits, P. A. (1991). On merging identity theory and stress research. *Social Psychology Quarterly*, 54(2), 101-112. doi:10.2307/2786929
- Tomich, P. L., & Helgeson, V. S. (2004). Is Finding Something Good in the Bad Always Good? Benefit Finding Among Women With Breast Cancer. *Health Psychology*, 23(1), 16–23. <https://doi-org.rlib.pace.edu/10.1037/0278-6133.23.1.16>
- Tomich, P. L., & Helgeson, V. S. (2002). Five years later: A cross-sectional comparison of breast cancer survivors with healthy women. *Psycho-Oncology*, 11(2), 154–169. <https://doi-org.rlib.pace.edu/10.1002/pon.570>

- Tomich, P. L., Helgeson, V. S., & Vache, E. J. N. (2005). Perceived growth and decline following breast cancer: A comparison to age-matched controls 5-years later. *Psycho-Oncology*, 14(12), 1018–1029. <https://doi-org.rlib.pace.edu/10.1002/pon.914>
- van der Spek, N., Vos, J., van Uden - Kraan, C. F., Breitbart, W., Tollenaar, R. M., van Asperen, C. J., & ... Verdonck - de Leeuw, I. M. (2014). Meaning making in cancer survivors: A Focus Group Study. *Psycho-Oncology*, 23(7), 827-831. doi:10.1002/pon.3497
- Veenhoven, R., (1984). Conditions of happiness. Hingham. MA: Kluwer Boston Academic Publishers.
- Vickberg, S. M. J. (2003). The Concerns About Recurrence Scale (CARS): A systematic measure of women's fears about the possibility of breast cancer recurrence. *Annals of Behavioral Medicine*, 25(1), 16–24. [https://doi-org.rlib.pace.edu/10.1207/S15324796ABM2501pass:\[_\]03](https://doi-org.rlib.pace.edu/10.1207/S15324796ABM2501pass:[_]03)
- Wardle, J., Haase, A. M., Steptoe, A., Nillapun, M., Jonwutiwes, K., & Bellisle, F. (2004). Gender differences in food choice: The contribution of health beliefs and dieting. *Annals of Behavioral Medicine*, 27, 107–116.
- What Are the Key Statistics for Cancers in Young Adults? (2015, June 10). Retrieved December 19, 2017, from <https://www.cancer.org/cancer/cancer-in-young-adults/key-statistics.html>
- Wiebe, D. J., Berg, C. A., Palmer, D. L., Korbel, C., Beveridge, R. M., Lindsay, R., & Donaldson, D. (2002). Illness and the self: examining adjustment among adolescents with diabetes. *Paper presented: Society of Behavioral Medicine, Washington, DC.*
- Wronski, S. L. (2015). Defining cancer survivor and cancer survivorship; The who, what, and when. *Psicooncología*, 12(1), 7-18. doi:10.5209/rev_PSIC.2015.v12.n1.48900

Zebrack, B. (2000). Cancer Survivor Identity and Quality of Life. *Cancer Practice*, 8(5), 238-242

Zebrack, B. J. (2011). Psychological, social, and behavioral issues for young adults with cancer. *Cancer*, 117(S10), 2289-2294.

Zlata, Z. Z., Meier, E. A., Thomas, L. P. M., Palmer, B. W., Glorioso, D., Marquie, M. J., ... Jeste, D. V. (2015). Life satisfaction and its correlates among older cancer survivors: Critical role of psychosocial factors. *Psycho-Oncology*, 24(2), 241–244. <https://doi-org.rlib.pace.edu/10.1002/pon.3600>

Appendix A

Demographics Questionnaire

1. What is your gender?
 - a. Male
 - b. Female
2. Age: _____
3. Ethnicity: _____
4. What is your education level?
 - a. No formal education
 - b. High School Diploma/ GED
 - c. College graduate
 - d. Graduate level degree
5. What is your current relationship status?
 - a. Single
 - b. In a committed relationship
 - c. Married
 - d. Divorced
6. Which type of cancer were you diagnosed with? _____
7. When were you diagnosed with cancer?
 - a. Less than a year
 - b. 1-2 years
 - c. 2-3 years
 - d. 3-4 years
 - e. 4-5 years
8. What stage was your cancer when you were diagnosed?
 - a. Stage I
 - b. Stage II
 - c. Stage III
 - d. Stage IV
 - e. Stage of cancer not applicable (Indicate if diagnosed with a type of blood cancer)
9. Type of prognosis given by medical professional when diagnosed:
 - a. Good
 - b. Fair
 - c. Poor
10. Type of medical treatment (Select all that apply):
 - a. Surgery
 - b. Chemotherapy
 - c. Radiation
11. When was your last cancer-related treatment?
 - a. Less than a year
 - b. 1-2 years
 - c. 2-3 years
 - d. 3-4 years
 - e. 4-5 years
12. Did you experience hair loss as a result of your treatment?

- a. Yes
 - b. No
13. Has your medical provider told you that you are in remission based on your most recent test results indicating no evidence of disease?
- a. Yes
 - b. No
14. How long have you been in remission?
- a. Less than a year
 - b. 1-2 years
 - c. 2-3 years
 - d. 3-4 years
 - e. 4-5 years
15. Have you experienced a cancer recurrence?
- a. Yes, one time.
 - b. Yes, more than one time.
 - c. No

Appendix B

Illness Identity

Please rate the following question from 1 (not at all) to 5 (very much):

1. When you think about yourself in relation to your cancer, how much does each of these phrases describe you?

- a. a victim of cancer
- b. a cancer patient
- c. a person who has had cancer
- d. a survivor

Please choose one answer for the following question:

2. Choose one of the four categories below that best describes you:

- a. a victim of cancer
- b. a cancer patient
- c. a person who has had cancer
- d. a cancer survivor

Appendix C

The Centrality of Events Scale (CES)

Please think back upon the most stressful or traumatic event in your life and answer the following questions in an honest and sincere way, by circling a number from 1 to 5.

1. This event has become a reference point for the way I understand new experiences.
totally disagree 1 2 3 4 5 totally agree

2. I automatically see connections and similarities between this event and experiences in my present life.
totally disagree 1 2 3 4 5 totally agree

* 3. I feel that this event has become part of my identity.
totally disagree 1 2 3 4 5 totally agree

4. This event can be seen as a symbol or mark of important themes in my life.
totally disagree 1 2 3 4 5 totally agree

5. This event is making my life different from the life of most other people.
totally disagree 1 2 3 4 5 totally agree

* 6. This event has become a reference point for the way I understand myself and the world.
totally disagree 1 2 3 4 5 totally agree

7. I believe that people who haven't experienced this type of event think differently than I do.
totally disagree 1 2 3 4 5 totally agree

8. This event tells a lot about who I am.
totally disagree 1 2 3 4 5 totally agree

9. I often see connections and similarities between this event and my current relationships with other people.
totally disagree 1 2 3 4 5 totally agree

*10. I feel that this event has become a central part of my life story.
totally disagree 1 2 3 4 5 totally agree

11. I believe that people who haven't experienced this type of event, have a different way of looking upon themselves than I have.
totally disagree 1 2 3 4 5 totally agree

*12. This event has colored the way I think and feel about other experiences.
totally disagree 1 2 3 4 5 totally agree

13. This event has become a reference point for the way I look upon my future.
totally disagree 1 2 3 4 5 totally agree

14. If I were to weave a carpet of my life, this event would be in the middle with threads going out to many other experiences.
totally disagree 1 2 3 4 5 totally agree

15. My life story can be divided into two main chapters: one is before and one is after this event happened.
totally disagree 1 2 3 4 5 totally agree

*16. This event permanently changed my life.
totally disagree 1 2 3 4 5 totally agree

*17. I often think about the effects this event will have on my future.
totally disagree 1 2 3 4 5 totally agree

*18. This event was a turning point in my life.
totally disagree 1 2 3 4 5 totally agree

19. If this event had not happened to me, I would be a different person today.
totally disagree 1 2 3 4 5 totally agree

20. When I reflect upon my future, I often think back to this event.
totally disagree 1 2 3 4 5 totally agree

Items in the 7-item version are marked with an asterix. The copyright for the scales is held by the authors (© 2005, Berntsen & Rubin). Permission is given to use the scales for research purposes.

Appendix D

Stress Related Growth- Revised Scale (SRG-R)

For each of the following statements, indicate how much change you experienced, if any change at all, as a result of the negative event that you nominated earlier. Please use the following scale:

- +3 = A very positive change
- +2 = A moderate positive change
- +1 = A somewhat positive change
- 0 = No change
- 1 = A somewhat negative change
- 2 = A moderate negative change
- 3 = A very negative change

Because of this event...

1. I experienced a change in how I treat others.
2. I experienced a change in the extent to which I feel free to make my own decisions.
3. I experienced a change in my belief that I have something of value to teach others about life.
4. I experienced a change in the extent to which I can be myself and not try to be what others want me to be.
5. I experienced a change in the extent to which I work through problems and not just give up.
6. I experienced a change in the extent to which I find meaning in life.
7. I experienced a change in the extent to which I reach out and help others.
8. I experienced a change in the extent to which I am a confident person.
9. I experienced a change in the extent to which I listen when others talk to me.
10. I experienced a change in the extent to which I am open to new information and ideas.
11. I experienced a change in the extent to which I communicate honestly with others.
12. I experienced a change in my desire to have some impact on the world.
13. I experienced a change in my belief that it's OK to ask others for help.
14. I experienced a change in the extent to which I stand up for my personal rights.
15. I experienced a change in my belief about how many people care about me.

Appendix E

Benefit Finding Scale (BFS)

Cancer patients sometimes feel that having cancer makes contributions to their lives, as well as causing problems. Indicate how much you agree with each of the following, using these response options.

- 1 = Not at all
- 2 = A little
- 3 = Moderately
- 4 = Quite a bit
- 5 = Extremely

Having had cancer...

1. has made me more sensitive to family issues.
2. has led me to be more accepting of things.
3. has taught me how to adjust to things I cannot change.
4. has made me a more responsible person.
5. has made me realize the importance of planning for my family's future.
6. has brought my family closer together.
7. has made me more productive.
8. has helped me take things as they come
9. has helped me budget my time better.
10. has made me more grateful for each day.
11. has taught me to be patient.
12. has taught me to control my temper.
13. has renewed my interest in participating in different activities.
14. has led me to cope better with stress and problems.
15. Has confirmed my faith in God.
16. Has encouraged me to attend religious services more frequently.

Appendix F

The Meaning in Life Questionnaire (MLQ)

Please take a moment to think about what makes your life feel important to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

Absolutely	Mostly	Somewhat	Can't Say	Somewhat	Mostly	Absolutely
Untrue	Untrue	Untrue	True or False	True	True	True
1	2	3	4	5	6	7

1. ____ I understand my life's meaning.
2. ____ I am looking for something that makes my life feel meaningful.
3. ____ I am always looking to find my life's purpose.
4. ____ My life has a clear sense of purpose.
5. ____ I have a good sense of what makes my life meaningful.
6. ____ I have discovered a satisfying life purpose.
7. ____ I am always searching for something that makes my life feel significant.
8. ____ I am seeking a purpose or mission for my life.
9. ____ My life has no clear purpose.
10. ____ I am searching for meaning in my life.

MLQ syntax to create Presence and Search subscales:

Presence = 1, 4, 5, 6, & 9-reverse-coded

Search = 2, 3, 7, 8, & 10

Appendix G

The Satisfaction with Life Scale (SWLS)

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 – Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.