DEPAUL UNIVERSITY
UNIVERSITY LIBRARIES

DePaul University
Via Sapientiae

College of Science and Health Theses and Dissertations

College of Science and Health

Fall 11-24-2015

Meaning as a Buffer Against Adolescent Psychopathology

Ellen Shaina Dulaney
DePaul University, Chicago, DEDOHIOSKAI@gmail.com

Follow this and additional works at: https://via.library.depaul.edu/csh_etd

Part of the Psychology Commons

Recommended Citation

Meaning as a Buffer

Against Adolescent Psychopathology

A Thesis

Presented in

Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

By

Ellen Shaina Dulaney

June, 2015

Department of Psychology

College of Science and Health

DePaul University

Chicago, Illinois

Thesis Committee

Kathryn E. Grant, Ph.D., Chairperson

Verena P. Graupmann, Ph.D.

Acknowledgments

I would like to express my sincere appreciation to my thesis chair Kathryn E.

Grant and committee member Verena P. Graupmann for their support and

guidance throughout this project. I would also like to thank Kimberly A. Quinn,

Geoffrey A. Wetherell, and DePaul University's Laboratory for Social Science

Research for their enlightening contributions. My deepest gratitude goes to my

loved ones who have supported and encouraged me throughout this process.

Biography

The author was born in Knoxville, Tennessee, March 19th, 1987. She graduated from Webb School of Knoxville High School, in Knoxville. She received her Bachelor of Arts degree from Hampshire College in 2009.

Table of Contents

List of Tables

List of Figures

Abstract

This thesis investigates the function of meaning in life in adolescence to ascertain whether specific psychological resources may protect youths against threats to subjective well-being. Meaning in life and the search for the meaning in stressful occurrences were independently examined for their influence on stress impact and depression symptomatology. 201 American middle-school and high-school students between 12 and 19 years of age were recruited for this study. Participants reported on questionnaires targeting frequency of negative life events; depressive symptoms; sense of meaning; and tendency to reframe stressors in terms of their meaning, termed "stressor meaning seeking". It was expected that having a higher sense of meaning and higher stressor meaning seeking would be positively related, and that each of these variables would be able to buffer the impact of stress and strengthen resilience to depression. Statistical analyses supported the hypotheses, suggesting that meaning can help adolescents manage stressor threats to well-being and be resistant to developing depression. In addition, the results provided evidence that framing stress in terms of its value can be an effective coping strategy for youth. This is among the first contributions that shed light on how meaning and its pursuit interact with threats to well-being in an adolescent sample. These findings have implications for both theoretical and practical applications, and interventions against adolescent stress and psychopathology may be informed by the relationships demonstrated in this investigation.

Introduction

Happiness is one of the most sought-after states in human existence, with debate surrounding how it can be achieved and what it means to have it. In psychology, much energy is devoted to understanding the factors that support long-term happiness as well as those that impede it. Several models have been created in attempts to capture and define happiness in exact terms. Through this effort, it has been established that happiness can have cognitive and affective aspects; individuals may weigh their concrete life developments and circumstances, their typical emotional patterns, or both to assess their level of contentment. Subjective well-being (SWB), one of the most highly utilized and researched conceptualizations of happiness, encompasses both of these areas (Diener, 1984). Assessments of SWB probe for an individual's broad evaluations of his/her life, satisfaction in key areas such as employment and romantic relationships, and ratings of the emotions and moods the individual frequently experiences. By allowing for this degree of subjectivity, SWB as a framework acknowledges that each person largely defines what it means to be happy for him or herself.

Several life factors have been identified as contributors to SWB. Kesebir and Diener (2008) highlight wealth, social relationships, religiosity, and personality attributes as uniquely influencing SWB. In addition, these authors argue that possessing a sense of meaning in life can have a powerful impact on one's satisfaction. As life meaning is theoretically less intractable and more responsive to cognitive reframing than the other aspects listed, it would be fruitful

to explore how meaning influences SWB and the elements that threaten it, and whether meaning interventions can be designed to produce positive outcomes in individuals' lives. Such an exploration should begin with a review of the relevant contributions that have been made to these topics up to this point.

Defining Meaning and Its Structure

The highly personal and ambiguous nature of meaning causes it to be significant for various areas within psychology and to those that lay outside of the field as well. For centuries philosophers have debated the existence and qualities of meaning and whether individuals can determine the value of their lives using a set of personal principles instead of relying on external moral and judgment structures. In the last several decades, psychologists have accepted meaning as a worthwhile topic of discussion and begun to investigate how having a sense of meaning impacts psychological health. Frankl's (1959) logotherapy was developed to address what he called the existential vacuum in his patients, referring to the sense of directionlessness and lack of purpose many felt in their lives. Yalom (1980) created a model for existential psychotherapy to help patients confront fundamental human concerns that frequently plague individuals such as death, meaning, seclusion, and autonomy.

As more psychologists began to seriously consider meaning, a rich body of research accumulated with the goal of establishing an accepted definition of meaning and of understanding its underlying nature. Reviews of this knowledge have been conducted to provide an extensive history of these findings (Steger, 2009; Steger, 2012a). In this growing literature, meaning has been utilized to

cover two dimensions labeled comprehension and purpose (Steger, 2012b). In this framework, comprehension refers to one's ability to understand one's self and relation to the environment. Purpose includes broader life goals that are central to the self and motivate the individual over the long term. This definition of meaning is generally sufficient to refer to findings in the literature; however it is relevant to know that meaning has been assigned other definitions as this area of research has evolved and at times a specific term may have multiple connotations (Steger, 2012b).

Meaning and Well-Being

In support of the existential psychotherapists who provided the foundation of meaning-focused investigation and asserted that meaning in life is a fundamental human need, there has emerged substantial empirical evidence for an independent contribution of life meaning to well-being. Positive associations have regularly been found between self-reported levels of meaning in life and different operationalizations of well-being on various instruments. For example, meaning has been found to be positively related to self-satisfaction (Reker & Cousins, 1979), life satisfaction (Reker, 1977; Park, Park, & Peterson, 2010), acceptance of death (Durlak, 1972), and happiness and positive affect (Park, Park, & Peterson, 2010). Meaning in life has been shown to be strongly positively associated with psychological well-being in replicated studies (Zika & Chamberlain, 1992) and to be a better predictor than several other factors in contributing to SWB. For example, compared to internal locus of control and assertiveness, traits shown to protect against stress, meaning in life has been found to be the most consistent

predictor of SWB (Zika & Chamberlain, 1987). To assess common attitudes towards meaning, King and Napa (1998) provided college-aged and adult subjects with employee judgments about their occupations. For both age groups, subjects rated the occupations employees reported to be more meaningful as being more highly desirable and morally good, suggesting that these subjects perceived meaning in life as being connected with having a good life. It seems that people are consciously aware of the importance of believing that one's life is meaningful.

Meaning and Depression

In addition to being associated with increased well-being, life meaning has also been shown to influence processes that potentially detract from SWB. Depression; an affective disorder characterized by negative affect, decreased ability to enjoy pleasurable activity, and hopelessness for the future; impacts millions worldwide and as such is one of the greatest threats to SWB. Kleftaras and Psarra (2012) found subjects who reported higher life meaning to endorse lower depressive symptomatology, and also found a mirroring effect such that subjects with higher depressive symptoms tended to have a lower sense of life meaning. This negative association between meaning and depression levels has been repeatedly replicated by multiple studies in the general United States population (Mascaro & Rosen, 2008; Mascaro & Rosen, 2005; Park et al., 2010) and in a variety of specific populations including HIV patients (Lyon & Younger, 2001), cancer survivors (Simonelli, Fowler, Maxwell, & Andersen, 2008), and clinically depressed individuals (Thakur & Basu, 2010).

The building collection of correlational data is compelling support for the relation between meaning and depression. Additionally, interventions designed to increase life meaning through life review and exploration of meaningful relationships have been shown to reduce depressive symptoms. This effect has been established in the general population via meta-analyses (Bohlmeijer, Smit, & Cuijpers, 2003; Hsieh & Wang, 2003), and has further been found to apply in specific groups including Korean immigrant women (Cho, Bernstein, Roh, & Chen, 2013) and the elderly (Westerhof, Bohlmeijer, & Valenkamp, 2004; Westerhof, Bohlmeijer, van Beljouw, & Pot, 2010). These interventions can be interpreted as resembling experimental manipulations designed to understand the directional relation between meaning and depression. Meaning in life has been shown to predict depression over time while depression has not been found to predict variations in meaning (Krause, 2007), suggesting a unidirectional influence between decreases in a sense of life meaning and increases in levels of depressive symptomatology.

Meaning and Stress

Depression is not the only threat to life satisfaction and well-being that has been empirically linked with assessments of meaning. Posttraumatic stress disorder (PTSD) is a primary way that exposure to stress manifests pathologically (Pinel, 2011, pp 474). Meaning in life has been negatively related to symptoms of PTSD (Owens, Steger, Whitesell, & Herrera, 2009), suggesting a protective role of meaning in the process of coping with stressors. In theory, the impact of a stressful event may partially depend on how it is appraised and how it fits or

conflicts with a person's established goals, identity, and understanding of what imbues life with meaning. If a stressor challenges one's perception of meaning for his/her life and the world it may be experienced as highly stressful and threatening. Among veterans who sought help for emotional or psychological problems after participating in war, those who suffered a greater loss of meaning were more likely to seek help from clergy in addition to mental health professionals (Fontana & Rosenheck, 2005). This targeted pursuit of metaphysical support implies that meaning loss is exceedingly distressing over and above the other tolls of traumatic experiences.

Just as life meaning interventions were shown to decrease depressive symptoms, these efforts have also been demonstrated to influence PTSD symptoms and coping processes. Meaning interventions have been applied to treat combat-related PTSD in veterans (Southwick, Gilmartin, McDonough, & Morrissey, 2006), and supporting religious meaning-making in survivors of military trauma has been found to reduce PTSD symptoms in these individuals (Harris et al., 2011). Further, success in deriving meaning from traumatic combat events has been negatively associated with PTSD symptoms (Currier, Holland, Chisty, & Allen, 2011), and creating meaning out of an experience with cancer has been related to better psychological adjustment in cancer survivors (Park, Edmondson, Fenster, & Blank, 2008). Meaning-making coping has been shown to mediate the relationship between religion and adjustment to loss across time (Park, 2005), indicating that religion influences loss adjustment by providing meaning to an individual. Together, these findings imply that meaning largely

facilitates coping and that individuals often seek help to reframe an experience in a meaningful way. Additionally, there is evidence that the benefits of receiving emotional support from social ties stem from reinforcing the individual's sense of meaning in life, demonstrating that meaning may be able to mediate other supports for the coping process in addition to aiding it directly (Krause, 2004).

Meaning's Components and Well-being

Considering the reviewed literature as a whole, it seems that life meaning may contribute to SWB both by increasing positive assessments and by bolstering against depression and the impact of negative experiences. As discussed previously, meaning has been described as encompassing one's comprehension of self and environment as well as one's appraisal of present circumstances in the context of broader purpose-driven life goals. Since meaning has been established to contain these separate comprehension and purpose dimensions, it would be beneficial to find out whether both dimensions interact with well-being and to what degree. In this vein, Scannell, Allen, and Burton (2002) found increased well-being to be more strongly predicted by having a broad sense that one's life is meaningful and fulfilling than by possessing a cognitive framework for how one's life is significant in the context of a complex understanding of self and world. In other words, having the sense of knowledge that one's life is meaningful, even if this knowledge is simply derived from broad beliefs or a "gut feeling" about one's life, seems to be more important for well-being than being able to explicitly explain why one's life has meaning. To relate this to the comprehension and purpose components of meaning, it may be that having a sense of purpose is more

beneficial than being able to comprehend the concrete details of one's internal and external environment. Further, positive affect has shown the potential to increase the feeling that life experiences are meaningful and the tendency to evaluate a situation for meaningful content (King, Hicks, Krull, & Del Gaiso, 2006), suggesting that certain aspects of meaning may be more strongly related to well-being than others and that this relation may not be unidirectional.

Meaning's Pursuit and Well-Being

Beyond this evidence for different interactions between SWB and the sub-components of meaning, a newly developing line of research has also detected interesting patterns in the process of meaning creation that have significance for SWB outcomes. Researchers are now examining the differences between the possession of and search for a sense of meaning in one's life. In an attempt to understand the independent aspects of these states, a study conducted by Steger, Kashdan, Sullivan, and Lorentz (2008) found that the lack of meaning seemed to trigger a search for it and that this search to locate meaning did not always succeed in its attainment. Thus, it appears that these states may not be as temporally or causally linked as intuition may lead one to assume. In investigating these connections further, Cohen and Cairns (2012) found the search for meaning to be negatively associated with SWB. The researchers theorize that if an individual is searching for meaning, they are likely experiencing distressing feelings of disorientation in their world. In addition, the searching process may be taxing and going through life without being connected to a source of meaning may be as well. However, the researchers also found that individuals who are

searching for meaning in life but report having high levels of meaning already are protected from the negative effects of searching on happiness levels, a pattern that has been detected elsewhere (Park et al., 2010). Thus, the search for meaning may be a journey that some can afford to undertake more easily than others and with less risk.

Meaning Across the Lifespan

Taken together, this body of evidence suggests that SWB may be differentially influenced by broad beliefs and specific cognitive assessments of meaning and may also depend on the degree to which an individual feels that their need for meaning is being met. Thus, a more complex understanding of how meaning impacts human existence is beginning to be revealed. However, before drawing wide-reaching conclusions from the existing literature about the function of meaning in a human life, it is important to ask how its influence may change across a lifespan. As an individual progresses through life, society shifts the demands and role expectations it places on him or her, and each person must learn to interact with others and come to terms with the biological toll of time. As an individual adapts to these challenges, his/her experience of and need for meaning may evolve as well. For instance, a lack of meaning may be particularly distressing during a time in which humans generally expect to feel grounded and stable, such as middle age, but may be more tolerable during a time of considerable flux and discovery, such as puberty. Thus, given the beneficial and protective functions of meaning there is great need for understanding its role at

different points in life, and it is possible that the need for meaning interacts with

SWB's contributors and detractors in characteristic ways at different life stages.

Meaning in Adolescence

Adolescence may be a particularly good example of a period uniquely

orientated to meaning due to the fact that it is in this life stage that the individual

is faced with rapid role redefinition and increased responsibility and autonomy. At

this point in life, the individual must navigate the transition from childhood to

adulthood and choose his/her own direction, and may identify sources of meaning

for guidance through these readjustments (Erikson, 1968). Two dimensions of this

identity formation process, labeled exploration and commitment, have been

outlined by Marcia (1966). Generally, during the exploration stage an individual

searches for a system of values and goals that can provide cohesion in his/her

world and guidance in his/her actions. Then, during the commitment stage the

individual consciously selects certain values to internalize and thereby achieves a

sense of identity.

Based on this theoretical progression, it would be plausible if the

adolescent's orientation towards meaning were qualitatively different than that of

the adult, who conceivably has already achieved a secure sense of identity and

principles from which to derive meaning. Additionally, adolescence is associated

with heightened stress and a sharp increase in the risk of depression (Thapar,

Collishaw, Pine, & Thapar, 2012). Given these conditions, adolescents may be

particularly vulnerable to developing psychopathology and experiencing

decreases in SWB. This increased susceptibility, coupled with the evidence for

meaning buffering against stress and depression in adults, makes it important to understand how meaning affects the adolescent population. If this were further clarified, therapeutic interventions could be better equipped to address the meaning needs of this group and thus hopefully shield them against psychopathology. Unfortunately, investigations into the relation between meaning and adolescent well-being have been sparse until recently (Brassai, Piko, & Steger, 2012).

Preliminary studies have begun to detect similar positive associations between meaning and well-being in adolescent participants to those established in older samples (Halama & Dědová, 2007; Ho, Cheung, & Cheung, 2010; Hong, 2008; Tavernier & Willoughby, 2012). While this may at first seem to imply no age differences in meaning orientation, emerging evidence suggests that the quest for identity in adolescence functions to provide youths with meaning. Kiang and Fuligni (2010) found meaning in life to mediate the relationship between ethnic identity and adjustment in adolescents. In other words, a strong ethnic identity seems to provide a beneficial source of meaning.

Further, it seems the act of searching for meaning may play a special role in adolescence in contrast to its negative effect on SWB found in adults without already high levels of meaning. In a study to investigate the role of meaning's purpose component in different life stages, Bronk et al. (2009) found that the search for purpose was positively associated with life satisfaction in adolescents and emerging adults. This association was not present in adult participants, in accordance with the established patterns. This research effort may have

highlighted a special need for meaningfully reframing one's life during adolescence and the transition into adulthood. In a later study, Brassai et al., (2012) found search for meaning and presence of meaning to significantly predict higher levels of health behaviors and lower levels of problem behaviors in Eastern European males aged 15-18, with search for meaning contributing most.

It may be that, following from theoretical and accumulating empirical indications, the demands and conditions of adolescence create a unique environment that imposes special requirements for meaning and identity anchors. While it is important for adults to have sufficiently accomplished the developmental task of identity achievement, and searching for meaning may thus be distressing for them, adolescents may not be adversely affected by the search for meaning as they build a secure identity. This proposed age-dependent function of meaning is a strong case for determining the need for and benefits of meaning at each life stage, with an initial focus on particularly at risk groups.

Rationale

As discussed, there have been numerous studies pointing to a protective role of meaning against stressful events and depression. Since adolescence is a time of heightened vulnerability to these threats, and as it seems to have a unique orientation to meaning and its pursuit, it would be fruitful to understand how these associations interact at this stage of development. Initial exploration has not ventured far enough to address whether meaning or the search for it can protect against stressful life experiences and the onset of depression in this population.

The present study is ideally positioned to shed light on these questions. Adolescents between the ages of 12 and 19 years of age were asked to report on their sense of purpose, depression symptoms, and their frequency of experienced negative life events. As purpose is considered one of the two dimensions of meaning, and as it has been suggested to be the most powerful of the dimensions for predicting well-being (Scannell et al., 2002), these questions were deemed acceptable probes of meaning. Further, it is conceivable that adolescents do not distinguish between meaning and purpose as terms, and in fact purpose may be the more transparent of the two with regards to its definition.

Using these data, relationships between meaning and symptoms of depression were probed. Further, if a relationship between negative events and depression symptoms were to be found, it would be possible to investigate the influence of meaning on this relationship. Currently, it remains unclear whether meaning in life moderates the established association between stressors and depression (Kessler, 1997) for adolescents. Since the literature suggests that meaning can cushion the impact of stressful events in adults, if meaning were to attenuate the association between negative life events and depressive symptoms in this sample this could be interpreted as evidence that meaning may protect adolescents from the effects of stressors they have encountered. The present study sought to address these questions, and these data thus provided the exciting opportunity to study how meaning influences both depression and the impact of stressors in this population.

Finally, given the building literature that searching for meaning is positive for youth SWB, it would be informative to investigate whether the search for meaning may also help protect youth against threats to SWB. The data collected for the present study allowed a first glimpse into this possibility. In addition to the questions measuring sense of meaning, negative life events, and symptoms of depression, participants in the present sample also reported their tendency to respond to a stressor by looking for the valuable lessons it may hold and reflecting on its possible positive future outcomes. This tendency has been termed "stressor meaning seeking". While this is not a direct assessment of whether participants were engaged in a search for meaning at the time of this data collection, it can be argued that individuals who react to stressors in this way may be characteristically more likely to look for the abstract meaning of their circumstances and may go through more periods of searching for meaning over time. By considering the possible future effects of a condition or event, they may also become practiced in looking at the present in terms of its significance for their overall life trajectory and goals, a component of meaning's comprehension dimension.

Through evaluating the effect that stressor meaning seeking has on depression outcomes of negative events, it is possible to begin addressing whether construing meaning out of a stressor can be an effective coping strategy. In addition, if a positive relationship were to be found between this reframing strategy and adolescents' sense of meaning, this finding would support the idea that searching for meaning may be more effective in finding meaning during adolescence than it is in adulthood (Steger et al., 2008). Thus, this study makes an

important contribution both to the life meaning in adolescence literature and the broader collection of knowledge regarding how meaning in life influences SWB.

Research Questions

Research Question I. In this adolescent sample, to what extent does the frequency of negative life events appear to predict levels of depression symptoms as the literature would suggest?

Research Question II. In this sample, to what extent do levels of life meaning predict levels of depression symptoms?

Research Question III. If a relationship is found between negative life event frequency and depression, to what extent will life meaning moderate this relationship?

Research Question IV. To what extent does stressor meaning seeking predict adolescents' reported levels of meaning?

Research Question V. To what extent do levels of stressor meaning seeking moderate the relationship between negative life events and depression?

Statement of Hypotheses

Hypothesis I. Greater frequency of negative life events will predict greater levels of depression symptoms as has been found in the literature (Kessler, 1997).

Hypothesis II. Meaning in life will be negatively related to reported symptoms of depression.

Hypothesis III. Having a greater sense of meaning in life will attenuate the positive relationship between frequency of negative life events and depression. Given its positive relationship with SWB in both adults and adolescents, and its protective function against depression and the impact of stressful events in adults, it is expected that having a sense of life meaning will protect against these threats in this sample as well.

Hypothesis IV. Greater stressor meaning seeking will predict increased levels of reported meaning.

Hypothesis V. Greater levels of stressor meaning seeking will also be negatively related to depression symptoms and will lead to reduced ability for negative life events to predict depression symptoms.

Method

Research Participants

201 adolescents (ages 12 to 19) were recruited from three diverse urban schools in the Midwest (two schools with grades K-8th; one high-school). The sample was approximately 57.5% female, 34.3% African American, 11.9% European American, 12.4% Asian American, 0.5% American Indian, 19.4% Multi-racial, 9.4% Other, and 11.4% Non-responding. In addition to questions of ethnicity, 37.2% of participants reported having Hispanic background.

Procedure

Data were collected during the second wave of a larger 2-wave research endeavor. Administration took place during daytime Saturday sessions that

included time for breakfast, lunch, and dinner, and breaks for relaxation/

recreation, short movies, college informationals, and a college tour. Students were

randomly assigned to an order of participation in various measures and tasks

assessing life circumstances, mental and emotional well-being, and reactivity to

stressful situations, and out of their total responses, data from three measures were

examined for the present analyses. At the end of the day, all participants were

provided with a $50 gift card to Target, Old Navy, or Best Buy. Students received

an additional $20 in gift cards if they returned rating forms filled out by their

parents ($10 for themselves and $10 for their parents). Finally, students who were

unable to participate in second wave full-Saturday data collections were offered

the opportunity to complete the surveys at their home school. These students were

provided with $20 in gift cards to Best Buy, Old Navy, or Target.

Measures

    Sense of meaning. The level of participants' sense of meaning was

assessed using three items from the Persist Subscale of the Shift and Persist

Questionnaire (SAPQ; Chen, Miller, Lachman, Gruenewald, & Seeman, 2012).

As previously discussed, the SAPQ was deemed an appropriate way to target

adolescents' sense of life meaning although its explicit language inquires about

purpose. The Persist Subscale of the SAPQ includes eight items. Participants

indicate how much each item describes him or her on a scale from 1 (not at all) to

4 (a lot). The three items selected to capture purpose were "I feel my life has a

sense of purpose", "My life feels worthwhile", and "I believe there is a larger

reason or purpose for my life." The internal consistency for these three items in

this sample was high (α = .78). Two additional items from this subscale that were considered for inclusion were "When I think about life, I ask myself why I exist at all", and "I feel my life is going nowhere", both to be reverse-scored. However, neither was found to significantly contribute to the construct formed by the first three.

Stressor meaning seeking. This construct was created using specific items from the Shift Subscale of the SAPQ, and was considered to represent individual differences in tendency to look for greater meaning in stressful events or disappointments. In response to the prompt "Rate how much you do each of the following when something stressful happens in your life", included items were "I think about what I can learn from the situation", and "I think about the positive aspects, or the good that can come from the situation." In response to the prompt "Rate how much you do each of these things when things don't go the way you want and you are not able to change it", included items were "I think about what good things could come from the situation", "I think about what I can learn from the situation", "I think about other new goals that I could pursue", and "I start working on other new goals." The resulting six-item measure had an internal consistency that was very high (α = .94).

Depression symptomatology. The Child Depression Inventory (CDI; Kovacs, 1992) was used to assess participants' depressive symptoms. The CDI is a 27-item self-report measure designed for use with school-aged children and adolescents. Each item represents a depressive symptom, and respondents are asked to choose the level of symptom severity, out of three possible levels, for

each item that best describes how they have been feeling over the past two weeks.

The CDI includes five subscales: Negative Mood, Interpersonal Problems,

Ineffectiveness, Anhedonia, and Negative Self-Esteem. Sample items include "I

am sad all the time", "I am tired all the time", and "Nobody really loves me."

Reliability and validity are well-established for the CDI (Kovacs, 1992; Mattison,

Handford, Kales, Goodman, & McLaughlin, 1990; Smucker, Craighead,

Craighead, & Green, 1986). In the present sample, internal consistency for the

CDI at the second wave of data collection was very high ($\alpha = .91$).

Negative life events. The Urban Adolescent Life Experiences Scale

(UALES; Allison et al., 1999) design is based on the Adolescent Perceived Events

Scale (APES; Compas, Davis, Forsythe & Wagner, 1987), a well-established,

valid and reliable measure of stressful life events, developed on predominantly

middle-class European American adolescents. The UALES is an 87-item

measure, and each item was generated using data from low-income urban,

predominantly ethnic minority, youth (Allison et al., 1999), which is more

appropriate for our sample's heterogeneous background makeup. Respondents are

asked to rate the frequency with which they have been exposed to each of a series

of stressful experiences on a scale ranging from 1 through 5, with higher numbers

indicating greater frequency of exposure. Sample major life event items include:

"A friend has died," "I broke up with a boyfriend or girlfriend," and "A friend

goes to jail." Sample daily hassle items include: "I have poor school supplies"

and "I have transportation problems." Test-retest reliability of the UALES was

.84 in a pilot study of 6th through 12th graders (Allison et al., 1999).

The original measure includes positive and negative events. In the present study, the measure was shortened to include only negative events, as positive events have not been shown to predict psychological problems (Siegel & Brown, 1988). Furthermore, eight items that overlapped with items on the Youth Self-Report (Achenbach, 1991), one of the other questionnaires administered during these data collections, were omitted to ensure that artificially high correlations were not found between stressors and psychological symptoms. The modified version of the UALES used in the present study had a two-week test-retest reliability of .80 and internal consistency reliability of .92 (Grant et al., 2000). In the present sample, internal consistency for the second wave of data collection was good ($\alpha = .81$).

Results

Initial Data Screening

All preparatory and statistical procedures were carried out using IBM's Statistical Package for the Social Sciences (SPSS). Before completing the tests necessary to evaluate the research hypotheses of interest, it was first appropriate to address certain points and make reason-grounded decisions as to how to correctly compute the involved variables from the raw data. First, select items on the Child Depression Inventory (CDI) and the Urban Adolescent Life Experiences Scale (UALES) were reverse-scored so that there would be consistent directionality of values among the items for each measure, and so that higher values on each of these measures would represent higher severity of depression symptomatology and higher exposure to negative life events, respectively. Next,

calculating means of the items within each variable for each participant was chosen as the best method for obtaining composite variable scores. This is the standard and most robust way to create composite variable scores, as composites made from mean scores are less susceptible to differences in test length and missing data.

When examining the raw data, it became clear that neither listwise nor pairwise methods of excluding participants from mean calculation would have been ideal ways to manage cases of missing data. The Child Depression Inventory (CDI) and the Urban Adolescent Life Experiences Scale (UALES) are lengthy measures, and thus participants are more likely to skip items out of preference, mistake, or fatigue. At the same time, these measures are long enough that a participant may be able to provide sufficient data for approximating their composite variable score even with some items left unanswered. Therefore, it was thought that listwise removal of all subjects missing input for any one item on these measures would likely result in a great amount of data being lost, potentially unnecessarily. In the case of the sense of meaning and stressor meaning seeking variables, it seemed that these variables were also made up of enough items, three and six respectively, that valuable data may also have been needlessly lost in applying listwise deletion to compute their variable scores. Even though the sense of meaning variable is only made up of three items, two completed items may be sufficient for detecting patterns between this variable and others, especially if instances of single-item omission were relatively rare for this variable.

To assess the reduction in participant pool for each variable that would result from listwise calculation of its mean score, these calculations were performed and the N for each listwise mean score was appraised. Out of the original sample size of 201, the listwise mean score for depression symptomatology was made up of 182 participants, the score for negative life events was made up of 141 participants, the score for sense of meaning was made up of 177 participants, and the score for stressor meaning seeking was made up of 165 participants. At this stage, variable mean scores were already unequal in terms of participant numbers, a circumstance which can be potentially problematic when present in the extreme. Beyond this, any relationship analyses to be carried out would require participants to have provided complete data for all involved variables.

To assess the further sample reduction resulting from these constraints, the regression models implied by the proposed hypotheses were tested using the listwise mean scores. For the multiple regression investigating Hypotheses I, II, and III, the pool of viable data would include 124 participants. For the linear regression investigating Hypothesis IV, the final pool would include 160 participants. Last, with regards to the multiple regression evaluating Hypothesis V, the final pool of data would include 116 participants. As each of the final subject groups for the multiple regressions constituted about half of the total sample of participants, listwise deletion of missing data was deemed too stringent for the present dataset. It may be that the linear regression used to assess Hypothesis IV would not have suffered badly from data loss. However, it was

decided that all hypothesis should be analyzed using a single method of missing data management so that the same variable involved in different models would not have been calculated using a different method in each case.

Pairwise deletion was likewise judged to be inappropriate using a similar method of reasoning. The CDI and UALES measures and the stressor meaning seeking variable each contain too many items to be appropriately represented by only one item, which is a possible occurrence using pairwise deletion because this method will only exclude a participant if they did not provide any responses whatsoever for all items on a measure. In all other cases, the information provided by the participant will be used to represent their composite score even if only one item was answered. With regards to the sense of meaning variable, while it may be more reasonable in this case to allow one item to represent a composite value since the variable is only composed of three items in total, an examination of the raw data revealed that there was only one case in which a participant gave answers to only one of the three variables. So, gaining this single point of information was not deemed worth the risk of misrepresenting this participant's score.

Since the two conventional methods of addressing the problem of missing data were rejected, a different approach needed to be devised. It was deemed that if 66.67%, or two-thirds, of the items for a variable had been completed, then this would be sufficient for computing an appropriately representative variable score. Using this cutoff, syntax was written for SPSS to compute mean scores for depression if at least 18 items of the CDI were completed, for negative life events

if at least 58 items of the UALES were completed, for sense of meaning if at least two items of the selected Shift and Persist Questionnaire (SAPQ) items were completed, and for stressor meaning seeking if at least four items of the selected SAPQ items were completed.

For each of the four variables, item responses were inspected to ascertain how many participants with missing data had been retained, and how many items had been left unanswered in each case. For depression, out of 199 possible cases using this exclusion criterion, the maximum number of unanswered items was three and there was only one occurrence of this. There was likewise only one occurrence of two unanswered items, and minimal occurrences of one item having been left unanswered. For negative life events, out of 189 possible cases, the maximum number of unanswered items was 26 with one occurrence, followed by one occurrence of nine unanswered items. Following that, there were minimal occasions of four and fewer items being left incomplete. For sense of meaning, out of 184 possible cases, there were seven occurrences in which a participant only answered the minimum two out of the three total items. For Stressor Meaning Seeking, out of 180 possible cases, the maximum number of unanswered items was five with 14 occurrences. In fact, there were no occurrences of participants exactly meeting the minimum cutoff of four items answered. For each of these variables, the identified cases were not considered to be numerous enough to pose a threat to the overall representative ability of the composite mean scores.

As a final check of the appropriateness of including only participants who had provided answers to two-thirds of a measure's items, each proposed regression analysis was run both using listwise and two-thirds inclusion deletion rules and their results were then compared. Both methods of data inclusion revealed matching significance and direction patterns for all detected relationships, except in the case of interaction patterns, which were not probed using listwise deletion. Thus, the two-thirds inclusion rule was deemed not to distort the nature of relationships within the data, and protected against the variance loss that listwise deletion would have introduced through sample size reduction.

Upon creation of mean scores, all variables operating as predictor variables were mean-centered according to the statistical standard in these procedures. When a variable was included in a model as a dependent variable to be predicted by other variables, the non-centered version of this outcome variable was used in the model. Once these preparatory procedures had been completed, linear and multiple regression analyses were carried out to evaluate the hypotheses of this study.

Hypotheses I, II, & III

A multiple regression analysis was used to determine the independent contributions of participants' exposure to negative life events and sense of meaning to levels of depression symptoms, and to determine the contribution of the interaction between these two predictors to this outcome. This analysis evaluated the expected patterns outlined in Hypotheses I, II, and III, such that

greater levels of negative life events would predict greater levels of depression, greater levels of sense of meaning would predict lower levels of depression, and greater levels of sense of meaning would attenuate the ability of negative life events to predict depression.

With each involved variable being calculated using the inclusion cutoff of two-thirds items answered, the total number of participants for this analysis was N = 181. The overall model significantly explained variance in depression symptoms, $F(1, 177) = 56.94$, $p < .001$. Table 1 includes further results of this analysis including B values, t values, and 95% confidence intervals. A significant positive relationship was found between exposure to negative life events and depression with a large effect size. There was also a significant negative main effect relationship between sense of meaning and depression with a large effect size. Finally, there was a significant negative relationship between the negative life events and sense of meaning interaction term and depression with a large effect size.

Table 1.
Negative life events and sense of meaning predicting depression

Variable	B	SE	t	95%CI	η^2_p
Negative Life Events	.54***	.07	7.77	.40-.67	.25
Sense of Meaning	-.11***	.02	-5.68	-.15--.07	.15
Interaction	-.46***	.09	-5.26	-.63--.29	.13

Note. ***$p < .001$.

Due to the finding of a significant interaction effect between exposure to negative life events and participants' sense of meaning, a simple slopes analysis was performed to further probe the nature of this interaction. This was

accomplished by applying the General Linear Model again to detect possible significant effects at each combination of the predictor variables at one standard deviation below and above their means, which had been centered to zero for both variables. In other words, the ability of sense of meaning to predict depression was tested when the negative life events variable was at one standard deviation below its mean, and also when the negative life events variable was at one standard deviation above its mean. Likewise, the ability of negative life events to predict depression was tested when the sense of meaning variable was at one standard deviation below its mean, and also when the sense of meaning variable was at one standard deviation above its mean.

Figure 1 displays a graphical representation of this interaction, with accompanying regression equations between the sense of meaning, negative life events, and depression symptomatology variables for each combination of high and low levels of each predictor. Sense of meaning was only significantly negatively related to depression at high levels of exposure to negative life events, with a large effect size. This influence disappeared at low levels of exposure to negative life events. Probing the influence of negative life events, exposure to negative life events was only significantly positively associated with depression at low levels of sense of meaning in life, with a large effect size. This influence disappeared when values of sense of meaning in life were high.
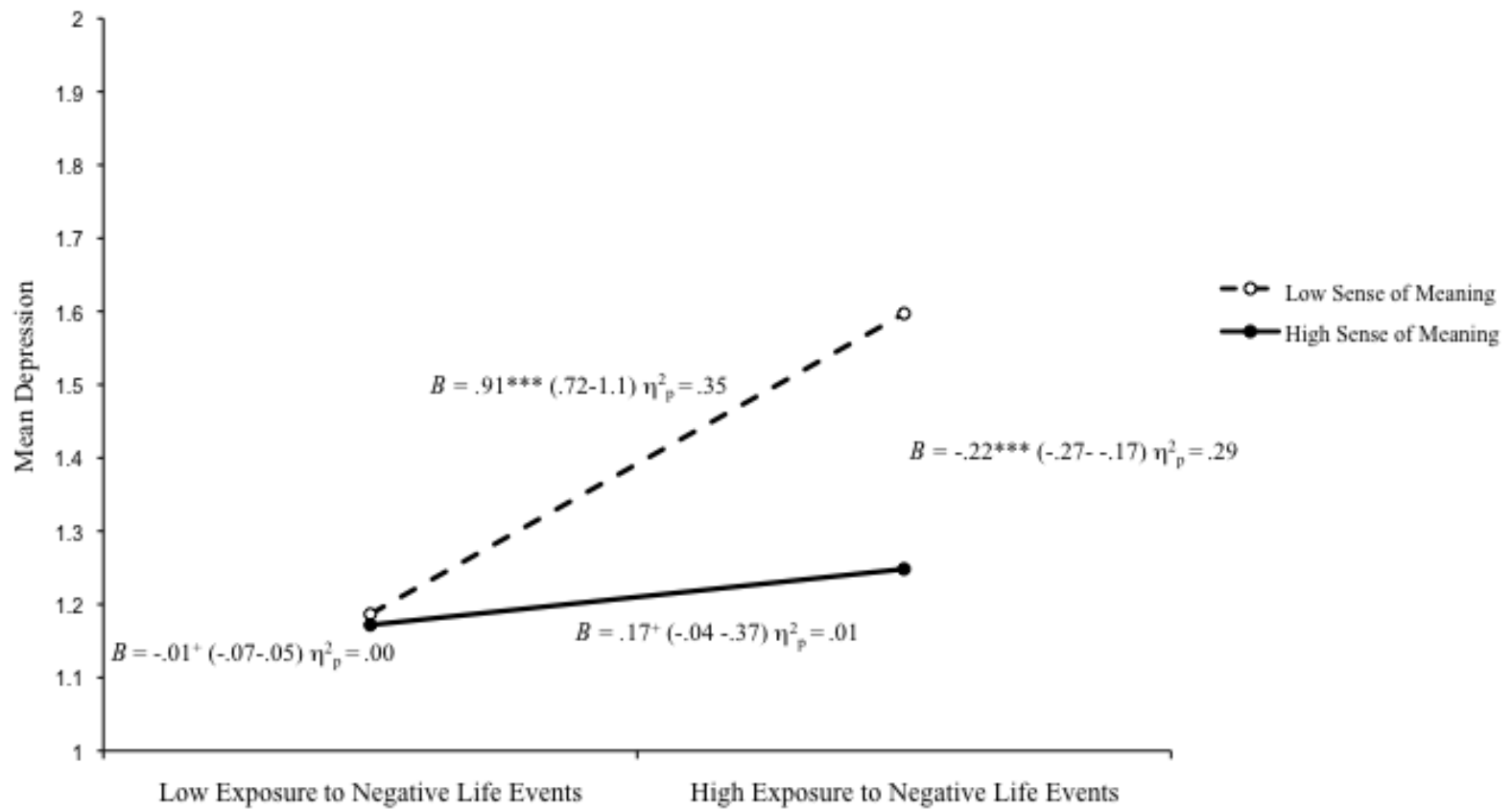
Figure 1. The interaction of sense of meaning x exposure to negative life events influences mean depression levels.

Note. $+p < .10$, $***p < .001$; parentheses following betas represent confidence intervals; degrees of freedom for each simple effects test are (1, 177).

Hypothesis IV

A linear regression analysis tested the degree to which changes in stressor meaning seeking explained changes in sense of meaning, thus evaluating Hypothesis IV that increases in stressor meaning seeking would significantly predict increased sense of meaning. While the relationship between these two variables would be possible to describe in terms of correlation, it was deemed most theoretically appropriate to use regression techniques for investigating the directional nature of Hypothesis IV. This assertion is more fully developed in detail in the corresponding Discussion section for this Hypothesis.

With both involved variables being calculated using the inclusion cutoff of two-thirds items answered, the total number of participants for this analysis was N = 179. Table 2 includes results of this analysis including B values, t values, and 95% confidence intervals. Participants' levels of stressor meaning seeking significantly positively predicted sense of meaning in life with a large effect size.

Table 2.
Stressor meaning seeking predicting sense of meaning

Variable	B	SE	t	95%CI	η^2_p
Stressor Meaning Seeking	.52***	.06	8.22	.40-.65	.28

Note. ***$p < .001$.

Hypothesis V

A second multiple regression analysis was performed to determine the independent contributions of participants' stressor meaning seeking and exposure to negative life events to levels of depression symptoms, as well as the contribution of these predictors' interaction. This analysis addressed the concepts proposed in Hypothesis V, such that stressor meaning seeking was expected to

have a negative relationship with depressive symptoms due to the positive

relationship between searching for meaning and adolescent SWB found in other

literature. Further, stressor meaning seeking was expected to moderate the

relationship between negative life events and depressive symptoms, such that this

relationship would be weaker at higher levels of stressor meaning seeking.

With each involved variable being calculated using the inclusion cutoff of

two-thirds items answered, the total number of participants for this analysis was

$N = 177$. The overall model significantly explained variance in depression

symptoms, $F(1, 173) = 46.39$, $p < .001$. Table 3 includes further results of this

analysis including B values, t values, and 95% confidence intervals. In this model,

exposure to negative life events was again found to significantly predict

depression in a positive relationship with a large effect size. There was also a

significant negative relationship main effect for stressor meaning seeking

predicting depression with a large effect size. Finally, the interaction term created

by exposure to negative life events and sense of meaning was found to

significantly negatively predict depression with a moderate-to-large effect size.

Table 3.
Negative life events and stressor meaning seeking predicting depression

Variable	B	SE	t	95%CI	η^2_p
Negative Life Events	.55***	.07	7.57	.41-.70	.25
Stressor Meaning Seeking	-.12***	.02	-5.79	-.16--.08	.16
Interaction	-.37***	.09	-4.06	-.55--.19	.09

Note. ***$p < .001$.

Due to the finding of a significant interaction effect between exposure to

negative life events and participants' stressor meaning seeking, a simple slopes

analysis was performed to further investigate the nature of this interaction. The ability of stressor meaning seeking to predict depression was tested when the negative life events variable was at one standard deviation below and above its mean. The ability of negative life events to predict depression was tested when the stressor meaning seeking variable was at one standard deviation below and above its mean.

Figure 2 displays a graphical representation of this interaction, with accompanying regression equations between the stressor meaning seeking, negative life events, and depression symptomatology variables for each combination of high and low levels of each predictor. Stressor meaning seeking was only significantly negatively related to depression at high levels of exposure to negative life events, with a large effect size. This influence disappeared at low levels of exposure to negative life events. Probing the influence of negative life events in this model, exposure to negative life events was found to significantly positively predict depression at both low levels of stressor meaning seeking, with a large effect size, and at high levels of stressor meaning seeking, with a small effect size.
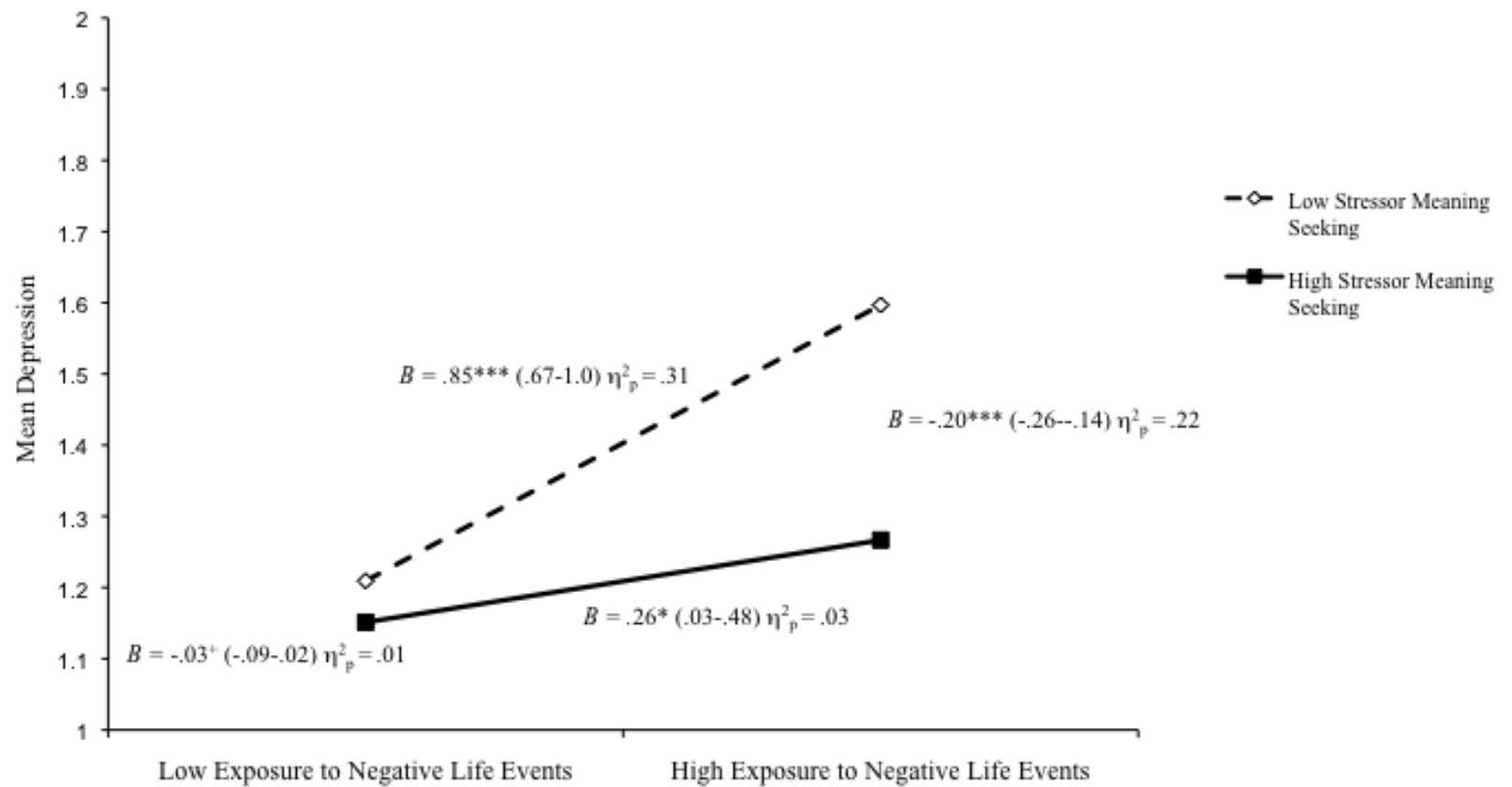
Figure 2. The interaction of stressor meaning seeking x exposure to negative life events influences mean depression levels.
Note. $+p < .10$, $*p < .05$, $***p < .001$; parentheses following betas represent confidence intervals; degrees of freedom for each simple effects test are (1, 173).

Discussion

Major Findings

      Hypotheses I, II, & III. The first multiple regression analysis supported Hypotheses I and II, such that negative life events and sense of meaning in life were found to influence depression symptoms in opposite directions. These variables also interacted to set boundary conditions under which each variable was related to changes in depression levels. The detection of this interaction allowed further investigation to determine whether the data supported Hypothesis III. Under this Hypothesis, sense of meaning was expected to attenuate the ability for negative life events to predict depression.

      This probing revealed support for Hypothesis III, such that negative life events were only relevant for depression outcomes when participants reported low levels of meaning in life. As levels of meaning in life increased to high values, negative life event exposure became unrelated to depression levels. The analysis also revealed an additional pattern that was not addressed at the hypothesis generation stage. This pattern was characterized by sense of meaning having no effect on depression symptoms when participants had a low frequency of exposure to negative life events, while sense of meaning did influence depression levels in participants who reported high exposure to negative life events.

      Given the strong literature supporting adversity as a risk factor for developing depression, particularly in a vulnerable population such as adolescents (Thapar et al., 2012), the finding of a positive relationship between depression symptoms and more frequent exposure to stressors was anticipated. The finding of

a negative relationship between sense of meaning in life and depression symptomatology in this sample adds to a growing literature for meaning in life being associated with decreased threats to subjective well-being (SWB) in adolescents. At the level of main effects, however, it is difficult to draw conclusions about the directionality of relationships.

In contrast, preliminary directional claims can be proposed in discussing the interaction between stressor exposure and present life meaning in predicting depression. It appears that meaning in life is important for protecting adolescents from developing depression in response to stress, to the extent that stress fails to predict depression symptoms if meaning in life is high. The data demonstrate the importance of meaning rather remarkably, as the ability for stressor exposure to predict increased depression becomes very strong when meaning in life is low. These analyses added an additional piece, in that meaning in life only predicts decreases in depression when there has been frequent exposure to stressors. However, it is important to note that with infrequent stressor exposure meaning may be unrelated to depression out of an absence of stressors to cope with, an absence of depressive responses developing, or both. In addition, it may be that while in low-stress conditions meaning in life does not actively operate against threats to SWB, it may still contribute to factors that directly enhance SWB.

Hypothesis IV. The results of the linear regression analysis of the supported Hypothesis IV, such that increases in stressor meaning seeking predicted increases in participants' sense of meaning in life. Since each of these variables was computed using items from the same measure, albeit different

subscales of this measure, it was necessary to consult their association to ensure
that perfect multicollinearity is not present and that these variables can indeed be
considered to represent different constructs. As Table 2 indicates, the relationship
was moderate, which is not large enough to suggest that these variables are
perfectly related.

It is useful to refer to the relevant theoretical and empirical literature to
justify the use of regression to assess the relationship between stressor meaning
seeking and sense of meaning. First, it is important to recall that stressor meaning
seeking has been conceptualized as one's tendency to search for the big-picture
meaning of a stressor, and as such variations on this trait-level variable may also
relate to one's likelihood to engage in searching for meaning in life. As reviewed,
search for meaning variables have been probed for their ability to lead to creation
of meaning in life in the established adult literature (Steger et al., 2008). Thus,
there is a precedent for investigating search for meaning as a possible predictor
for sense of meaning. While the adult literature does not indicate that searching
for meaning leads to its successful creation, developmental theory suggests that
adolescence may be seen as a time in which searching for meaning is expected
(Marcia, 1966), so it is conceivable that adolescents can gain meaning by
searching for it at a time that matches societal scripts and expectations. In line
with this theoretical framework, researchers who found a positive correlation
between searching for meaning and presence of meaning in adolescents
hypothesized that searching for meaning at this time is a meaning-making outlook
that functions similarly to, or perhaps partially facilitates, identity exploration

(Brassai et al., 2012). Thus, to offer the most direct comparison for the adult literature and to clarify whether the search for meaning may impact adolescents differently than adults, sense of meaning was regressed on stressor meaning seeking in the present analyses.

Important initial conclusions can be drawn from the finding that stressor meaning seeking predicted increased sense of meaning. Again, stressor meaning seeking is here representative of a participant's tendency to respond to a stressor, perhaps in attempt to cope with it, by orienting towards new goals and considering how the stressor could lead to good outcomes or increased knowledge. The ability for stressor meaning seeking to predict an increased sense of having meaning in life suggests that feeling connected to meaning is in some way related to being able to detach one's attention from a stressor's immediate significance and reframe it in terms of its broader abstract significance.

To the extent that stressor meaning seeking represents the search for meaning in a specific circumstance, the positive association in this sample between stressor meaning seeking and present meaning in life indicates that searching for meaning during adolescence may be related to the successful creation of life meaning for these youths, a contradictory pattern to that found in the adult literature (Steger et al., 2008). As such, this finding adds support for the developing trend in the literature for a unique orientation to meaning in adolescence.

Hypothesis V. The results of the second multiple regression analysis supported Hypothesis V, such that exposure to negative life events and stressor

meaning seeking were found to influence depression in opposite directions. These variables each affected the ability of the other to explain depression outcomes, so further analyses were completed to probe these patterns and thus address the final component of Hypothesis V. As outlined in this Hypothesis, stressor meaning seeking was hypothesized to attenuate the relationship between negative life events and depression symptomatology.

This hypothesized pattern emerged in the analysis, wherein negative life events were much more strongly predictive of depression symptoms at low levels of stressor meaning seeking than high levels of stressor meaning seeking. An additional pattern was found that had no associated hypothesis, wherein stressor meaning seeking did not impact depression symptoms in participants with low exposure to negative life events, while stressor meaning seeking was able to predict decreased depression symptoms in participants with high exposure to negative life events.

The demonstrated relevance of negative life events for predicting increases in depression in this model echoes the analogous relationship between these two variables found in the first multiple regression analysis performed. By finding this relationship in two separate models, it is possible to be more confident that the mechanism of these variables' association is not an artifact of relationships within one group of variables and accurately represents the relationship between stressor exposure and depression as demonstrated in the literature. The detected importance of stressor meaning seeking for predicting decreases in depression levels can be considered an indication that reframing a

stressor in terms of its possible positive significance may be an effective method of coping with the stressful occurrence. To the extent that stressor meaning seeking corresponds to searching for meaning, or indicates one's likelihood to engage in a search for meaning, this finding echoes trends in previous research showing that searching for meaning supports SWB. Specifically, the negative relationship between stressor meaning seeking and depressive symptoms found here agrees with previous research relating the search for meaning with a decrease in problem behaviors in youths (Brassai et al, 2012), suggesting that searching for meaning may bolster against threats to SWB.

Again, these preliminary claims of relationship directionality are better supported by interpreting interaction patterns rather than main effects. By examining the interaction between exposure to negative life events and stressor meaning seeking in predicting depression, it seems that high stressor meaning seeking reduces, but does not eliminate, the association between negative life events and depression. The attenuation effect is still noteworthy, however, as the relationship becomes much more gradual and the effect size decreases from large to small when comparing low stressor meaning seeking and high stressor meaning seeking participants. Thus, stressor meaning seeking may indeed be an effective coping strategy for encountered stressors. It should be recognized that this beneficial effect was only supported in cases of high stress, and was not observed when stressor exposure was below average, and so it may be that stressor meaning seeking is unrelated to depression at low levels of stressor exposure frequency. It is possible that this is because here there is so little stress to cope with that

depression levels are unrelated to a person's coping strategies. Additionally, the stress exposure could be low enough at these levels that it does not pose a risk factor for the development of depression symptoms.

Implications

  Theoretical implications. The interactions reviewed have theoretical ramifications for explaining the mechanism by which meaning in life and searching for meaning may influence threats to SWB, specifically the impact of stress and development of depression. In this study, both the meaning in life and stressor meaning seeking variables were demonstrated to attenuate the ability for exposure to negative life events to predict levels of depression. These findings echo emerging trends in the adolescent literature associating SWB benefits with both meaning in life (Halama & Dědová, 2007; Ho et al., 2010; Hong, 2008; Tavernier & Willoughby, 2012) and search for meaning (Bronk et al., 2009; Brassai et al., 2012). Further, in participants with lower than average stress exposure, the two meaning-related variables ceased to be related to depression, suggesting that these variables may protect against SWB threats by aiding in the stress coping process.

  Additional contributions arising from the presented analyses center around the relationships involving the stressor meaning seeking variable. By examining these relationships, the theoretical basis behind what occurs during the search for meaning may be refined. In this sample participants showed an increased sense of meaning in life associated with increases in stressor meaning seeking. It is interesting to consider how a sense of abstract life meaning may be related to the

very instance-specific tendency to consider how a stressor may be positive or significant. As suggested, individuals who are likely to respond to stressors this way may also be more likely to search for abstract meaning as well. Alternatively, stressor meaning seeking may in fact be one of many ways one can engage in a search for meaning. Rather than reframing an immediate stressor to understand its broader value, one may search for the meaning contained within long-term trends throughout their life's narrative. An individual may even use philosophical reflection in attempt to discover a basis for abstract meaning without anchoring this questioning in any event he or she has directly observed. It is conceivable that each of these methods may differ from the others in how taxing, time-consuming, successful, and useful it is, and an individual may be distinctly benefited or drained by each one depending on his/her current developmental stage.

These questions represent newly identified areas in which the literature on meaning in life is incomplete, and addressing them would elucidate how the search for meaning relates to SWB. Researchers have proposed that searching for meaning functions alongside the exploration of identity anchors during adolescence and may thus provide meaning by being a valued orientation in its own right (Brassai et al., 2012). This proposes one possible mechanism by which the benefits to searching for meaning would be unique to adolescence. Addressing the highlighted questions would additionally assist in clarifying the nature of interactions such as that found in this study between stressor meaning seeking and stressor exposure. In particular, it is possible that stressor meaning seeking was found to be associated with decreased depression in this sample

because this is an effective coping strategy for youths to utilize. It is also possible that individuals high in stressor meaning seeking were instead more likely to undergo or were currently undergoing a broad search for meaning, and that in fact this process was responsible for the observed decreases in depression symptoms.

Practical implications. The present findings represent further evidence that adolescence is a developmental period in which individuals interact with meaning in life and its pursuit in a unique way. These results additionally indicate that being in possession of life meaning and reacting to stressors by reframing them in terms of their broad significance may help in coping with exposure to stress and thereby bolster against the development of depression symptoms. Perhaps the most compelling support for this coping mechanism was the disappearance of the influence of both meaning-related variables on depression at low levels of negative life event exposure. Meaning-focused coping may thus be similarly effective in adolescents as in adults (Harris et al., 2011; Park et al., 2008; Park, 2005). This is potentially of great relevance to informing the design of interventions for adolescents at risk for psychopathology and who have been exposed to stressful or traumatic situations.

Thus far, evidence-supported interventions for increasing life meaning have involved reminiscing on and reviewing important periods of participants' lives (Westerhof et al., 2010; Westerhof et al., 2004) and exploring important relationships and orientation to crises (Cho et al., 2013). Given that many adolescents may not have a wealth of important life periods on which to reminisce, and may have a limited number of meaningful relationships, these

interventions would need to be appropriately adjusted for this age group.

Additionally, adolescents may respond positively to interventions designed to

help them initiate a search for meaning, or accomplish a combination of searching

for increased meaning while connecting with meaning they may already have.

These endeavors would by necessity be distinct from previous adult interventions

created so that the programs could encourage searching for meaning, a precarious

undertaking in adulthood, and focus on sources of meaning that may be

discovered to be particularly valued among adolescents.

Strengths and Limitations

By including multiple variables that represent threats to SWB in tandem

with multiple variables that focus on meaning from different angles, these

analyses provided the opportunity to understand how meaning in life may relate to

an individual's well-being in a more complex way. Examining the interactions

between these variables allowed for preliminary directional relationships to be

posed beyond what is often possible when using cross-sectional data. This study

supplements the existing correlational evidence for the protective influence of life

meaning in adolescence, and is among the first contributions to quantitatively

demonstrate the ability of meaning to moderate other relationships that threaten

SWB.

The primary limitations of the present study are the possible challenges to

construct validity that were introduced when creating the two meaning-related

variables by selecting items from a measure that was not primarily designed for

directly assessing meaning in life. The reported psychometric assessments were

employed to confirm the relatedness of these items, and it is encouraging that the resulting variables behaved in a way that matched the theoretical background of the constructs the variables were intended to target.

Future Directions

The findings of the present study and the broader literature it is anchored in would benefit from further research exploring how the variables created for these analyses compare to other measures that have been developed to capture levels of meaning in life, searching for meaning, and relevant outcome variables. A first step in supplementing the knowledge gained in this study would be to include direct measures of SWB to observe possible patterns of interaction between outcomes on these measures and the meaning-related variables used here. In this way, it can be better clarified how both SWB and its detractors may respond to these meaning variables. It would be appropriate for another aspect of this assessment to focus on determining how this study's stressor meaning seeking construct overlaps with and differs from the searching for meaning construct. Ideally, such a project would shed light on whether stressor meaning seeking is a way in which an individual can search for meaning, or whether it is a separate characteristic that may be related to his/her likelihood to embark on a search for meaning. As a preliminary step in this vein, it would be relevant to perform an additional analysis of the dataset collected for this study to probe for interactions between the sense of meaning and stressor meaning seeking variables in predicting depression. Such a procedure would begin to show how stressor

meaning seeking may be negatively related to depression symptoms in part by helping to establish a sense of meaning in life.

As an additional consideration for future research, it would be useful to more closely examine the way in which depression has been represented. In the current study, each participant's level of depression was determined as a composite of the frequency with which they reported experiencing specific depression symptoms. While these types of measures can be used to establish cutoff scores to split participants into groups that most likely do and do not meet the diagnostic criteria for clinical depression, this division was not performed for this project. It is important to appreciate this point, as while depression symptoms are often quantified and analyzed as though they are values of a continuous construct it is possible that above certain levels of severity, or with the presence of a clinical disorder, these symptoms interact with the stress, meaning, and meaning pursuit constructs in distinctive ways. This becomes clearer when considering that depression as a clinical disorder is often characterized by feelings of hopelessness and a loss of interest in once pleasurable activities. It could be that individuals who meet the diagnostic criteria for a major depressive episode are in fact experiencing a degradation of their sense of meaning as well, or at least their connection to it. In this case, not only would depression and meaning be negatively related but depression and loss of meaning would also be multicollinear to a degree. Thus, to clarify and account for these types of issues, examining how levels of depression relate to stress and meaning as both

continuous and categorical phenomena would constitute a line of potentially highly fruitful research.

Finally, as the body of information for the role of meaning in life in adolescence continues to grow and mature, useful knowledge can potentially be gleaned from other literatures with theoretical relevance. The research on post-traumatic growth (PTG), or the positive outcomes that sometimes arise from traumatic experiences, seems particularly important for informing the current discussion. The present study focused in part on how trait-level patterns for orienting to stress can lead to increased understanding of meaning, yet it is still unclear whether exposure to stress, while associated with negative outcomes, may actually also lead to positive outcomes by providing the opportunity for personal improvement and meaning creation.

In the adult literature, reports of PTG have been related to increased positive affect (Hamama & Sharon, 2013), increased physical well-being and decreased distress in breast cancer survivors (Ruini, Vescovelli, & Albieri, 2013), and increases in quality of life and meaning in life (Cann, Calhoun, Tedeschi, & Solomon, 2010). In youths, positive trends are only beginning to be documented, but a few encouraging studies have emerged including evidence for PTG relating to reduced emotional distress (Ickovics et al., 2006) and increased health-related behaviors (Milam, Ritt-Olsen, & Unger, 2004). These findings, in particular the evidence for a relation between PTG and meaning, highlight the need to clarify the supportive mechanism(s) in the PTG construct. If life meaning can be gained from approaching traumatic experiences from a certain perspective or at a certain

age, it may be possible to design interventions to cushion the impact of trauma by guiding individuals in a process of PTG and meaning development.

Several items in widely used PTG questionnaires, the Post-traumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) for adults and the Revised Posttraumatic Growth Inventory for Children (PTGI-C-R; Kilmer, 2009), contain language that has high surface similarity for the development of life meaning. For example, on the PTGI adult participants report on changes to "An appreciation of the value of my own life" and "A better understanding of spiritual matters" as a result of a specific crisis, and on the PTGI-C-R child participants report changes on "I know what is important to me" and "I understand how God works better" since a specific traumatic experience. Currently, these measures have been designed to assess the extent to which an individual has experienced PTG in response to a specific declared stressor. This limits extrapolation of scores on these measures to capture how the individual reacts to stressors broadly and also limits observing how this tendency might support SWB. Therefore, it would be important to investigate whether these meaning-relevant PTG items could be adapted, perhaps along with several of the SAPQ items, to more precisely measure how stressful experiences can lead to meaning.

Conclusions

The reviewed findings are the first to demonstrate meaning in life and seeking meaning from stressors as able to attenuate the impact of stress and the development of psychopathology in adolescents. This provides further evidence that adolescence is characterized by a distinctive orientation to the human need

for systems of understanding the existential ambiguities of the world. While youths are particularly vulnerable to threats to SWB, aspects of this orientation to meaning may be useful in protecting them against these threats. The relationships observed in the present study are relevant for informing theoretical models in the literature, developing interventions against trauma and psychopathology for adolescents, and identifying areas of overlap with established constructs in other literatures.

References

Achenbach, T. (1991). *Manual for the Youth Self-Report and 1991 Profile*.

Burlington, VT: University of Vermont Department of Psychiatry.

Allison, K., Burton, L., Marshall, S., Perez-Febles, A., Yarrington, J., Kirsh, L., &

Merriwether-DeVries, C. (1999). Life experiences among urban

adolescents: Examining the role of context. *Child Development, 70*, 1017-

1029.

Bohlmeijer, E., Smit, F., & Cuijpers, P. (2003). Effects of reminiscence and life

review on late-life depression: a meta-analysis. *International Journal of

Geriatric Psychiatry, 18*, 1088-1094.

Brassai, L., Piko, B., & Steger, M. (2012). Existential attitudes and Eastern

European adolescents' problem and health behaviors: Highlighting the

role of the search for meaning in life. *The Psychological Record, 62*, 719-

734.

Bronk, K., Hill, P., Lapsley, D., Talib, T., Finch, H. (2009). Purpose, hope, and

life satisfaction in three age groups. *The Journal of Positive Psychology, 4*,

500-510.

Cann, A., Calhoun, L., Tedeschi, R., & Solomon, D. (2010). Posttraumatic growth

and depreciation as independent experiences and predictors of well-being.

Journal of Loss and Trauma, 15, 151-166.

Chen, E., Miller, G., Lachman, M., Gruenewald, T., & Seeman, T. (2012).

Protective factors for adults from low-childhood socioeconomic

circumstances: The benefits of Shift-and-Persist for allostatic load. *Psychosomatic Medicine, 74*, 178-186.

Cho, S., Bernstein, K., Roh, S., & Chen, D. (2013). Logo-autobiography and its effectiveness on depressed Korean immigrant women. *Journal of Transcultural Nursing, 24*, 33-42.

Cohen, K., & Cairns, D. (2012). Is searching for meaning in life associated with reduced subjective well-being? *Confirmation and possible moderators. Journal of Happiness Studies, 13*, 313-331.

Compas, B., Davis, G., Forsythe, C., & Wagner, B. (1987). Assessment of major and daily stressful events during adolescence: The Adolescent Perceived Events Scale. *Journal of Consulting and Clinical Psychology, 55*, 534-541.

Currier, J., Holland, J., Chisty, K., & Allen, D. (2011). Meaning made following deployment in Iraq or Afghanistan: Examining unique associations with posttraumatic stress and clinical outcomes. *Journal of Traumatic Stress, 24*, 691-698.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542-575.

Durlak, J. (1972). Relationship between individual attitudes toward life and death. *Journal of Consulting and Clinical Psychology, 38*, 463.

Erikson, E. (1968). *Identity: Youth and crisis*. New York, NY: Norton.

Fontana, A., & Rosenheck, R. (2005). The role of loss of meaning in the pursuit of treatment for posttraumatic stress disorder. *Journal of Traumatic Stress, 18*, 133-136.

Frankl, V. (1959). *Man's search for meaning*. London: Hodder & Stoughton.

Grant, K., O'Koon, J., Davis, T., Roache, N., Poindexter, L., Armstrong, M., Minden, J., & McIntosh, J. (2000). Protective factors affecting low-income urban African American youth exposed to stress. *Journal of Early Adolescence, 20*, 388-417.

Halama, P., & Dědová, M. (2007). Meaning in life and hope as predictors of positive mental health: Do they explain residual variance not predicted by personality traits? *Studia Psychologica, 49*, 191-200.

Hamama, L., & Sharon, M. (2013). Posttraumatic growth and subjective well-being among caregivers of chronic patients: A preliminary study. *Journal of Happiness Studies, 14*, 1717-1737.

Harris, J. I., Erbes, C., Engdahl, B., Thuras, P., Murray-Swank, N., Grace, D., Ogden, H., Olson, R., WInskowski, A. M., Bacon, R., Malec, C., Campion, K., & Le, T. (2011). The effectiveness of a trauma-focused spiritually integrated intervention for veterans exposed to trauma. *Journal of Clinical Psychology, 67*, 425-428.

Ho, M., Cheung, F., & Cheung, S. (2010). The role of meaning in life and optimism in promoting well-being. *Personality and Individual Differences, 48*, 658-663.

Hong, L. (2008). College stress and psychological well-being: Self-transcendence meaning of life as a moderator. *College Student Journal, 42*, 531-541.

Hsieh, H., & Wang, J. (2003). Effect of reminiscence therapy on depression in

older adults: a systematic review. *International Journal of Nursing*

Studies, 40, 335-345.

Ickovics, J., Meade, C., Kershaw, T., Milan, S., Lewis, J., & Ethier, K. (2006).

Urban teens: Trauma, posttraumatic growth, and emotional distress among

female adolescents. *Journal of Consulting and Clinical Psychology, 74*,

841– 850.

Kesebir, P., & Diener, E. (2008). In pursuit of happiness. *Perspectives on*

Psychological Science, 3, 117-125.

Kessler, R. (1997). The effects of stressful life events on depression. *Annual*

Review of Psychology, 48, 191-214.

Kiang, L., & Fuligni, A. (2010). Meaning in life as a mediator of ethnic identity

and adjustment among adolescents from Latin, Asian, and European

American backgrounds. *Journal of Youth and Adolescence, 39*, 1253-

1264.

Kilmer, R., Gil-Rivas, V., Tedeschi, R., Cann, A., Calhoun, L., Buchanan, T., &

Taku, K. (2009). Use of the revised posttraumatic growth inventory for

children. *Journal of Traumatic Stress, 22*, 248-253.

King, L., Hicks, J., Krull, J., & Del Gaiso, A. (2006). Positive affect and the

experience of meaning in life. *Journal of Personality and Social*

Psychology, 90, 179-196.

King, L., & Napa, C. (1998). What makes life good? *Journal of Personality and*

Social Psychology, 75, 156-165.

Kleftaras, G., & Psarra, E. (2012). Meaning in life, psychological well-being and depressive symptomatology: A comparative study. *Psychology, 3*, 337-345.

Kovacs, M. (1992). *Children's Depression Inventory*. New York, NY: Multi-Health Systems.

Krause, N. (2004). Stressors arising in highly valued roles, meaning in life, and the physical health status of older adults. *The Journals of Gerontology: Social Sciences, 59B*, S287-S297.

Krause, N. (2007). Evaluating the stress-buffering function of meaning in life among older people. *Journal of Aging and Health, 19*, 792-812.

Lyon, D., & Younger, J. (2001). Purpose in life and depressive symptoms in persons living with HIV disease. *Journal of Nursing Scholarship, 33*, 129-133.

Marcia, J. (1966). Development and validation of ego identity status. *Journal of Personality and Social Psychology, 3*, 551–558.

Mascaro, N., & Rosen, D. (2005). Existential meaning's role in the enhancement of hope and the prevention of depressive symptoms. *Journal of Personality, 73*, 985-1014.

Mascaro, N., & Rosen, D. (2008). Assessment of existential meaning and its longitudinal relations with depression symptoms. *Journal of Social and Clinical Psychology, 27*, 576-599.

Mattison, R., Handford, H., Kales, H., Goodman, A., & McLaughlin, R. (1990). Four-year predictive value of the Children's Depression Inventory. *A Journal of Consulting and Clinical Psychology, 2*, 169-174.

Milam, J., Ritt-Olson, A., & Unger, J. (2004). Posttraumatic growth among adolescents. *Journal of Adolescent Research, 19*, 192–204.

Owens, G., Steger, M., Whitesell, Al., & Herrera, C. (2009). Posttraumatic stress disorder, guilt, depression, and meaning in life among military veterans. *Journal of Traumatic Stress, 22*, 654-657.

Park, C. (2005). Religion as a meaning-making framework in coping with life stress. *Journal of Social Issues, 61*, 707-729.

Park, C., Edmondson, D., Fenster, J., & Blank, T. (2008). Meaning making and psychological adjustment following cancer: The mediating roles of growth, life meaning, and restored just-world beliefs. *Journal of Consulting and Clinical Psychology, 76*, 863-875.

Park, N., Park, M., & Peterson, C. (2010). When is the search for meaning related to life satisfaction? *Applied Psychology: Health and Well-Being, 2*, 1-13.

Pinel, J., (2011). *Biopsychology*. Pearson Education, Inc.

Reker, G. (1977). The purpose-in-life test in an inmate population: An empirical investigation. *Journal of Clinical Psychology, 33*, 688-693.

Reker, G. & Cousins, J. (1979). Factor structure, construct validity and reliability of the Seeking of Noetic Goals (SONG) and purpose in Life (PIL) Tests. *Journal of Clinical Psychology, 35*, 85-91.

Ruini, C., Vescovelli, F., & Albieri, E. (2013). Post-traumatic growth in breast cancer survivors: New insights into its relationships with well-being and distress. *Journal of Clinical Psychology in Medical Settings, 20*, 383-391.

Scannell, E., Allen, F., & Burton, J. (2002). Meaning in life and positive and negative well-being. *North American Journal of Psychology, 4*, 93-112.

Siegel, J., & Brown, J. (1988). A prospective study of stressful circumstances, illness symptoms, and depressed mood among adolescents. *Developmental Psychology, 24*, 715-721.

Simonelli, L., Fowler, J., Maxwell, G. L., & Andersen, B. (2008). Physical sequelae and depressive symptoms in gynecologic cancer survivors: Meaning in life as a mediator. *Annals of Behavioral Medicine, 35*, 275-284.

Smucker, M., Craighead, E., Craighead, L., & Green, B. (1986). Normative and reliability data for the Children's Depression Inventory. *Journal of Abnormal Child Psychology, 14*, 25-39.

Southwick, S., Gilmartin, R., McDonough, P., & Morrissey, P. (2006). Logotherapy as an adjunctive treatment for chronic combat-related PTSD: A meaning-based intervention. *American Journal of Psychotherapy, 60*, 161-174.

Steger, M. (2009). Meaning in life. In S. J. Lopez (Ed.), *Oxford Handbook of Positive Psychology* (2nd Ed.), pp. 679–687. Oxford, UK: Oxford University Press.

Steger, M. (2012a). Experiencing meaning in life: Optimal functioning at the nexus of spirituality, psychopathology, and well-being. In P. T. P. Wong (Eds.), *The Human Quest for Meaning* (2nd Ed.), pp. 165–184. New York, NY: Routledge.

Steger, M. (2012b). Making meaning in life. *Psychological Inquiry, 23*, 381-385.

Steger, M., Kashdan, T., Sullivan, B., & Lorentz, D. (2008). Understanding the search for meaning in life: Personality, cognitive style, and the dynamic between seeking and experiencing meaning. *Journal of Personality, 76*, 199-228.

Tavernier, R., & Willoughby, T. (2012). Adolescent turning points: The association between meaning-making and psychological well-being. *Developmental Psychology, 48*, 1058-1068.

Tedeschi, R., & Calhoun, L. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*, 455-471.

Thakur, K., & Basu, S. (2010). A probe of existential meaning in depression. *Journal of Projective Psychology and Mental Health, 17*, 56-62.

Thapar, A., Collishaw, S., Pine, D., & Thapar, A. (2012). Depression in adolescence. *Lancet, 379*, 1056-1067.

Westerhof, G., Bohlmeijer, E., & Valenkamp, M. (2004). In search of meaning: A reminiscence program for older persons. *Educational Gerontology, 30*, 751-766.

Westerhof, G., Bohlmeijer, E., van Beljouw, I., & Pot, A. M. (2010).

    Improvement in personal meaning mediates the effects of a life review

    intervention on depressive symptoms in a randomized controlled trail. *The*

    Gerontologist, 50, 541-549.

Yalom, I. (1980). Existential Psychotherapy. New York: Basic Books.

Zika, S., & Chamberlain, K. (1987). Relation of hassles and personality to

    subjective well-being. *Journal of Personality and Social Psychology, 53*,

    135-162.

Zika, S., & Chamberlain, K. (1992). On the relation between meaning in life and

    psychological well-being. *British Journal of Psychology, 83*, 133-145.