

Deconstructing Depression:
A Latent Class Analysis of Potential Depressive Subtypes in Emerging Adults

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ABSTRACT

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The aim of the current investigation is to explore potential subtypes of depressive symptomatology from a phenomenological vantage point, focusing on dimensions of positive human functioning and character strengths. The study examines distinct presentational depressive symptom clusters in light of recent research on *developmental depression*—defined as depressive symptomatology that may characterize periods of major life transition, existential upheaval, and personal growth. To inductively derive clusters, unique homogeneous classes are explored across depressive and positive psychological variables within a large heterogeneous sample of 3,806 emerging adults (aged 18-25, mean = 20.0, SD = 1.9). The present investigation utilizes two latent class analysis (LCA) models, both interpreted in light of the developmental depression hypothesis. Phase I examines a LCA model containing three depressive symptomatology clusters, including mood/anhedonia, somatic, and cognitive areas of depressive functioning. Average scores on spiritual, existential, positive psychological, and relational covariate variables are examined across classes. Phase II produces a LCA model that combines salient depressive symptomatology and positive psychological variables from Phase I into a unified model. Results suggest that distinct subtypes of depression may exist throughout emerging adulthood. An interpretation of these results that supports the developmental depression hypothesis is proposed.

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DEDICATION

This dissertation is dedicated to my beautiful family.

To my wife Cynthia, thank you for your limitless love, curiosity, and playfulness through this life.

To my mama Shamaya, thank for the clear, sweet, and nurturing tenderness you've given me all along.

To my papa Chayim, thank you for the strong, grounded, and adventurous spirit you've shown me all my life, and now from *the great beyond*.

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Chapter I

INTRODUCTION

A recent examination of the diagnostic reliability of major depressive disorder (MDD) highlights the challenges we face in our current criteria and conceptualization of this disorder (Freedman et al., 2013). Unchanged in the DSM-5 from the previous DSM-IV-TR diagnostic conditions (American Psychiatric Association, 2013), the criteria for MDD were found to have low to moderate interrater reliability with a kappa score of 0.28 in both child and adult populations. This represents a substantial margin below the reliabilities of posttraumatic stress disorder and bipolar I disorder diagnoses, with kappa scores of 0.67, and 0.56, respectively (Nussbaum, 2013). Depression has been shown to have multiple subtypes, and is thought to have additional subtypes yet to be identified (Gaynes, 2009). Other mental health professionals have proposed shifting focus from purely symptomatic diagnostic criteria to a more phenomenological vantage point (Ghaemi, 2007).

Current Diagnostic Formulation of Major Depression

The present formulation of MDD in the DSM-V defines the disorder primarily in terms of observable symptomatic criteria (American Psychiatric Association, 2013). A patient may be diagnosed with MDD through his or her presentation of low affect, weight loss or gain, sleep disturbances, fatigue, challenged concentration, and other externalized symptoms. While the current diagnosis considers the patient's subjective experience of low

mood, anhedonia, and feelings of worthlessness and guilt, its criteria are primarily concrete and observable, with little emphasis on subjective elements of depression (Ghaemi, 2007).

The myriad severities, features, and comorbidities associated with clinical and subclinical depression further complicate the diagnosis of MDD and related disorders (Freedman et al., 2013). Individuals diagnosed with major depression range from severely debilitated to relatively high functioning. Two majorly depressed individuals may exhibit features that vastly differ from one another yet still receive an identical diagnosis. Major depression is comorbid with a plethora of mental health disorders. In a recent review conducted by Kessler, Merikangas, and Wang (2007), approximately 75% of individuals with lifetime MDD also met full criteria for another disorder, including 59% with one or more anxiety disorders, 32% with an impulse control disorder, and 24% with at least one substance use disorder. Another study that focused primarily on depression and anxiety comorbidity found anxiety disorders to co-occur with clinical depression in over 50% of majorly depressed patients (Fava et al., 2000). Furthermore, the presence and nature of comorbid anxiety have been found to significantly influence the differential efficacy of treatments for MDD (Fava et al., 2008). Mixed anxiety and depressive disorder has been included in the DSM-5 to account for comorbid anxious and depressive features, yet the interrater reliability for this diagnosis is effectively nonexistent ($\kappa = -0.004$) (Freedman et al., 2013). There is virtually no agreement between raters regarding this diagnosis, a significant drop below the weak interrater reliability of MDD. Because of widespread challenges and apparent flaws that hinder our conceptualization, diagnosis, and treatment of depressive disorders, a phenomenological perspective to understanding depression is thought to hold great potential value.

Subjective Experience of Depression

The experience of depression is characterized by marked shifts in perception, which has been well noted through clinical observation, self-report, and neurological imaging (Fales et al., 2008). Depression has been found to precipitate an altered sense of time, particularly the experience of time being lengthened or moving slowly (Ghaemi, 2001; Martin, 2005). Depression is frequently associated with an elevated degree of personal insight into the presence and nature of experienced affective suffering and the necessity for treatment (Amador et al., 1994; Amador & Anthony, 2004). Insight has also been found to remain intact in the domain of social functioning and the implications of one's interpersonal behavior. Finally, the depressive experience has been observed to involve a pervasive sense of existential struggle and despair—often an experience of grappling with one's place in the world, future, and overall sense of life meaning (Addis, Traux, & Jacobson, 1995; Havens & Ghaemi, 2005; Yalom, 1980). The nature of existential meaning has also been shown to be predictive of the prognosis of depression, with the absence of perceived meaning associated with greater prospective risk and depressive symptomatology (Debats, Drost, & Hansen, 1995; Mascaró & Rosen, 2005).

Depressive symptoms and major depression have been observed to coincide with various forms of existential upheaval, particularly relating to major transitions and stressful events throughout the lifespan (Kendler, Karkowski, & Prescott, 1999; Tennant, 2002; Turner, Killian, & Cain, 2004). These times are often characterized by a questioning of life meaning and purpose, existential reflection, insight, and a craving of greater understanding (Park, 2010); they commonly coincide with periods of personal development and transition, such as emerging adulthood, entering or ending a significant

romantic relationship, parenthood, midlife crisis, and adjustments in later life. Regarding the interplay between depressive symptomatology and impactful life events, Reynolds and Turner (2008) posit that “events that have significant personal meaning will be associated with increased risk for depression if not successfully resolved, and will be either unassociated with depression or predict lower depression when successfully resolved.” This suggests a developmental role of depression—a mechanism by which humans undergo struggle in search of meaning and existential resolution, and ideally emerge with greater perspective and insight.

Given empirical evidence demonstrating the co-occurrence of existential and spiritual awakening and their robust protective qualities amidst elevated risk for depression (Miller et al., 2012), we are led to investigate a shared fundamental process termed *developmental depression*—an experience of non-pathological depressive symptomatology associated with periods of major life transition, existential upheaval, and personal growth, and prompted by individuation within a spiritual dimension (Miller, 2013). Existing research on subclinical depression is crucial to our understanding of developmental depression. With findings indicating an incidence as high as 23% throughout the life span, subclinical depression appears to be a relatively normal experience throughout adolescence, emerging adulthood, and the adult lifespan, and is especially characteristic of life periods of rapid transition and growth (Fogel, Eaton, & Ford, 2006). In this way, developmental depression may be a necessary mechanism of human spiritual and existential growth. Depression and spirituality have been posited to represent “two sides of the same coin” (Miller, 2013)—perhaps the failure to effectively progress

through a life phase of depressive upheaval and growth may contribute to the onset of enduring clinical depression.

Depression in Adolescence and Emerging Adulthood

Elevated risk for the onset and intensification of major depression and depressive symptomatology during late adolescence and emerging adulthood has been well documented (Birmaher et al., 1996; Costello, Egger, & Angold, 2005; Lewinsohn, Rohde, & Seeley, 1998; Thapar, Collishaw, Pine, & Thapar, 2012). Often referred to as “sophomore slump,” approximately 25% of emerging adults experience a clinical depressive disorder, with a far higher incidence of subdiagnostic depression (Berry, 2004; Graber & Sontag, 2009; Kessler & Walters, 1998; Klerman & Weissman, 1989; Klerman, 1988; Kuwabara, Van Voorhees, Gollan, & Alexander, 2007; Lewinsohn, Shankman, Gau, & Klein, 2004). While these periods of depressive symptoms may be brief or prolonged, incidence is most concentrated around ages 18 and 19, with a steady decline after age 20, and is more prevalent in females than males throughout emerging adulthood (Galambos, Barker, & Krahn, 2006). Depressive risk is elevated by anxious and insecure adult attachment (Eng, Heimberg, Hart, Schneier, & Liebowitz, 2001; Wei, Vogel, Ku, & Zakalik, 2005; Williams & Riskind, 2004) and traumatic or stressful life experiences (Chang, 2001; Kendler, Neale, Kessler, Heath, & Eaves, 1992; Riggs & Han, 2009)—both of which are intensified amidst the emotional sensitivity and major life transitions associated with emerging adulthood.

Spiritual and Existential Development in Emerging Adulthood

Research has consistently demonstrated that adolescence and emerging adulthood are spiritually formative life periods, through the processes of questioning, exploring, and developing one’s own religiosity and spirituality (Fowler, 1981; Good & Willoughby, 2008;

Kelley, Athan, & Miller, 2007; Marcia, 1980). Utilizing descriptive latent class analyses on an international sample of 6,725 adolescents and emerging adults across eleven countries, Benson, Scales, Syvertsen, and Roehlkepartain (2012) found that 70–90% of participants endorsed high levels of personal spirituality, including the sense of a sacred universe, desire to serve, and existential searching. Beginning in the early teens, many young people embark on a journey of contemplating and developing their religious, spiritual, and existential beliefs, and ideally achieve an intricate and developed self-understanding in emerging adulthood (Braskamp, 2008).

Emerging adulthood in particular has been shown to be characterized by major shifts in personal spirituality, religiosity, and existential outlook (Arnett, 2000; Barry & Nelson, 2005; Braskamp, 2008; Hardy, Pratt, Pancer, Olsen, & Lawford, 2010; Inglehart, Díez-Medrano, Halman, & Luijkx, 2004), many of which are concomitant with physiological development. A multitude of neurological and biochemical changes, including the myelination of the prefrontal cortex, synaptic pruning, development in the limbic system, and major hormonal shifts, begin at the onset of puberty and reach completion in the early twenties (Sowell et al., 2002; Steinberg, 2005). In particular, reorganization in the prefrontal cortex, which completes in mid-emerging adulthood, imbues young adults with a greater ability to utilize metacognition and think abstractly about spiritual and existential constructs (Labouvie-Vief, 2006). Shifts in the levels of neurotransmitters and hormones controlled by the limbic system result in heightened emotional reactions to stressful stimuli (Walker, Sabuwalla, & Huot, 2004). Conversely, personal spirituality and religiosity have been shown to support effective processing, regulating, and coping with the intensified emotional reactivity associated with this life stage (Young, Cashwell, &

Shcherbakova, 2000). Koenig, McGue, and Iacono (2008), using twin studies to examine the role of genetic influences on the development of personal spirituality, found a 50% increase in the contribution of heritability during adolescence and emerging adulthood. This suggests that late adolescence and early adulthood may be genetically predisposed periods of spiritual sensitivity and accelerated development. In addition, emerging adulthood often coincides with life events that precipitate marked increases in autonomy and individualized thought, which further accelerates this process. As young adults depart from their family homes, increased personal freedom encourages exploration and development of unique perspectives on spirituality and religion (Gottlieb, Still, & Newby-Clark, 2007). Emerging adulthood also marks a dramatic increase in emotionally intimate friendships and romantic relationships (Beyers & Seiffge-Krenke, 2008), which may increase the significance of relationships and the formation of relational spirituality (Desrosiers, Kelley, & Miller, 2011).

Depression and Spirituality in Emerging Adulthood

Research suggests that adolescence is at once the gateway to spiritual awakening and window of onset for lifetime course of depression, with both prompted by puberty and perhaps sharing a single mechanism (Miller & Gur, 2002). Emerging adulthood is an opportune life stage to examine developmental depression, as it is characterized by accelerated spiritual transformation and elevated depressive risk. These two features may be developmentally linked, due to their prevalence and co-occurrence throughout emerging adulthood (Miller, 2013). To date, a large body of research has examined the linear bivariate relationship between spirituality and depression in adolescence and emerging adulthood. Findings have consistently demonstrated a protective effect of

spirituality and religiosity against depressive risk and symptomatology in emerging adults (Berry and York, 2011; Bonelli, Dew, Koenig, Rosmarin, & Vasegh, 2012; Desrosiers and Miller, 2007; Koenig, 2009; Miller, Warner, Wickramaratne, & Weissman, 1997; Miller and Gur, 2002; Regnerus, 2003; Wink, Dillon, & Larsen, 2005). An extensive review of literature conducted by Yonker, Schnabelrauch, and DeHaan (2012), comprising a meta-analysis of 76 independent studies that examined over 66,000 adolescents and emerging adults between 1990 and 2010, found a significant main effect of $-.11$ (CI $-.16, -.05$) between spirituality and depression. Interestingly, measures of intrinsic spirituality have been found to have a stronger negative association with depression than other related measures (Smith, McCullough, & Poll, 2003).

While the negative correlation between spirituality and depression has been well established across a broad range of adolescent and emerging adult populations, existing research has yet to conduct a more detailed investigation of this relationship (King & Boyatzis, 2004), one that examines intra-population subgroup variability within a diverse heterogeneous sample and the potential connection between these two features of development. It has been suggested that during adolescence and emerging adulthood, “the capacity to derive particular benefit from personal spirituality [may] co-occur with the genetic risk for depression” (Miller, 2013). This raises the question of whether spirituality and depression may be functionally linked, such that these two co-occurring propensities serve an integrated role in normal development throughout this tumultuous period of growth and upheaval.

Developmental Depression Throughout Adulthood

While existing findings suggest that emerging adulthood—characterized by rapid spiritual and existential development, major life transitions, and prevalent depressive symptomatology—is an opportune starting point to examine developmental depression, there is reason to investigate the presence of this construct, as a recurring phenomenon, across the adult lifespan. Throughout adulthood, major life events and periods of significant transition (i.e., starting or ending a marriage, beginning parenthood, midlife crisis, or mourning a loved one) are marked by identity development and existential and emotional upheaval (Aldwin & Levenson, 2001; Lachman, 2004; Lachman, Teshale, & Agrigoroaei, 2015). As in emerging adulthood, these phases are associated with elevated risk for depression as well as a range of other pathologies (Kendler, Kuhn, Vittum, Prescott, & Riley, 2005; Kessler, 1997; Tennant, 2002; Turner et al., 2004). Thus, the developmental depression framework may be valuable in understanding periods of transition, struggle, and the potential for growth and thriving throughout adulthood.

Spirituality and Positive Human Functioning

To investigate the potential relationships between depressive symptomatology, spirituality, and positive human development, it is helpful to first examine the interplay between spiritual and positive psychological characteristics. A limited body of research has been conducted on the relationship between personal spirituality and positive psychology constructs. Existing studies have found a direct association between spirituality and broad areas of psychological wellbeing and thriving (Fabricatore, Handal, & Fenzel, 2000; Falb and Pargament, 2014). In a recent latent class examination, Barton and Miller (2015) found that levels of personal spirituality and positive psychological traits coincided in 83 % of

adolescents and emerging adults. Personal spirituality, independent of religious practice, has also been directly linked to life satisfaction among adolescents and emerging adults (Marques, Lopez, & Mitchell, 2013; Kelley et al., 2007), as well as older adults (Cowlshaw, Niele, Teshuva, Browning, & Kendig, 2013; Lee, Besthorn, Bolin, & Jun, 2012; Piedmont, 2009). A positive association has been found between spirituality and forgiveness among college samples of emerging adults (Powers, Nam, Rowatt, & Hill, 2007). Spirituality has also been shown to positively correlate with gratitude, forgiveness, and empathy in older adults (Hardy, Zhang, Skalski, Melling, & Brinton, 2014; McCullough, Emmons, & Tsang, 2002). In addition, findings have suggested a positive relationship between spirituality and a wide array of psychological resiliencies (Dowling et al., 2004; Koenig, 2009; Tuck & Anderson, 2014). A systematic review of 20 recent empirical studies in this area conducted by Wong, Rew, and Slaikeu (2006) found that 90% of studies demonstrated a significant positive correlation between spirituality and mental health. This association was found to be strongest among older adolescents and emerging adults and stronger among males than among females. In particular, a direct association has been found between spiritual engagement and resilience against life stressors (Gnanaprakash, 2013; Rahmawati, 2014) and physiological stress response (Labbé & Fobes, 2010) in healthy emerging adult college samples. Spiritual wellbeing has been shown to be negatively associated with life stress and positively associated with happiness and psychological wellbeing in older adults (Rowold, 2011).

Empirical Approach to Examining Developmental Depression

The aim of the present investigation is to examine the relationships between spiritual, positive psychological, and depressive constructs throughout emerging

adulthood. In contrast to previous studies, multiple common portraits or constellations across these domains will be explored using latent class analysis (LCA) modeling. Latent homogeneous subgroups that cluster together across measures of depressive symptomatology, spirituality, existential outlook, positive psychology, and relational functioning will be examined within a large heterogeneous emerging adult population. To the author's knowledge, this is the first empirical investigation to examine potential distinct subtypes of depressive symptomatology that present during emerging adulthood using LCA.

The Current Study

The present investigation seeks to identify distinct subtypes of depression utilizing two unique waves of LCA—both converging on a unified clinical hypothesis from unique vantage points of empirical inquiry.

Phase I will investigate latent classes that emerge across three primary depression symptom clusters within a sample of emerging adult participants (aged 18-25). Precise LCA models will be developed to delineate distinct depressive classes across mood, cognitive, and somatic clusters of depressive symptoms. Likelihood of membership across classes will be examined using a selection of spiritual, existential, positive psychological, and relational covariate variables.

Phase II will investigate latent classes that emerge across a combination of the depressive symptomatology, spirituality, existential meaning, positive psychology, and relational variables that were found to be most salient in the primary LCA analysis and subsequent covariate analyses of Phase I, within the emerging adult sample. Precise LCA

models will be developed to establish distinct classes across clinical, spiritual, and positive psychological variables.

Study Aim

Across these two sections of the present study, the following empirical research questions will be investigated:

1. What distinct homogeneous profiles across the three depressive symptom cluster variables, including mood, somatic, and cognitive symptoms of depression, emerge within a diverse heterogeneous population? How do these distinct depressive symptom cluster profiles differ across a broad range of spiritual, existential, relational, and positive psychological constructs?

Hypothesis 1: It is predicted that multiple distinct profiles of elevated depressive symptomatology, comprising less than 10% of the emerging adult population, will be found. Furthermore, it is expected that while these profiles will share similar levels of experienced depressed mood and anhedonia, they will differ across the somatic and cognitive clusters of depressive symptomatology. By further examining these elevated depressive profiles across a range of spiritual, existential, relational, and positive psychological covariates, it is predicted that the profiles that are lower across somatic and cognitive depressive symptoms will be significantly higher across measures of positive functioning.

2. What common homogeneous profiles across selected measures of depressive symptomatology, spirituality, existential meaning, positive psychology, and

relational functioning, all combined into a unified LCA model, emerge within a diverse heterogeneous population?

Hypothesis 2: By combining a selection of salient measures of positive functioning and depressive symptomatology into a unified model, it is predicted that profiles with moderately elevated levels of non-mood based depressive symptomatology will be elevated across measures of positive functioning. Conversely, it is predicted that profiles with highly elevated levels of non-mood based depression will be lower across measures of positive functioning. Thus, this outcome is expected to be consistent with the predictions involving both the LCA model and subsequent covariate analyses of the first hypothesis.

Chapter II

Method

Participants

The data for this investigation were obtained through the Understand Thyself Study, a cross-sectional web-based survey study conducted at Teachers College, Columbia University. Participants were 3,806 emerging adults (aged 18–25, mean = 20.0, SD = 1.9) from a broad range of ethnic, religious, cultural, and geographic backgrounds living in the United States. Table 1 shows the demographic characteristics of the participants included in the current study.

Procedure

Emerging adult participants were recruited through a variety of methods, including professor collaboration and other means of study promotion in university settings. In building the Spirituality and Positive Psychology, University Sample, instructors and professors at universities across the United States were invited to encourage their undergraduate and graduate students to participate in the Understand Thyself Study. To incentivize participation, students received optional personalized descriptives and literature on select positive psychology and spirituality constructs from their survey and were entered in a raffle to win a \$500 Amazon.com gift card. All emerging adult participants were obtained from the Spirituality and Positive Psychology, University

Table 1. Demographics (*N* = 3,806)

Demographic Characteristics	<i>M</i>	<i>SD</i>
Age (18 – 25)	20.0	1.9
High school GPA	3.6	0.5
Undergraduate GPA	3.1	1.1
	<i>n</i>	%
Female	2,625	69.0
Sexual orientation		
Straight	2,997	78.7
Gay / Lesbian	71	1.9
Bisexual	99	2.6
Transgendered	3	0.1
Questioning	23	0.6
Other	32	0.8
Not specified	581	15.3
Ethnicity		
Caucasian	2,523	66.3
African American	189	5.0
Asian American	357	9.4
Latin American	270	7.1
Mixed / Other	464	12.2
Not specified	3	0.1
Religion		
Christian	2,723	71.6
Jewish	150	3.9
Muslim	65	1.7
Buddhist	49	1.3
Hindu	29	0.8
Other	158	4.2
Non-religious	603	15.8
Not specified	29	0.8
Personal Income		
< \$15,000	3,261	85.7
\$15,000 - \$30,000	260	6.8
\$30,000 - \$50,000	99	2.6
\$50,000 - \$75,000	62	1.6
\$75,000 - \$100,000	41	1.1
Greater than \$100,000	55	1.5
Not specified	28	0.7
Parental Income (combined)		
Less than \$15,000	125	3.3
\$15,000 - \$30,000	375	9.8
\$30,000 - \$50,000	523	13.7
\$50,000 - \$75,000	722	19.0
\$75,000 - \$100,000	766	20.1
\$100,000 - \$200,000	825	21.7
Greater than \$200,000	422	11.1
Not specified	50	1.3
Environment raised		
Urban	604	15.9
Suburban	1,849	48.6
Rural	523	13.7
Mixed	490	12.9
Not specified	340	8.9

Sample data set. These methods of participant recruitment targeted a wide range of ethnic, religious, cultural, and geographic backgrounds.

All participants completed the Understand Thyself Study, an online survey comprising positive psychology, spirituality, demographic, and mental health measures. All participants agreed to informed consent and participant rights documents prior to beginning the survey and were clearly provided the option to discontinue the study at any point. Data were collected confidentially and securely using the Qualtrics online survey platform. No paper questionnaires were used. Participants completed the survey using their own computer access at a time of their choosing. Average survey completion time was 42.5 minutes.

Assessments

Depressive symptomatology was measured using the 9-item ($\alpha = .87$) Patient Health Questionnaire (PHQ-9), which has been shown to be a reliable and valid measure of depression severity (Kroenke, Spitzer, & Williams, 2001). Participants rated how often they had been bothered by certain problems over the past two weeks on a four-point (ranging from “not at all” to “nearly every day”). Three subscores were computer based on the mood, somatic, and cognitive depressive symptom clusters that comprise the DSM-IV criteria for major depressive disorder (Pennington, 2002). The mood cluster includes two depressive symptom items (“Little interest or pleasure in doing things” and “Feeling down, depressed, or hopeless”). The somatic cluster includes four depressive symptom items (“Trouble falling or staying asleep, or sleeping too much,” “Feeling tired or having little energy,” “Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than

usual,” and “Poor appetite or overeating”). The cognitive cluster includes three depressive symptom items (“Feeling bad about yourself—or that you are a failure or have let yourself or your family down,” “Trouble concentrating on things, such as reading the newspaper or watching television,” and “Thoughts that you would be better off dead or of hurting yourself in some way”). Participants who checked off any problems were also asked to complete an additional item at the end of the questionnaire rating (“How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?” with responses ranging from “not difficult at all” to “extremely difficult”). This single item was used to assess impairment of daily functioning. This scale may be used to assess a gradient of subclinical and clinical depressive symptomatology, which is utilized in the present study.

The Brief Multidimensional Measure of Religiousness and Spirituality (FETZER) measures religiosity and spirituality across six dimensions of functioning (Fetzer Institute & National Institute on Aging Working Group, 1999). The four subscales of the Fetzer that were used in the present investigation include Daily Spiritual Experiences (items 1-6, $\alpha = .93$), Forgiveness (items 11-13, $\alpha = .87$), Positive Religious Coping (items 19-21, $\alpha = .84$), and Negative Religious Coping (items 22-24, $\alpha = .46$). Participants rated their responses on Likert-type scales, with various points depending on the nature of the question. There are 40 questions in total. The Daily Spiritual Experiences subscale measures the frequency and intensity of spiritual and transcendent experiences common to everyday life, using six items rated on a six-point Likert scale (ranging from “never or almost never” to “many time per day” on items such as “I feel deep inner peace or harmony” and “I feel God’s love for me, directly, or through others”). The Forgiveness subscale measures the extent to

which religious beliefs promote willingness to forgive ourselves and others, as well as our view of those around us as forgiving, using three items rated on a four-point Likert scale (ranging from “never” to “always or almost always” on items such as “because of my religious or spiritual beliefs I have forgiven those who hurt me” and “Because of my religious or spiritual beliefs I have forgiven myself for things that I have done wrong”). The Positive Religious Coping subscale measures the extent to which we view God or a higher power as benevolent and positive in our lives, using 3 items on a four-point Likert scale (ranging from “not at all” to “a great deal” on items such as “I look to God for strength, support, and guidance” and “I think about how my life is part of a larger spiritual force”). The Negative Religious Coping subscale measures the extent to which we view God or a higher power as harsh and punitive in our lives, using three items rated on a four-point Likert scale (ranging from “not at all” to “a great deal” on items such as “I feel God is punishing me for my sins or lack of spirituality” and “I try to make sense of the situation and decide what to do without relying on God”).

Gratitude was measured using the six-item ($\alpha = .81$) Gratitude Questionnaire (GQ-6), which has been shown to have strong psychometric properties (McCullough et al., 2002). Participants rated the extent to which they agreed or disagreed on a seven-point Likert scale (ranging from “strongly disagree” to “strongly agree” on items such as “I have so much in life to be thankful for” and “As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history”). Items three and six are reverse-scored.

General sense of optimism in life was measured using the 12-item ($\alpha = .82$) Life Optimism Test (LOT) (Scheier & Carver, 1985). Participants rated their responses on a two-

point scale (indicating “agree” or “disagree” on items such as, “In uncertain times, I usually expect the best” and “I always look on the bright side of things”). Items 3, 8, 9, and 12 are reverse coded.

Grit, or perseverance in the face of life challenges, was measured using the eight-item ($\alpha = .75$) Grit Scale (GRIT-S) (Duckworth & Quinn, 2009). Participants rated the extent to which items described their motivational characteristics on a five-point Likert scale (ranging from “not like me at all” to “very much like me” on items such as “setbacks don’t discourage me” and “I have been obsessed with a certain idea or project for a short time but later lost interest”). Items one, three, five, and six are reverse-scored.

Present sense of purpose and meaning in life, as well as an active search for purpose and meaning in life, was measured using the 10-item Meaning in Life Questionnaire (MLQ) (Steger, Frazier, Oishi, & Kaler, 2006). The questionnaire contains two subscales: Presence of Meaning, or how much an individual feels his/her life has meaning (items 1, 4, 5, 6, and 9, $\alpha = .88$) and Search for Meaning, or how much a person attempts to find meaning and insight in his/her life (items 2, 3, 7, 8, and 10, $\alpha = .89$). Participants rated the items on a 7-point Likert scale, ranging from 1-absolutely true to 7-absolutely untrue. Items included, “I understand my life’s meaning” and “I am seeking a purpose or mission for my life.” Item 9 is reverse scored.

The Spirituality Scale was used to measure beliefs, intuitions, lifestyle choices, practices, and rituals representative of human spirituality. Personal spirituality was measured using the 23-items ($\alpha = .92$) on the Spirituality Scale, which has shown to be a valid and reliable measure of human spiritual dimensions (Delaney, 2005). Participants rated the extent to which they agreed or disagreed on a 6-point Likert scale (ranging from

“strongly disagree” to “strongly agree”). The overall score (used in the present study) is comprised of four areas of spirituality, including Eco-awareness (items 6, 7, 10, 11, and 22), Relationship (items 12 and 20), Self-discovery (items 1, 2, 3, 5, 8, 13, 16, 19, and 23), and Sacredness/Higher Power (items 4, 9, 15, 18, and 21). A higher score indicates a higher level of spirituality. Items on the four areas of spirituality included, “I find meaning in my life experiences,” “I see the sacredness in everyday life,” “I live in harmony with nature,” and “I am able to receive love from others,” respectively.

Global life satisfaction, or one’s perception of his/her fulfillment with life, was measured using the five-item ($\alpha = .85$) Satisfaction with Life Scale (SwLS), which has been shown to be a valid and reliable measure (Diener, Emmons, Larson, & Griffin, 1985). Respondents answered each item on a seven-point Likert scale (ranging from “strongly disagree” to “strongly agree” on items such as “In most ways, my life is close to ideal” and “If I could live my life over, I would change nothing”).

The six-item ($\alpha = .83$) Friendship Scale was used to measure experiences of social connection versus social isolation, which has been shown to be a reliable and valid measure (Hawthorne, 2006). Participants rated the frequency of social occurrences over the past four weeks on a five-point scale (ranging from “almost always” to “not at all” on items such as “It has been easy to relate to others” and “I felt alone and friendless”). Items 1, 3, and 4 are reverse coded. A high score implies social connectedness and a score of “0” indicates social isolation.

Data Analysis

Latent class analyses (LCA) will be run using Mplus version 7.1 (Muthén & Muthén, 2013) to produce three multi-class cross-sectional models using the emerging adult sample.

In Phase I, latent classes will be derived across three primary continuous clusters of major depressive symptoms, including mood, somatic, and cognitive based symptomatology. These classes will represent distinct homogeneous subpopulations in a heterogeneous non-clinical sample of 3,966 emerging adults based in the United States. Distinct classes of functioning across these three variables will be tested simultaneously. Once a best fitting model is established, likely class assignments matched with participant ID numbers will be imported into SPSS version 22 (IBM Corp., 2013). Here, Covariate means on spiritual and existential meaning variables (daily spiritual experiences, forgiveness, positive religious coping, negative religious coping, spirituality, presence of life meaning, and search for life meaning) and positive psychology and relational variables (gratitude, life optimism, grit, life satisfaction, and friendship) will be examined across latent classes using a one-way ANOVA test, as well as a post-hoc Fisher's least significant difference (LSD) test when significant differences are found.

In Phase II, latent classes will be derived across the depressive symptom cluster, spirituality, existential outlook, positive psychology, and relational variables that emerge as most salient from the first LCA model and subsequent covariate analyses (the cognitive depression symptom cluster, spirituality, life meaning, life satisfaction, and friendship variables).

In the two LCA models produced, an increasing number of classes will be identified and evaluated in unconditional models—meaning no covariate variables will be simultaneously run in the LCA model. Relative fit of each model will be evaluated using the Bayesian information criterion (BIC), sample-size adjusted Bayesian information criterion (SABIC), Akaike information criterion (AIC) indices, as well as entropy and a careful consideration of parsimony and theoretical interpretability. This process is discussed in greater detail in the following section.

Establishing the Unconditional Models

LCA will be used to tease apart distinct phenomenological depressive patterns in relation to spiritual, existential, positive psychological and relational functioning. In establishing each of the three best-fitting models, multiple unconditional models with increasing class enumeration will be tested against one another. The criteria used in establishing the best number of classes in the final model will be evaluated based on prevailing standards in LCA; however, final class counts will ultimately rely on a consideration of parsimony and theoretical interpretability.

Nylund, Asparouhov, and Muthén (2007) argue that the bootstrap likelihood ratio test (BLRT) and Bayesian information criteria (BIC) are strong indicators of model fit. A significant BLRT result indicates that an LCA model with k classes has a significantly greater degree of model fit than a model with $k - 1$ classes, while a decrease in BIC test value indicates an increasing degree of comparative model fit. These two tests will be used to assess LCA model fit and will be rerun after increasing the number of random starts (using the LRTSTARTS function) to crosscheck model fit test reliability. Similar to the BLRT, the Lo-Mendell-Rubin test (LMR) will be used to compare a model with k classes

against a model with $k - 1$ classes. A significant p value indicates that the model with k classes offers a better fit. Similar to the BIC, the SABIC and AIC will be used to assess relative model fit, with a decreasing value indicating an increasing degree of comparative fit. Other criteria will be used to assess the model that contains the best number of classes, including convergence, entropy, class size, and posterior probabilities (Jung and Wickrama 2008). Thus, the criteria used in establishing the best number of classes in the final model will be evaluated based on prevailing standards in LCA; however, final class counts will ultimately rely on the conceptual standards of parsimony and theoretical interpretability.

Chapter III

RESULTS

Phase I Model

In the first model (Fig. 1, see Chapter IV), LCA was used to examine common subgroupings of study participants across the three depressive symptom cluster variables in the emerging adult sample. These analyses were used to derive latent classes representing distinct homogeneous subpopulations in a larger heterogeneous population. Distinct classes of functioning across these three variables were tested simultaneously.

Unconditional LCA models of ascending class enumeration were conducted on the mood, somatic, and cognitive depressive symptom cluster variables entered as predictors. As shown in Table 2, the AIC, BIC, and SABIC yielded substantially lower incremental fit indices for the five-class LCA model than the models with one through four classes. The Lo-Mendell-Rubin test indicated that the five-class model produced a significantly higher degree of model fit than the one- through four-class models, and indicated that a six-class model did not provide significantly better fit. A BLRT also indicated a superior degree of fit for the five-class model. The five-class model yielded a strong entropy value of .86 as well. Due to these indicators, and in the interest of parsimony and theoretical applicability, a five-class model was selected as the best-fitting model for the emerging adult sample.

For the five-class emerging adult model, mean normed variable scores and standard deviations across classes are displayed in Table 3 and illustrated in Fig. 1. The following

Table 2 Fit indices for latent class analysis models with 1-6 classes across 3 depression symptom clusters (mood, somatic, and cognitive) in emerging adult sample

Number of Classes	Number of Free Parameters	AIC	BIC	ABIC	Entropy	BLRT	Lo-Mendell-Rubin
1	6	-695.19	-657.72	-676.79			
2	10	-5256.41	-5193.96	-5225.74	.92	p<.001	p<.001
3	14	-6520.59	-6433.17	-6477.66	.84	p<.001	p<.001
4	18	-7059.63	-6947.23	-7004.43	.86	p<.001	p<.001
5	22	-7395.03	-7257.66	-7327.56	.86	p<.001	p<.01
6	26	-7659.75	-7497.39	-7580.01	.86	p<.001	p>.05

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ABIC = sample-size adjusted BIC; BLRT = Bootstrap likelihood ratio test. Selected model is **bolded**.

Table 3 One-way ANOVA and Fisher’s LSD post hoc paired comparisons of 3 depression symptomatology clusters (mood, somatic, and cognitive) variable means across 5 emerging adult latent classes

Depression Symptomatology Clusters	Class 1 High Depression, Higher Cognitive	Class 2 High Depression, Lower Cognitive	Class 3 Medium Depression, Higher Cognitive	Class 4 Medium Depression, Lower Cognitive	Class 5 Low Depression	F
Mood Cluster	.82 (.17) ^a	.83 (.15) ^a	.44 (.17) ^b	.38 (.16) ^c	.13 (.14) ^d	1759.54*
Somatic Cluster	.85 (.16) ^a	.76 (.15) ^b	.51 (.21) ^c	.43 (.18) ^d	.19 (.14) ^e	1279.52*
Cognitive Cluster	.78 (.12) ^a	.40 (.11) ^b	.53 (.09) ^c	.21 (.09) ^d	.04 (.06) ^e	5627.37*

Note. * = p <.001. Standard deviations appear in parentheses next to means. Means within rows with differing superscripts are significantly different at the p < .05 based on Fisher’s LSD post-hoc paired comparisons tests.

labels were assigned to the five emerging adult classes based on depressive symptomatology profiles: High Depression (higher cognitive) (class 1: a group with elevated depressive symptoms), High Depression (lower cognitive) (class 2: a group with elevated depressive symptoms, yet relatively lower cognitive depressive symptoms), Medium Depression (higher cognitive) (class 3: a group with moderately elevated depressive symptoms), Medium Depression (lower cognitive) (class 4: a group with moderately elevated depressive symptoms, yet relatively lower cognitive depressive symptoms), Low Depression (class 5: a group with relatively low depressive symptomatology).

A series of one-way ANOVA tests were run to check for significant differences between classes across the three primary variables entered into the each model. As displayed in Table 3, ANOVA tests indicated that classes varied significantly across all variables in the emerging adult sample. Post hoc analyses using LSD tests were used to examine pairwise comparisons of all class pairs across all three variables in the model. As shown in Table 2, all class pairings were significantly different from one another on all three primary variables ($p < .001$), except for classes 1 and 2 on the mood depressive symptom cluster ($p > .10$).

Finally, analyses examining variation of the eight spiritual (Fig. 2, see Chapter IV) and existential meaning (Fig. 3) variables and eight relational (Fig. 4) and positive psychological (Fig. 5) variables, across the established five-class emerging adult model, were conducted. Means were examined using one-way ANOVA tests. Scores on the daily spiritual experiences, forgiveness, positive religious coping, negative religious coping, spirituality, presence of life meaning, and search for life meaning variables were all found to be significantly different across latent classes ($F = 28.68, p < .001$; $F = 30.60, p < .001$; $F = 12.94, p < .001$; $F = 114.27, p < .001$; $F = 50.98, p < .001$; $F = 164.91, p < .001$; $F = 21.61, p < .001$). Scores on the gratitude, life optimism, grit, life satisfaction, and friendship variables were all found to be significantly different across latent classes ($F = 123.27, p < .001$; $F = 231.65, p < .001$; $F = 108.58, p < .001$; $F = 191.72, p < .001$; $F = 253.28, p < .001$).

LSD tests were used to conduct post hoc pairwise comparisons between pairs of latent classes on means of the eight spiritual and existential meaning measures (Fig. 2, 3). Among emerging adults, daily spirituality class means were significantly different between all combinations of paired classes ($p < .05$), except for classes 1 and 2, ($p > .10$).

Forgiveness class means were significantly different between all combinations of paired classes ($p < .05$), except for classes 1 and 2 and classes 2 and 3 ($p > .10$). Positive religious coping class means were significantly different between all combinations of paired classes ($p < .05$), except for classes 1 and 2, classes 2 and 3, and classes 4 and 5 ($p > .05$). Negative religious coping class means were significantly different between all combinations of paired classes ($p < .001$), except for classes 1 and 2, classes 1 and 3, and classes 2 and 3 ($p > .05$). Spirituality class means were significantly different between all combinations of paired classes ($p < .001$), except for classes 1 and 2, classes 1 and 3, and classes 2 and 3 ($p > .05$). Presence of life meaning class means were significantly different between all combinations of paired classes ($p < .001$), except for classes 2 and 3 ($p > .10$). Search for life meaning class means were significantly different between all combinations of paired classes ($p < .01$), except for classes 1 and 2, classes 1 and 3, classes 1 and 4, and classes 3 and 4 ($p > .10$).

LSD tests were used to conduct post hoc pairwise comparisons between pairs of latent classes on means of the eight relational and positive psychological measures (Fig. 4, 5). Among emerging adults, gratitude class means were significantly different between all combinations of paired classes ($p < .001$), except for classes 1 and 2, classes 1 and 3, and classes 2 and 3, ($p > .05$). Life optimism class means were significantly different between all combinations of paired classes ($p < .01$), except for classes 2 and 3 ($p > .05$). Grit class means were significantly different between all combinations of paired classes ($p < .01$), except for classes 1 and 2 ($p > .10$). Life satisfaction class means were significantly different between all combinations of paired classes ($p < .001$), except for classes 1 and 2 ($p > .05$). Friendship class means were significantly different between all combinations of paired

classes ($p < .05$). Anxious attachment class means were significantly different between all combinations of paired classes ($p < .01$), except for classes 1 and 2, classes 1 and 3, and classes 2 and 3 ($p > .10$). Avoidant attachment class means were significantly different between all combinations of paired classes ($p < .05$), except for classes 1 and 2, classes 1 and 3, classes 2 and 3 ($p > .05$).

Phase II Model

In the Phase II model (Fig. 6, see Chapter IV), LCA was used to examine common subgroupings of study participants across the cognitive depressive symptom cluster, spirituality, life meaning, life satisfaction, and friendship variables, in the emerging adult sample. These variables were selected for closer examination because of their salience in characterizing distinct emerging adult depressive profiles defined in the Phase I model. These analyses were used to derive latent classes representing distinct homogeneous subpopulations in a larger heterogeneous population. Distinct classes of functioning across these five variables were tested simultaneously.

Unconditional LCA models were conducted on the cognitive depressive symptom cluster, spirituality, life meaning, life satisfaction, and friendship variables entered as predictors in the emerging adult sample. As shown in Table 4, the AIC, BIC, and SABIC yielded substantially lower incremental fit indices for the five-class LCA model than the models with one through four classes. The Lo-Mendell-Rubin test indicated that the five-class model produced a significantly higher degree of model fit than the one- through four-class models. A BLRT also indicated a superior degree of fit for the five-class model as well. The five-class model yielded a strong entropy value of .78 as well. Due to these indicators,

Table 4 Fit indices for latent class analysis models with 1-6 classes across cognitive depression symptom cluster, total spirituality, presence of life meaning, life satisfaction, and friendship in emerging adult sample

Number of Classes	Number of Free Parameters	AIC	BIC	ABIC	Entropy	BLRT	Lo-Mendell-Rubin
1	10	-7924.18	-7861.67	-7893.45			
2	16	-11789.57	-11689.56	-11740.40	.81	p<.001	p<.001
3	22	-13017.80	-12880.28	-12950.19	.78	p<.001	p<.001
4	28	-13495.97	-13320.95	-13409.92	.81	p<.001	p>.05
5	34	-13878.80	-13666.28	-13774.31	.78	p<.001	p<.001
6	40	-14171.85	-13921.82	-14048.92	.79	p<.001	P<.05

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ABIC = sample-size Adjusted BIC; BLRT = Bootstrap likelihood ratio test. Selected model is **bolded**.

Table 5 One-way ANOVA and Fisher's LSD post hoc paired comparisons of cognitive depression symptomatology cluster and 4 spirituality and positive psychology variable means across 5 emerging adult latent classes

Variable	Class 1	Class 2	Class 3	Class 4	Class 4	F
	High Depression Low Pos. Psych.	High Depression Med. Pos. Psych.	Med. Depression, Low Pos. Psych.	Low Depression, Med. Pos. Psych.	Low Depression, High Pos. Psych.	
Cognitive Cluster	.72 (.14) ^a	.55 (.13) ^b	.29 (.11) ^c	.13 (.11) ^d	.07 (.09) ^e	2564.49*
Spirituality	.51 (.15) ^a	.69 (.13) ^b	.50 (.16) ^a	.64 (.13) ^c	.78 (.11) ^d	474.83*
Life Meaning	.29 (.17) ^a	.61 (.16) ^b	.33 (.16) ^c	.56 (.14) ^d	.80 (.12) ^e	1337.94*
Life Satisfaction	.23 (.16) ^a	.52 (.19) ^b	.29 (.16) ^c	.51 (.16) ^b	.73 (.15) ^d	837.52*
Friendship	.36 (.19) ^a	.57 (.19) ^b	.43 (.17) ^c	.65 (.16) ^d	.80 (.14) ^e	633.20*

Note. * = p <.001. Standard deviations appear in parentheses next to means. Means within rows with differing superscripts are significantly different at the p < .05 based on Fisher's LSD post-hoc paired comparisons tests.

and in the interest of parsimony and specific theoretical applicability, a five-class model was selected as the best-fitting model for the emerging adult sample.

For the five-class emerging adult model, mean normed variable scores and standard deviations across classes are displayed in Table 5 and illustrated in Fig. 6. The following labels were assigned to the five emerging adult classes based on depressive symptom cluster, spiritual and positive psychological profiles: High Depression, Low Positive Psychology (class 1: a group with elevated cognitive depressive symptoms and relatively lower spiritual, existential, and positive psychological functioning), High Depression, Medium Positive Psychology (class 2: a group with elevated cognitive depressive symptoms and moderately elevated spiritual, existential, and positive psychological

functioning), Medium Depression, Low Positive Psychology (class 3: a group with moderately elevated cognitive depressive symptoms and relatively lower spiritual, existential, and positive psychological functioning), Low Depression, Medium Positive Psychology (class 4: a group with low cognitive depressive symptoms and moderately elevated spiritual, existential, and positive psychological functioning), Low Depression, High Positive Psychology (class 5: a group with low cognitive depressive symptoms and highly elevated spiritual, existential, and positive psychological functioning).

A series of one-way analysis of variance (ANOVA) tests were run to check for significant differences between classes across the five primary variables entered into the each model. As displayed in Table 4, ANOVA tests indicated that classes varied significantly across all variables, in both the emerging and older adult samples. Post hoc analyses using LSD tests were used to examine pairwise comparisons of all class pairs across all five variables in both samples. All class pairings were significantly different from one another on all three primary variables in the emerging adult model ($p < .001$), except for classes 1 and 3 on the spirituality variable and classes 2 and 4 on the life satisfaction variable ($p > .10$).

Chapter IV

DISCUSSION

The aim of the present study is to better understand the nature of depression, through the identification of potential depressive subtypes, across a diverse sample of emerging adults. Prompting this research, an extensive 2013 examination of the diagnostic consistency of depressive disorders found markedly low inter-rater reliability among clinicians (Freedman et al., 2013; Regier et al., 2013). In part, this may be due to the wide variation of depressive experiences and the inclusion of disparate symptomatology in current formulations. A recent 2015 study of variability in presentations of major depressive disorder in a large clinical sample found 1,030 unique depressive symptomatology profiles (Fried & Nesse, 2015). The authors of this article suggest that “the substantial symptom variation among individuals who all qualify for [MDD] calls into question the status of MDD as a specific consistent syndrome and offers a potential explanation for the difficulty in documenting treatment efficacy.” To remedy these diagnostic weaknesses, it has been suggested that depression should be investigated from a phenomenological angle of inquiry (Ghaemi, 2007; Goldberg, 2010; McHugh, 2005)—one that accounts for wide ranging symptomatology, distinct profiles of depressive presentations, covarying measures of personality and character strengths, and variation in the subjective experience of depression. It has also been proposed that examination of

individual depressive symptoms and symptom clusters may be an effective approach in working towards this goal (Fried, Nesse, Zivin, Guille, & Sen, 2014; Fried & Nesse, 2015).

An emerging adult sample was selected as an ideal starting point for the current investigation due to the high prevalence of depressive symptomatology and rapid developmental shifts that characterize this life phase (Nelson & Barry, 2005). Overall, the present results evidenced potentially distinct subtypes of depression, a finding that is most notably supported by divergent scores on the cognitive symptomatology cluster. Significant variation of these depressive subgroups across a wide selection of spirituality and positive psychology variables, as well as their representation of sizeable portions of the overall sample, provides further evidence for their phenomenologically distinct nature. Inference regarding an etiological understanding of these depressive subtypes is a matter of interpretation, which will be considered in the context of existing literature and the hypothesis of developmental depression. The present findings will be explored in detail in the following sections.

Phase I

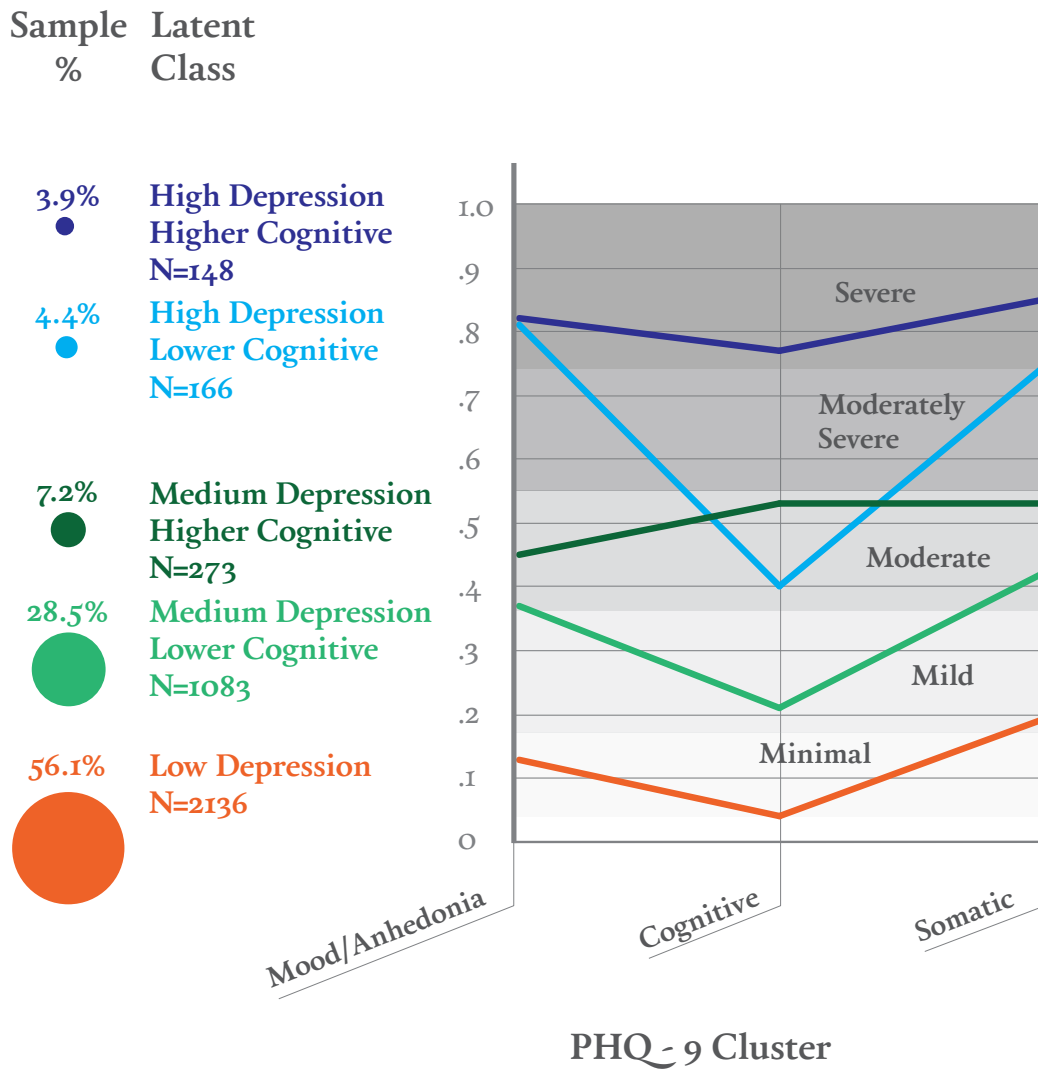
The first latent class analysis (LCA) model was designed to provide a fine-grained examination of distinct profiles of depressive symptomatology across a diverse sample of emerging adults. Using the Patient Health Questionnaire-9, which parallels the nine criteria for major depression included in the DSM-5 (American Psychiatric Association, 2013), symptoms were divided into three core symptomatology clusters—depressed mood and anhedonia, cognitive, and somatic. These clusters were selected based on previous research showing categorical similarity and internal consistency of symptoms within each grouping (Pennington, 2002). Symptom clusters were also used because an LCA model

containing all nine major depression symptoms would have limited statistical strength, parsimony, and practical interpretability. Using the five distinct classes identified in the first LCA model, covariate analyses were run to assess for significant differences across measures of spiritual, existential, positive psychological, and relational functioning. The primary aim was to gain a greater phenomenological understanding of unique cluster-based profiles of depression.

Latent Class Model

The best-fitting LCA model in Phase I (Fig. 1) contained five classes within the emerging adult sample across the depressed mood and anhedonia, cognitive, and somatic symptomatology clusters. Two of these five classes (8.3% of the sample) fell in the severe range of depressed mood and anhedonia, two classes (35.7% of the sample) were moderately elevated, and one class (56.1% of the sample) displayed minimal levels of depressed mood and anhedonic symptomatology. Assuming these severely depressed groups approximate sample rates of clinical depression, these findings approximate within two percentage points the 30-day prevalence rates of major depression typically found among emerging adult populations (Kessler & Walters, 1998). Interpreting the two classes that reported moderately depressed mood as subclinically depressed, these rates also roughly approximate previous findings on the prevalence of subthreshold depression among emerging adults (Lewinsohn et al., 2004). Finally, the 56.1% of individuals who demonstrated little to no depressive symptoms represent the majority of the emerging adult population that does not exhibit clinical or subclinical depressive symptoms at any given time. The close parallels between these results and previous findings on the prevalence of depression among adolescents and emerging adults suggest that the present

Fig. 1. Average normed scores on depressive symptomatology cluster variables among emerging adults across five latent classes (Phase I LCA model)



findings are both reliable and valid.

Severely Depressed Subgroups

The two classes that were characterized by severe depression in the depressed mood and anhedonia symptom cluster differed significantly across the cognitive and somatic symptom clusters. Specifically, one class had cognitive and somatic symptomatology levels that fell in the severe range, similar to the associated level of depressed mood. The other class experienced cognitive symptoms that dropped down to the low end of the moderate range, and somatic symptoms that fell on the border between the severe and moderately severe ranges, representing significantly lower levels in these areas than the corresponding level of reported sadness. The marked divergences between these two classes, especially in the areas of cognitive-based depression symptoms, suggest that these two profiles of severely depressed mood may represent qualitatively distinct subtypes.

It is useful to consider the specific contrasts in cognitive symptomatology between these two severely depressed mood profiles. In the Patient Health Questionnaire, the three cognitive symptoms of depression include feeling bad about one's self, particularly a self-directed sense of failure, difficulty concentrating on day-to-day activities, and suicidal ideation and thoughts of self-harm. In other formulations of cognitive depression features, symptoms also include feelings of hopelessness, helplessness, low self-esteem, shame, and guilt. The two severely depressed mood classes differ sharply across these areas, suggesting that cognitive depression symptoms may be key in understanding two potentially distinct trajectories of depression—one substantially more debilitating in areas of depressed cognition than the other.

To a significant but somewhat lesser degree, the two severely depressed mood profiles differed across the somatic depression cluster. The four somatic depression symptoms on the Patient Health Questionnaire include sleep disturbances, tiredness or low energy, decreased appetite or overeating, and psychomotor agitation or retardation. Other potential somatic features of depression include headaches and pain throughout the body, dizziness, muscle tension, and gastrointestinal problems. The same severely depressed mood class that experienced better cognitive functioning also evidenced significantly healthier somatic functioning. Thus, of the one in 12 emerging adults that suffered from severe symptoms of depressed mood and anhedonia at the time of data collection, approximately half of these individuals experienced equally severe cognitive and somatic symptoms, while the other half was significantly higher functioning in these same areas. This finding suggests that there may be two qualitatively distinct subtypes of severe depression in emerging adults—both of which may appear nearly identical in the phenomenological experience of low mood and pleasure enjoyment day-to-day. While these two subjectively experienced depressive profiles may appear similar in reported sadness and anhedonia, one group may be significantly less impaired than the other in terms of dysfunctional thought patterns and bodily ailments. It is likely these two subtypes of depression necessitate unique considerations in clinical assessment and treatment to achieve optimal therapeutic impact.

Moderately Depressed Subgroups

Upon further examination of the five cluster-based depressive profiles, it is apparent that the two moderately depressed mood and anhedonia classes follow a similar divergent pattern to the pair of severely depressed classes. Again, differences between the two

classes are most notable in the cognitive cluster of depression symptoms. This suggests that in differentiating these two divergent pathways of subdiagnostic depression, similar to their more severe counterparts, a careful consideration of cognitive depression symptoms is necessary. While the two severely depressed mood classes shared nearly identical levels of depressed mood and anhedonia, the moderately depressed class with lower cognitive depression symptoms is also slightly lower in mood and anhedonia symptoms. The difference they share in depressed mood is also nearly equal to their difference in somatic symptoms. Thus, while both cognitive and somatic depression symptoms appear to be important in distinguishing the two severe classes, it appears that only the cognitive cluster effectively differentiates the two moderately depressed groups. Thus, emerging adults experiencing moderate depression characterized by low cognitive symptoms may also be better off in the areas of mood and somatic-based depressive symptomatology.

Patterns of Depressive Symptomatology

Considering all four severely and moderately depressed groups together, the similarities between the pair of depression profiles with greater cognitive depression symptoms and the pair with relatively lower cognitive symptoms are clearly visible. The cognitive domains in both profiles that are relatively impaired fall in the same Patient Health Questionnaire severity ranges as the associated mood and somatic symptom clusters. In contrast, the other two profiles exhibit levels of cognitive symptomatology that fall one or two symptom severity ranges below their associated levels of depressed mood and anhedonia. The striking parallels between these two pairs of depressive profiles support the hypothesis of multiple distinct subtypes of depression in emerging adults. The convergent validity evidenced by the severely and moderately depressed “low-cognitive”

profiles suggests that cognitive symptom severity may be a key identifier of depressive subtype.

Non-Depressed Subgroup

The fifth and final latent profile represents the majority of the emerging adult population, which exhibits little to no depressive symptomatology. This group is characterized by mood and anhedonia symptoms that fall in the minimal range of depression severity. Similarly, this group has cognitive depression symptoms in the minimal range and somatic symptoms at the bottom end of the mild depression severity range. Representing 56% of participants included in the present analyses, this low symptom profile suggests that at any point in time, the majority of emerging adults experience little to no features of depression. Similar to the rates of clinical and subclinical depression among emerging adults, these findings align with previously established rates of non-depressed individuals during this life stage (Kessler & Walters, 1998; Lewinsohn et al., 2004).

The five depression cluster profiles that emerged in the best fitting latent class model suggest that previous assumptions about the singular nature of major depression may be over simplified. This limited perspective, which fails to account for multiple distinct subtypes of depression, may explain recent findings of markedly low levels of inter-rater reliability that accompany depressive disorders. Furthermore, the presence of potentially distinct subtypes of depression suggests a need for unique methods of evaluation and treatment to achieve greater clinical accuracy and efficacy.

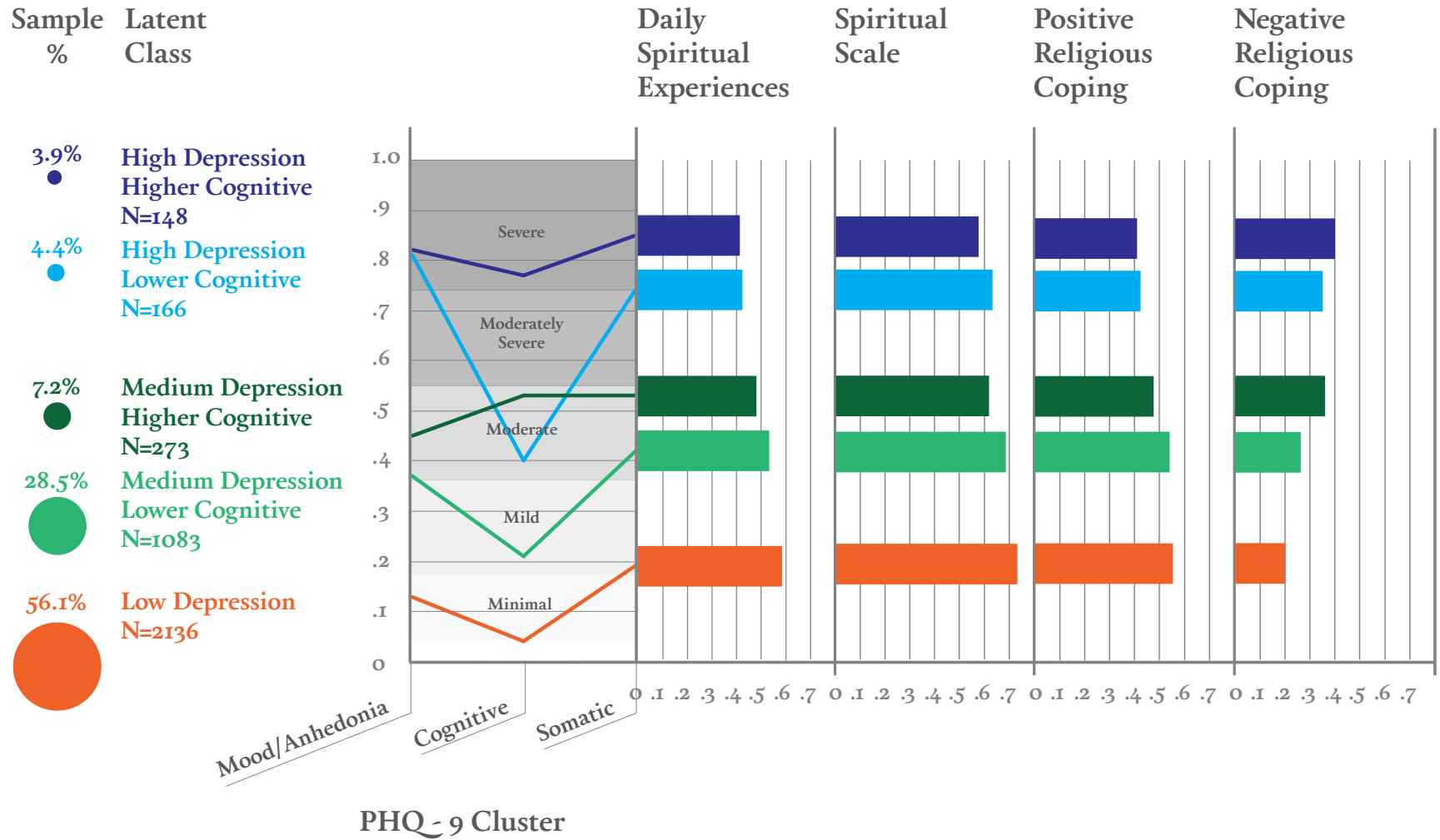
Spiritual Functioning of Subgroups

To further understand these unique depression profiles phenomenologically, a selection of spiritual, existential, positive psychological, and relational covariates were examined across latent classes. Multiple assessments of spirituality were used to perform a comprehensive examination of differences between depressive symptom groups (Fig. 2). The Daily Spiritual Experiences Scale provided an examination of theistic and religious based spirituality, while the Spirituality Scale offered a measure of universal spirituality, not predicated on the belief in a higher power or identification with an organized religion. Individuals who endorsed moderate levels of depressed mood and anhedonia, yet relatively lower levels of cognitive symptoms, were found to have significantly higher levels of theistic and universal spirituality than their cognitively depressed counterparts. Cognitively resilient individuals who reported severe levels of depressed mood were characterized by similar levels of both universal spirituality and theistic spirituality as their cognitively depressed counterparts.

The two Religious Coping measures, which assessed the presence of positive and negative attachment styles in relation to one's higher power, indicated that cognitively resilient moderately depressed individuals were more likely to view their higher power as more caring and protective and less harsh and critical than cognitively depressed individuals. Among individuals reporting severely depressed mood, there were no differences across the religious coping measures between the cognitively resilient and cognitively depressed groups.

Aside from representing a symptomatically distinct profile of depressed functioning, the cognitively resilient group of moderately depressed individuals is characterized by

Fig. 2. Average normed scores on spirituality variables by class assignment among emerging adults

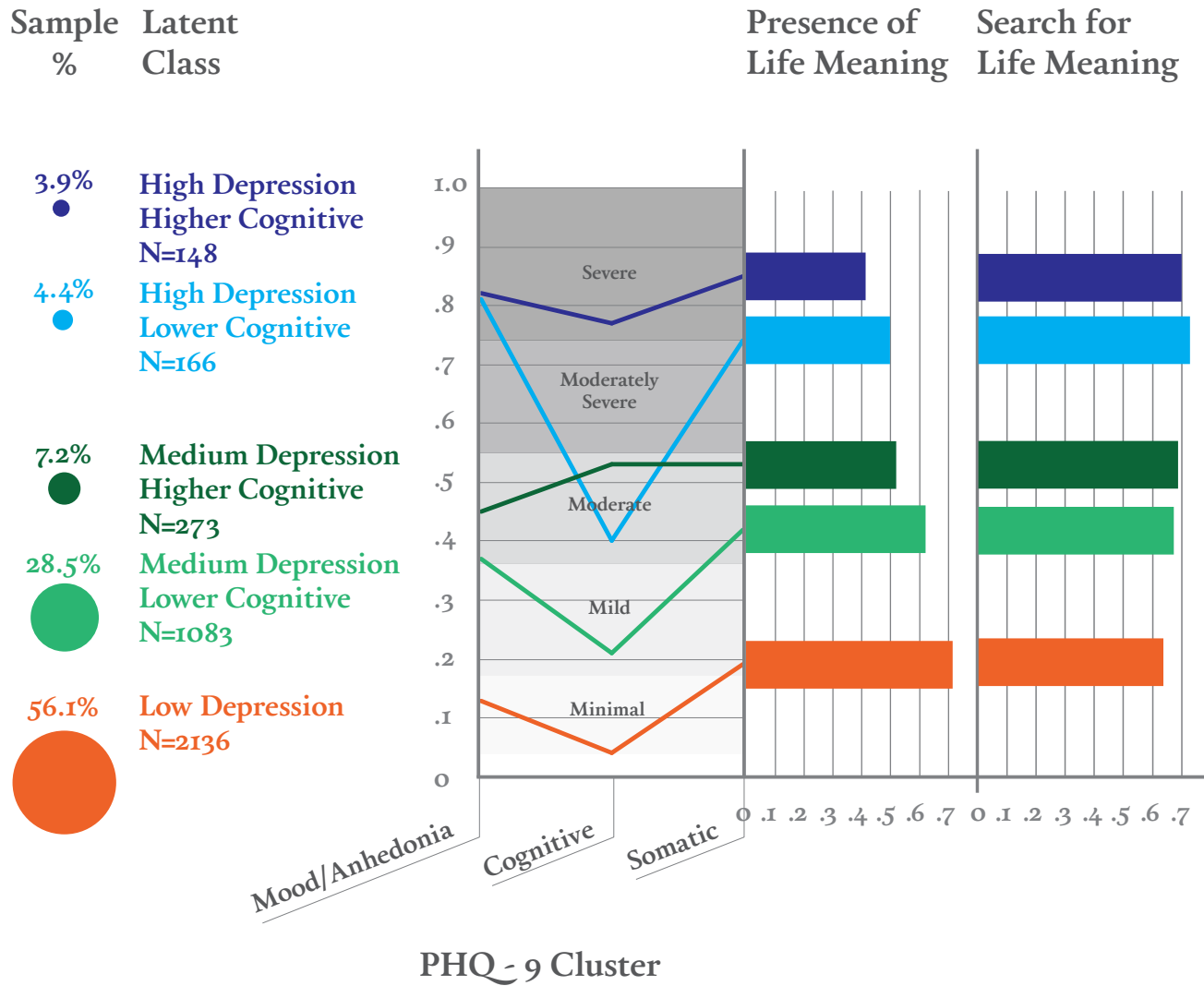


higher levels of personal spirituality. This suggests that the depressed mood and anhedonic symptoms experienced by this group, which are nearly as high as their cognitively depressed counterparts, are less debilitating of phenomenological aspects of theistic, universal, and relational spirituality. While a similar pattern is observable between the two severely depressed groups, reported differences across spiritual covariates are smaller and only meaningful at a trend level. The two cognitively resilient groups may be hypothesized as undergoing a deepening of spiritual engagement in the midst of, or even assisted by, depressive symptoms. These results align with previous findings that religious coping is associated with lower cognitive symptoms of depression (Koenig et al., 1995). These divergences in spiritual functioning suggest the moderately depressed, cognitively resilient group, in particular, may represent a subdiagnostic depressive subtype that is developmentally normative and common among emerging adults.

Existential Functioning of Subgroups

In addition to these phenomenological differences in spirituality, existential functioning was assessed and found to differ significantly across the five depressive clusters (Fig. 3). Participants reported the degree to which they viewed themselves as having attained an existing sense of life meaning as well as being in the midst of an active search for greater life meaning. Both moderately and highly depressed individuals who exhibited cognitive resilience showed significantly higher levels of attained life meaning than each respective cognitively depressed group, while the non-depressed group was higher than all four depressed groups by a sizeable margin. Interestingly, neither of the cognitively resilient groups reported being in the midst of a more focused and purposeful

Fig. 3. Average normed scores on existential meaning variables by class assignment among emerging adults



search for life meaning than the other two respective depressed groups. The cognitively resilient severely depressed group was the highest overall in this measure, while non-depressed individuals were significantly lower than all others.

While the present study is cross-sectional, these findings may be considered developmentally. First, it may be hypothesized that individuals with a more developed sense of existential engagement who become depressed during emerging adulthood may experience greater cognitive resilience. These individuals may be understood as less susceptible to hopeless and self-defeating thought patterns due to their strong sense of personal meaning. This interpretation is supported by previous longitudinal findings that young adults with a greater sense of life meaning are at lower risk for future depression, particularly cognitive depression symptoms such as hopelessness (Mascaro & Rosen, 2005). Alternatively, it may be hypothesized that emerging adults who are experiencing cognitively resilient depression are emerging from a process of developing a greater sense of life meaning. From this perspective, depressed mood may be hypothesized as co-occurring with a process of developing a personal sense of meaning or serving as a mechanism through which a greater sense of meaning is attained. The finding that an active search for meaning in one's life is relatively highest among cognitively resilient emerging adults experiencing severe depression than all others may suggest that this depressive subtype is associated with a grappling and struggle for expanded existential engagement. The opposite appears to be true for the non-depression sample majority.

Positive Psychological Functioning of Subgroups

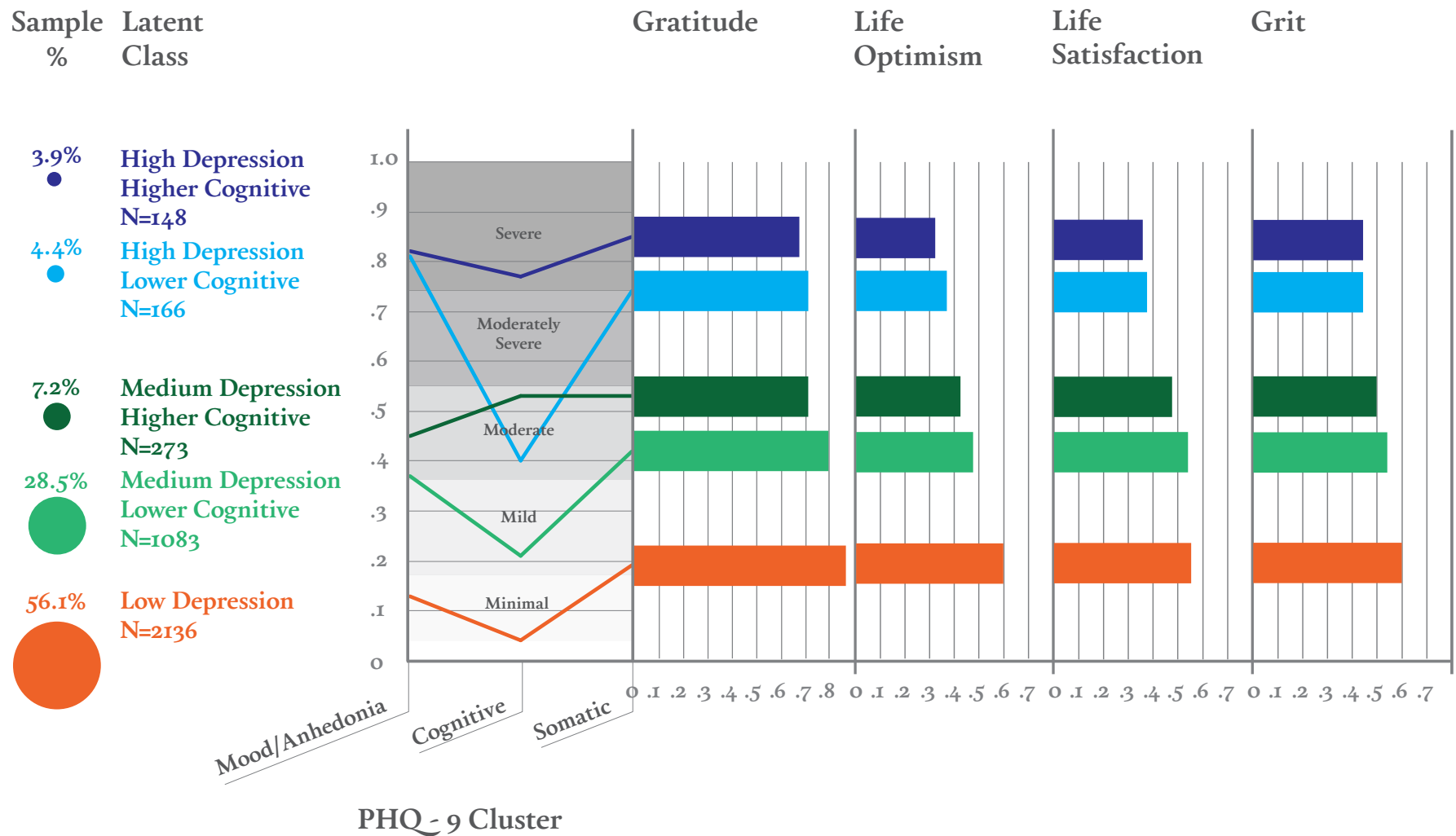
In addition to examining spiritual and existential areas of positive human functioning, four foundational measures of positive psychological characteristics were used

to understand differences across the five depressive cluster profiles (Fig. 4). Gratitude was assessed to examine differences between groups in experienced appreciation for one's self, social relationships, and life as a whole. Findings indicated that, similar to the previous findings on spirituality and existential life meaning, the cognitively resilient moderately depressed group was significantly higher in gratitude than the moderately cognitively depressed group, while the severely depressed cognitively resilient group was more grateful than the other severely depressed group at a trend level. The non-depressed majority of the emerging adult sample reported significantly higher gratitude than all others.

Life optimism was assessed to understand an individual's degree of positive outlook for future events and reported ability to manifest desirable life outcomes. Life satisfaction was examined to determine current levels of contentment and fulfillment day to day. Low personal outlook in these two areas have been shown to be strongly associated with both subclinical and major depression (Koivumaa-Honkanen, Kaprio, Honkanen, Viinamäki, & Koskenvuo, 2004; Peleg, Barak, Harel, Rochberg, & Hoofien, 2009; Sha, 2006). Life optimism was found to be significantly different across both pairs of depressed groups, with the two cognitively resilient depressed groups exhibiting healthier positive functioning than the other two. The non-depressed sample was found to be significantly higher in life optimism than the four depressive groups. Like gratitude, life satisfaction was found to significantly differ only in the moderate range of depression, with moderately depressed cognitively resilient individuals outperforming their cognitively depressed counterparts, and the non-depressed sample performing above all others.

Fig. 4. Average normed scores on positive psychological variables by class assignment among emerging adults

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Grit was measured to examine differential levels of motivation, perseverance, and commitment in working towards challenging life goals—an area that is often disrupted in the midst of a depressive episode, particularly during emerging adulthood (Gonzalez, Reynolds & Skewes, 2011). While individuals who were cognitively resilient in the face of moderate depression were functionally grittier than their moderately depressed counterparts, and both these groups were significantly higher than the two severely depressed groups, there were no significant differences in grit between the two severely depressed groups.

Similar to the spiritual and existential variations we have observed, there are notable differences in positive psychological characteristics across the five depressive cluster profiles. Individuals who experienced depressed mood, but relatively few of the harsh cognitive symptoms often linked to depression, simultaneously experienced more gratitude, optimism, and satisfaction in their lives. These findings extend the benefits associated with cognitive resilience to three core areas of cognitive wellbeing. Daily experiences of gratitude have been found to carry strong protective effects, as well as promote higher levels of psychological health and functioning, specifically among young adults (Chaudhary & Chaudhary, 2014; Ma, Kibler, & Sly, 2013; Rosmarin, Krumrei, & Pargament, 2010). Life optimism and satisfaction are in direct contrast to symptoms of enduring hopelessness and anhedonia, often associated with clinical depression. These findings suggest that the cognitively resilient depressed groups delineated in this study may be phenomenologically distinct from one another, and particularly from the depressed groups characterized by elevated depressive symptoms across all three depressive clusters.

Prior investigations and formulations of depression have neglected to consider positive character strengths in understanding the unique nature, subjective experience, and prognosis of various depressive presentations. Here we are beginning to see that all depression may not be accurately lumped into one diagnostic conceptualization. By erroneously combining phenomenologically distinct presentations of depression, we may be ignoring diagnostic and therapeutic factors that are crucial to the effective treatment of depression. Furthermore, we may be failing to recognize the immense value of positive growth potentials and personal character strengths associated with particular subtypes of depressed mood.

In addition to the measures of positive outlook examined above, grit helps us begin to understand variations in experienced personal efficacy and productivity. Because both severely depressed groups were similarly hindered in their sense of perseverance, it appears that cognitive resilience fails to promote higher productive functioning in the face of severely depressed mood and anhedonia. The higher reported levels of personal grit among cognitively resilient individuals experiencing moderately, but not severely, depressed affect suggests that cognitive resilience may support attributes of motivation and self-discipline in daily functioning, but only up to a specific threshold of depressed mood severity.

Relational Functioning of Subgroups

Major depression, as well as subclinical depression, is known to substantially hinder social connection, satisfaction, and intimacy, particularly among emerging adult populations (Bosc, 2000; Mason et al., 2004; Segrin, Powell, Givertz, & Brackin, 2003). For this reason, relational functioning was deemed an important area in differentiating

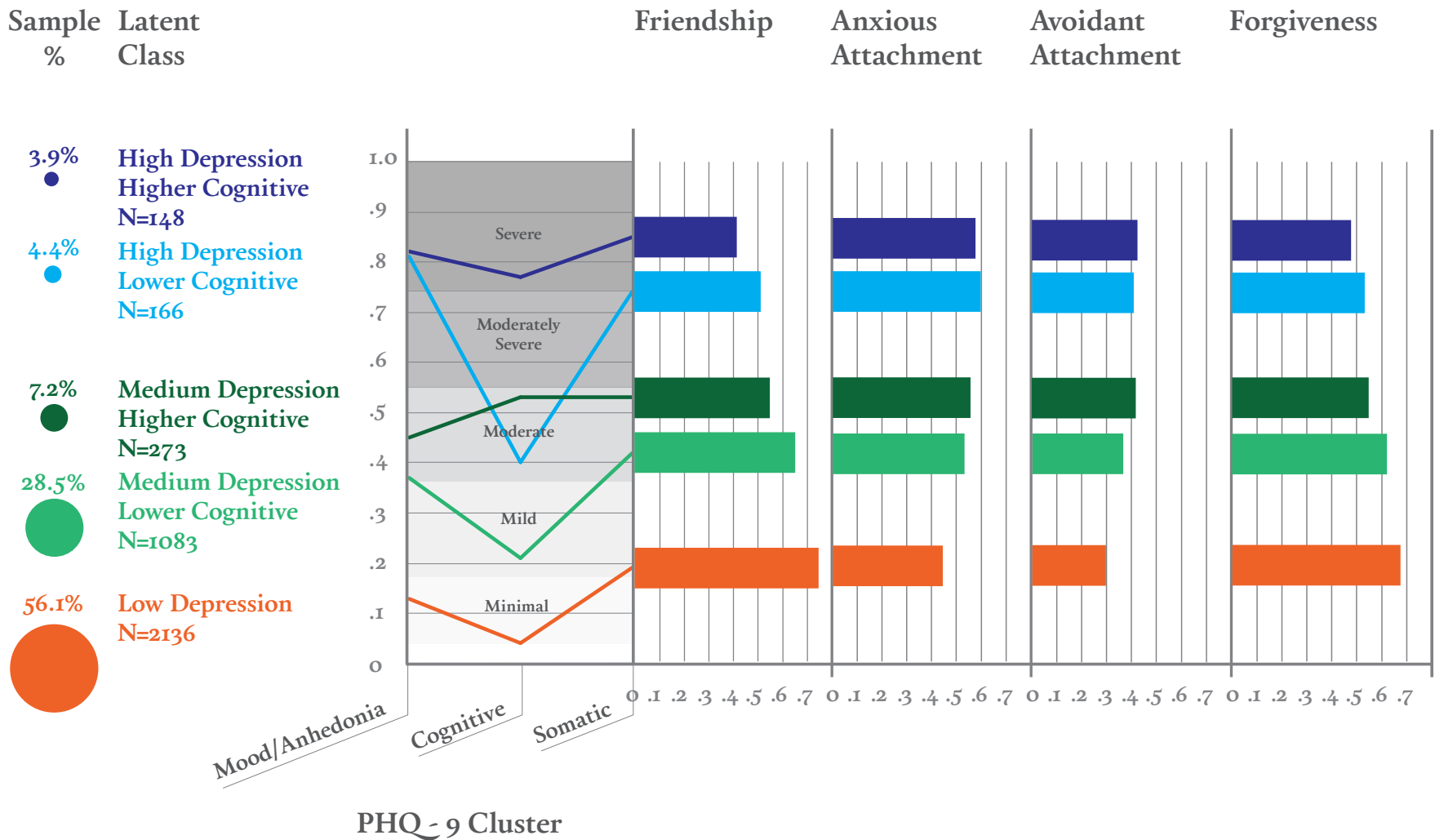
depressive subtypes. Highly pronounced differences in reported platonic social connection and satisfaction were found across depressive symptomatology profiles (Fig. 5). Similar to the covariate patterns found previously, moderately and severely depressed cognitively resilient individuals reported far greater friendship satisfaction than their cognitively depressed peers. As was expected, non-depressed individuals endorsed the highest friendship satisfaction by a substantial margin. It should be noted that the magnitude of differences in perceived quality of friendships and social support, between the cognitively resilient and depressed groups, are larger than those of any other covariate included in the present analyses.

Friendship satisfaction appears to be a fundamental domain in understanding phenomenological distinctions between the cognitively resilient and depressed groups. Because formulations of major depression and other depressive disorders have long been characterized by social isolation, dysfunction, and frustration, the finding that the cognitively resilient severely depressed group experienced substantially healthier social functioning than other severely depressed individuals is particularly compelling. Paired with the finding of significantly higher friendship satisfaction among the moderately depressed cognitively resilient group, it may be hypothesized that cognitive resilience ameliorates the negative social impact of elevated depression, regardless of its severity. Alternatively, it may be hypothesized that the cognitively resilient depressive subtypes are qualitatively unique from other depressive subtypes due to their elevated social functioning and resilience.

Assessment of anxious and avoidant attachment styles in the context of intimate romantic relationships further elucidated variations in relational functioning across

Fig. 5. Average normed scores on relational variables by class assignment among emerging adults

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depressive subtypes. The strong association between depression and insecure attachment styles has been well established in prior research (Bifulco, Moran, Ball, & Bernazzani, 2002; Shaver, Schachner, & Mikulincer, 2005). There was no meaningful variation in anxious or avoidant attachment between the two severely depressed groups. There were, however, significant differences in both measures of attachment between the two moderately depressed groups, such that the cognitively resilient group was lower in anxious and avoidant attachment than the cognitively depressed group. As predicted, the non-depressed majority was significantly lower in both anxious and avoidant attachment than all other groups by a wide margin.

The Forgiveness measure, used to assess the extent to which individuals are able to forgive themselves and others, as well as feel forgiven by others and a higher power, yielded similar findings—severely depressed cognitively resilient individuals were no different than other severely depressed individuals, while moderately depressed cognitively resilient individuals were significantly higher in forgiveness than the moderately cognitively depressed group. The non-depressed sample majority was significantly higher in forgiveness than all depressed groups.

While both cognitively resilient depressed groups were significantly better off in terms of platonic friendship satisfaction, only the moderately depressed cognitively resilient group demonstrated healthier attachment styles in relation to romantic partners, as well as higher levels of forgiveness. This suggests that cognitive resilience may be supportive of healthy intimate relationships and forgiveness in the context of moderate but not severe depression. Alternatively, this finding may be interpreted as indicating that individuals with healthier lifelong attachment styles, and greater ability to forgive and

internalize forgiveness are less likely to experience severe depression, as well as cognitive depression symptoms. Regardless of the directionality of this interpretation, cognitive resilience in the face of moderate depression symptoms is associated with greater emotional closeness, security, satisfaction, and forgiveness within romantic relationships and platonic friendships.

Phase II

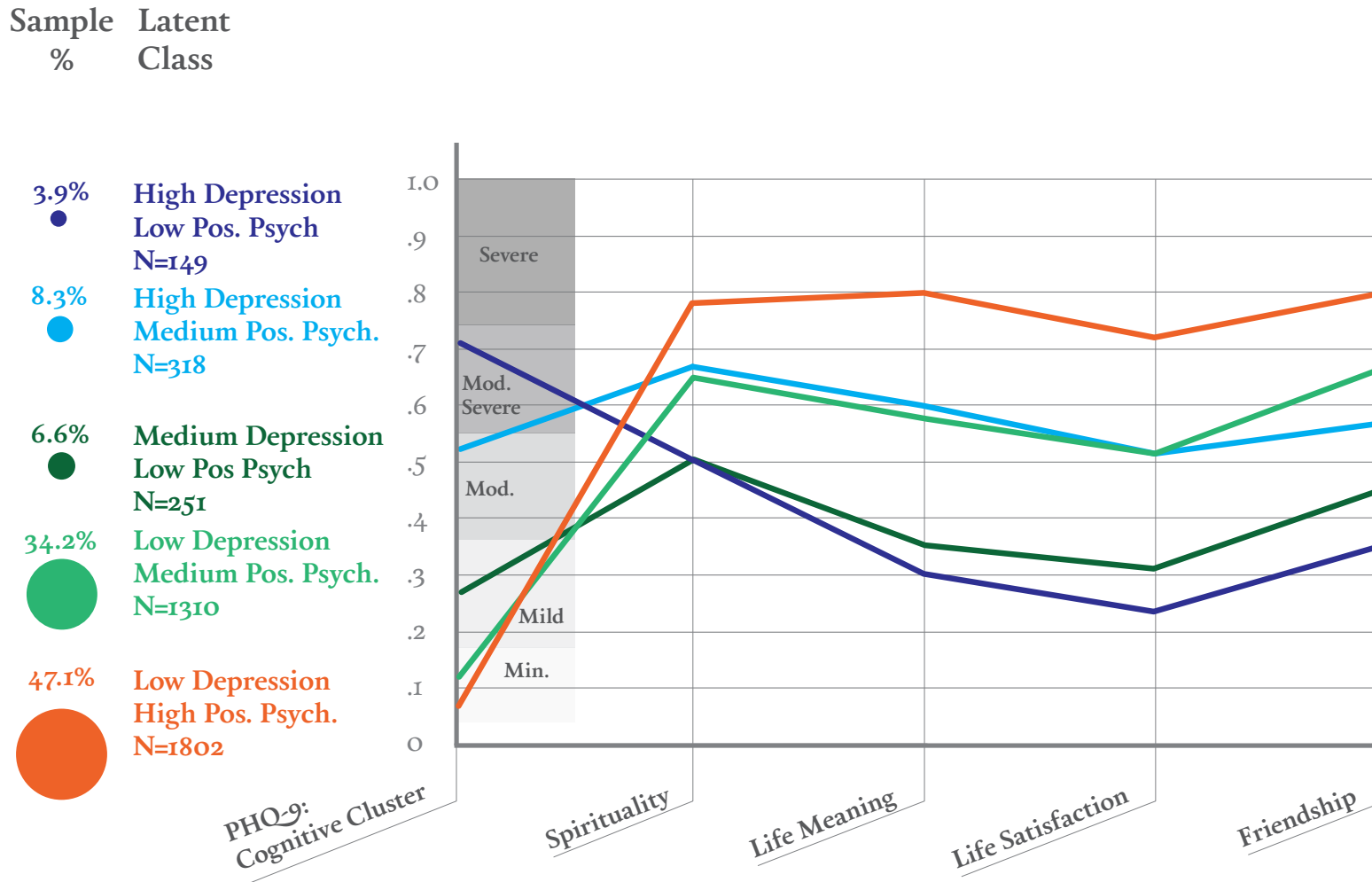
Phase II of the present study analyzed a second latent class model, which contained depression symptomatology and positive functioning variables that emerged as salient in the Phase I analyses (Fig. 6). Because the cognitive depressive symptom cluster was found to be an important differentiator of depression profiles, it was included as a key variable in the second model. Drawing from the prominent positive functioning covariates, the spirituality scale, presence of life meaning, life satisfaction, and friendship variables were included in this model as well. These four variables were selected due to having pronounced variance across depression profiles and representing the spiritual, existential, positive psychological, and relational domains of positive functioning. In Phase II, the unified latent class model containing these five variables was used to investigate the primary hypotheses of the present study from a second angle of statistical inquiry.

Unified Latent Class Model

Similar to the Phase I model, the best fitting latent class model in Phase II contained five distinct profiles of depressive and positive functioning. Of these profiles, one fell in the moderately severe range of cognitive depressive symptomatology, one in the moderate range, one in the mild range, and two in the minimal range of cognitive symptom severity. As was expected, the moderately severe cognitive symptom group, which represented

Fig. 6. Average normed scores on cognitive depressive symptomatology cluster, spiritual, positive psychological, and relational variables among emerging adults across five latent classes (Phase II LCA model)

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3.9% of the emerging adult sample, was characterized by the lowest overall positive functioning scores—particularly in the areas of life and friendship satisfaction and present sense of life meaning. This profile may be viewed as representing the high cognitive depression profile in the Phase I model—both represent 3.9% of the total sample and have similar levels of cognitive depression symptoms and low positive functioning. The moderate cognitive symptom profile, which accounted for 8.3% of the sample, was found to have elevated positive functioning. Though it contains slightly more of the study's sample, this profile may be understood as representing the high depression cognitively resilient profile in Phase I. The mild cognitive symptom group, which contained 6.6% of the sample, exhibited the second lowest positive functioning scores—only a small step above those of the moderately severe cognitive symptom profile. This class may be interpreted as representing the moderately cognitively depressed group in Phase I. Both classes were characterized by mild to moderate cognitive symptoms and low positive functioning, and contained approximately 7% of the sample. The two minimal cognitive depression symptom groups represent a total of 81.3% of the emerging adult sample. One of these two classes, which includes 34.2% of the sample, received high positive functioning scores—nearly identical to those of the moderately depressed cognitively resilient group in Phase I. Both groups have low cognitive depression symptoms, notably elevated positive functioning, and account for approximately one-third of the sample. The other minimal cognitive symptom profile, which accounts for 47.1% of the sample, exhibited substantially higher positive functioning than the other four groups in the Phase II model. This class parallels the non-depressed group in Phase I. Both groups have very low depressive symptomatology, the highest overall positive functioning, and account for approximately

one-half of the sample. The findings of the Phase II model provide converging validity for the results of Phase I and offer further evidence of the presence of phenomenologically distinct subtypes of depression in emerging adults.

Etiological Interpretations

Due to the cross-sectional nature of the current examination, there are multiple interpretations of the converging findings of Phases I and II. Three potential perspectives will be offered in the present discussion: (1) A *pre-existing resilience* interpretation suggests that emerging adults who are already elevated on spiritual and positive psychological attributes may experience milder cognitive disruptions when moderate or severe depression knocks. This perspective posits that various protective factors and characterological strengths explain the mitigated depressive symptomatology experienced by two of the four depressed groups. (2) A *longitudinal phase* interpretation proposes that emerging adults may experience all five “phases” of depression at various times throughout early adulthood. This interpretation would indicate that the percentages of the present sample that landed in each subgroup of depressive functioning at the cross-section of data collection represent the average portion of time emerging adults spend in each respective phase throughout development. (3) A *developmental depression* interpretation hypothesizes that *low-cognitive depression*, whether accompanied by moderately or severely depressed mood, is a distinct subset of depression that is associated with high spiritual and positive psychological functioning and life phases of rapid personal development. This perspective suggests that developmental depression is a normative aspect of development in emerging adults, or potentially a mechanism through which healthy development occurs (Miller 2013; Miller & Barton, 2015).

It should be noted that these three etiological interpretations are by no means mutually exclusive. Factors of pre-existing resilience likely influence the nature and severity of depressive phases that occur throughout emerging adulthood. Similarly, pre-existing resiliencies likely predict the occurrence of developmental depression, as opposed to depression that is more disruptive and debilitating in nature. Finally, a longitudinal phase perspective of depressive subtypes may help inform our understanding of developmental depression. Young adults may experience phases of both clinical and developmental depression at different times throughout emerging adulthood. A progression from clinical to developmental depressive features may represent a normative maturation process through which struggle, insight, and growth occurs.

Clinical Implications

The current DSM-5 formulation of major depression has been criticized for lumping a wide range of depressive presentations into a single diagnosis, and thusly indicating that disparate depressive symptomatology should receive similar assessment and treatment (Fried & Nesse, 2015; Paris, 2014). The present findings support the hypothesis that emerging adult presentations of depressive symptomatology should be examined phenomenologically to assess for potential subtype variations. This requires that clinicians encourage patients to share their unique and subjective experiences of depression in order to make an accurate and informed assessment. Along with the more readily observable behavioral and affective features currently used in the DSM-5 to assess major depression, dysthymia, and other depressive disorders, a comprehensive assessment of depressive functioning should examine personal character strengths across myriad domains of positive functioning.

The benefits of elucidating personal strengths and resiliencies in assessing depression are two fold. First, unique personal strengths and resiliencies are often overlooked in prevalent treatment modalities. Utilizing these positive psychological attributes, in contrast to treatment that is purely symptom focused, may offer powerful tools and interventions to guide emerging adult patients through periods of depression. In addition, a strengths based model of treatment may be helpful in supporting patients to understand the experiential and developmental nature of their depression and provide them with tools to maintain a positive outlook and better navigate similar experiences in the future.

The second benefit of integrating personal strengths in the treatment of depression relates more specifically to the present findings. The results discussed in this study suggest that depressed individuals who present with greater positive character strengths in the areas that have been examined, may be experiencing a subtype of depression that is qualitatively distinct from other forms of depression. While further research is necessary to understand the potential developmental benefits, risk factors, and treatment needs that accompany these depressive subtypes, we can speculate on clinical implications based on the present findings.

The current results suggest that, at any given time, approximately one out of nine emerging adults are experiencing clinical or subclinical depression that is characterized by equal levels of mood, somatic, and cognitive depressive features and diminished positive functioning. These potential clinical and subclinical subtypes of depression may be understood and treated in a manner that draws upon our existing diagnostic and treatment models of depression. This approach conceptualizes depression as a mental illness

accompanied by low mood, self-critical and negatively distorted cognition, and disrupted physiological functioning. Empirically validated treatment modalities, which offer tools to alleviate depressed mood by understanding the impact of maladaptive behaviors and thought patterns, may be most effective with these depressive subtypes. That said, integration of a strengths based treatment approach would likely be valuable in treating depression of this nature as well.

The present findings suggest that one out every three emerging adults is actively experiencing clinical or subclinical depressed mood and anhedonia that is characterized by substantially lower cognitive symptoms, and possibly lower somatic symptoms. These potential clinical and subclinical subtypes of depression are also accompanied by significantly higher functioning across positive psychological domains. It should be noted that the vast majority of these emerging adults, approximately seven out of eight, appear to fall within the subclinical range of depressed mood severity, suggesting that most emerging adults that experience depressive symptoms at any given time are a part of this subclinical group.

These cognitively resilient and higher functioning subtypes of depression may be more effectively treated using a strengths based approach. While emerging adults in these groups appear to experience similar levels of depressed mood and anhedonia to their lower functioning peers, their depressive symptoms are far less debilitating and disruptive. Instead, these depressive subtypes may be viewed as developmentally normative occurrences throughout emerging adulthood—referred to in the present discussion as *developmental depression*. In the context of the present findings and prior investigation, developmental depression may be defined as non-pathological depressive symptomatology

that often characterizes periods of major life transition, existential upheaval, and personal growth (Miller 2013; Miller & Barton, 2015). Assessment and treatment of developmental depression should be cautious about pathologizing and medicating depressed mood, especially when moderate in nature. Instead, it may be more affective for clinicians to frame depressive symptoms as characteristic of normal growth in transitional age adults, as well as a potential opportunity for personal development in the areas of spirituality, relationships, existential outlook, identity formation, and other positive character strengths. As treatment continues, development in these areas, as well as their dynamic and evolving meaning to patients, may be a central focus of examination.

Because these unique depressive subtypes may necessitate modified treatment methods and considerations, early identification of the nature of depressive presentations is essential. The present findings suggest that this may be most accurately accomplished by comparing degree of depressed mood and anhedonia to the coinciding level of cognitively depressed symptoms. Emerging adults who present with comparatively lower cognitive symptoms than depressed affect, regardless of depression severity, may be more likely to be experiencing developmental depression. The presence of elevated positive functioning exhibited by these patients may add greater diagnostic evidence to this conclusion.

Summary and Conclusions

In Phase I of the present study, latent class modeling was used to delineate five distinct profiles of functioning across depressive symptom clusters within a diverse population of emerging adults. All but one depressive symptom profile was characterized by elevated depressive symptomatology. Two clusters reported moderately depressed mood and two reported severely depressed mood. Within both the moderately and

severely depressed mood cluster pairs, one respective cluster exhibited significantly lower cognitive symptoms, and moderately lower somatic symptoms, of depression. Though the other two moderately and severely depressed clusters shared similar levels of depressed mood and anhedonia, they remained equally elevated across the somatic and cognitive symptom clusters.

A selection of spiritual, existential, positive psychological, and relational covariate variables were used to examine whether these cognitively resilient depressive symptom clusters were qualitatively distinct across measures of positive functioning and characters strengths. One-way ANOVA tests of all covariate variables, followed by LSD post-hoc tests, yielded the following findings: (1) The non-depressed group was significantly higher functioning than all four depressed groups on all covariate measures, except positive religious coping; (2) in comparison to the moderately depressed group that was elevated across the three depressive symptom clusters, the moderately depressed cognitively resilient group was significantly higher functioning on all covariate measures, except search for life meaning; (3) in comparison to the severely depressed group that was elevated across all three depressive symptom clusters, the severely depressed cognitively resilient group was significantly higher in reported life meaning, general optimism, and friendships satisfaction; (4) there were meaningful differences between the group that was moderately elevated on all three depression symptom clusters and the severely depressed cognitively resilient group on all measures of positive functioning, except negative religious coping, spirituality, presence of life meaning, gratitude, life optimism, and anxious and avoidant attachment.

Collectively, these findings suggest that multiple qualitatively distinct subtypes of depression may exist within a diverse sample of emerging adults. Furthermore, these subgroups of depression were associated with substantially different levels of individual functioning across measures of spiritual and existential engagement, as well as positive character strengths and relational wellbeing. Differences in functioning were the most pronounced between the two moderately depressed groups, which accounted for 35.7% of the total emerging adult sample. Four out of five of these moderately depressed emerging adults belonged to the higher functioning cognitively resilient group. The severely depressed groups, which collectively accounted for only 8.3% of the sample, followed a similar but less pronounced pattern of functioning between the cognitively depressed and resilient groups. The high functioning moderately depressed group accounted for 64.9% of all emerging adults experiencing some form of depressive symptomatology. In other words, of the 43.9% of emerging adults that endorsed moderately to severely depressed mood symptoms at the time of data collection, nearly two-thirds of these participants appeared to be experiencing a high functioning and presumably subclinical form of depression. This depressive subtype is hypothesized to be developmental in nature, particularly in its association with periods of accelerated personal growth, identity formation, and associated upheaval.

Phase II further examined this hypothesis by constructing a LCA model that contained the most salient variables and covariates identified in Phase I. While slight variations between these two models are to be expected, the findings of the second model provided convergent validity for those of the first. This model further supported the hypothesis that multiple distinct profiles of depression exist. In both Phase I and II, five

depressive profiles were effectively differentiated by their associated levels of cognitive depression symptoms, providing converging evidence that cognitive functioning is an important tool in understanding and identifying unique depressive subtypes. By including key spiritual, existential, positive psychological, and relational variables from the first model in the unified Phase II latent class model, results continue to support the finding that relatively lower cognitive depression symptoms are linked to higher positive human functioning.

In short, Phase I established a latent class model based on the three depressive symptomatology clusters. Then, through a series of follow-up analyses, differences across five depressive symptom profiles were examined using a wide selection of positive functioning covariates. These analyses established the existence of five phenomenologically distinct profiles of depressive functioning, which were further understood in their markedly different levels on measures of positive human functioning. Phase II drew upon the most salient depressive and positive psychological variables from Phase I (cognitive depressive symptomatology, spirituality, life meaning, life satisfaction, and friendship satisfaction), and examined them collectively within a unified latent class model. The outcome of Phase II—a model that delineated unique profiles of positive psychological functioning based on divergent levels of cognitive depressive symptomatology—further validated the findings of Phase I from a second angle of statistical inquiry. Together these two examinations provide converging evidence that (1) multiple distinct subtypes of depression exist in emerging adults and (2) these subtypes can be phenomenologically differentiated by unique respective profiles of cognitive symptomatology and positive psychological functioning.

Limitations

The present findings and tentative conclusions are intended to support remediation of recently identified systemic weaknesses in diagnosing and treating major depression and other affective disorders. The aim of the present study was to investigate multiple profiles across the mood, somatic, and cognitive depressive symptomatology clusters, as well as a selection of positive human functioning measures. Inductively derived profiles were generated using LCA to investigate unique homogeneous latent classes within large and diverse sample of emerging adults. LCA alone does not determine causality between the variables. The nature of the relationship between the variables is a matter of conceptual interpretation, with multiple perspectives explored in the present discussion. By comparing positive character traits, which often develop throughout emerging adulthood, with depressive features that are more likely time-limited and state-based, we can infer a potential developmental model around the relationship between positive functioning and depressive symptomatology. The model remains to be tested in a longitudinal design.

Future Research

The present study provides a preliminary investigation into the hypothesis of multiple phenomenological subtypes of depression occurring during emerging adulthood. Because of the cross-sectional nature of the present analyses, it is not possible to make empirically based conclusions on the directionality of the observed associations between depressive subtypes and their unique positive psychological profiles. While tentative empirical conclusions and clinical implications were discussed based on the present findings, further research is necessary to test these hypotheses longitudinally. Additional

investigation into the nature of developmental depression, as well as the efficacy of various related treatment adaptations, is also required.

References

- Addis, M. E., Truax, P., & Jacobson, N. S. (1995). Why do people think they are depressed?: The Reasons For Depression Questionnaire. *Psychotherapy: Theory, Research, Practice, Training*, 32(3), 476–483.
- Aldwin, C. M., & Levenson, M. R. (2001). Stress, coping, and health at mid-life. *The handbook of midlife development*, 188-214.
- Amador XF, Anthony DS. Insight and Psychosis. (2nd ed). Oxford, UK: Oxford University Press; 2004.
- Amador, X. F., Flaum, M., Andreasen, N. C., Strauss, D. H., Yale, S. A., Clark, S. C., & Gorman, J. M. (1994). Awareness of illness in schizophrenia and schizoaffective and mood disorders. *Archives of general psychiatry*, 51(10), 826-836.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*. Washington, D.C: American Psychiatric Association.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American psychologist*, 55(5), 469.
- Barry, C. M., & Nelson, L. J. (2005). The role of religion in the transition to adulthood for young emerging adults. *Journal of Youth and Adolescence*, 34(3), 245-255.
- Barton, Y. A., & Miller, L. (2015). Spirituality and positive psychology go hand in hand: An investigation of multiple empirically derived profiles and related protective benefits. *Journal of religion and health*, 54(3), 829-843.
- Benson, P. L., Scales, P. C., Syvertsen, A. K., & Roehlkepartain, E. C. (2012). Is youth spiritual development a universal developmental process? An international exploration. *The*

- Journal of Positive Psychology*, 7(6), 453-470.
- Berry, D. (2004). The relationship between depression and emerging adulthood: theory generation. *Advances in Nursing Science*, 27(1), 53-69.
- Berry, D. M., & York, K. (2011). Depression and religiosity and/or spirituality in college: A longitudinal survey of students in the USA. *Nursing & health sciences*, 13(1), 76-83.
- Beyers, W. C. J., & Seiffge-Krenke, I. (2008, March). Does identity precede intimacy? An Eriksonian approach to romantic development in emerging adulthood. Paper presented at the biennial meeting of the Society of Research in Adolescence, Chicago.
- Bifulco, A., Moran, P. M., Ball, C., & Bernazzani, O. (2002). Adult attachment style. I: Its relationship to clinical depression. *Social psychiatry and psychiatric epidemiology*, 37(2), 50-59.
- Birmaher, B., Ryan, N. D., Williamson, D. E., Brent, D. A., Kaufman, J., Dahl, R. E., ... & Nelson, B. (1996). Childhood and adolescent depression: a review of the past 10 years. Part I. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(11), 1427-1439.
- Bonelli, R., Dew, R. E., Koenig, H. G., Rosmarin, D. H., & Vasegh, S. (2012). Religious and spiritual factors in depression: review and integration of the research. *Depression research and treatment*, 2012.
- Bosc, M. (2000). Assessment of social functioning in depression. *Comprehensive Psychiatry*, 41(1), 63-69.
- Braskamp, L. A. (2008). The religious and spiritual journeys of college students. In D. Jacobsen & R. H. Jacobsen (Eds.), *The American university in a postsecular age* (pp.

- 117–134). New York: Oxford University Press.
- Chang, E. C. (2001). Life stress and depressed mood among adolescents: Examining a cognitive-affective mediation model. *Journal of Social and Clinical Psychology, 20*(3), 416–429.
- Chaudhary, H., & Chaudhary, S. (2014). Positive emotions, resilience, gratitude and forgiveness: Role of positive psychology in 21st century. *Indian Journal of Positive Psychology, 5*(4), 528.
- Costello, E. J., Egger, H., & Angold, A. (2005). 10-year research update review: the epidemiology of child and adolescent psychiatric disorders: I. Methods and public health burden. *Journal of the American Academy of Child & Adolescent Psychiatry, 44*(10), 972-986.
- Cowlshaw, S., Niele, S., Teshuva, K., Browning, C., & Kendig, H. (2013). Older adults' spirituality and life satisfaction: A longitudinal test of social support and sense of coherence as mediating mechanisms. *Ageing and Society, 33*(07), 1243–1262.
- Debats, D. L., Drost, J., & Hansen, P. (1995). Experiences of meaning in life: A combined qualitative and quantitative approach. *British Journal of Psychology, 86*(3), 359-375.
- Delaney, C. (2005). The spirituality scale development and psychometric testing of a holistic instrument to assess the human spiritual dimension. *Journal of Holistic Nursing, 23*(2), 145-167.
- Desrosiers, A., & Miller, L. (2007). Relational spirituality and depression in adolescent girls. *Journal of clinical psychology, 63*(10), 1021-1037.
- Desrosiers, A., Kelley, B. S., & Miller, L. (2011). Parent and peer relationships and relational spirituality in adolescents and young adults. *Psychology of Religion and Spirituality,*

3(1), 39.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of personality assessment*, 49(1), 71-75.

Dowling, E. M., Gestsdottir, S., Anderson, P. M., Eye, A., Almerigi, J., & Lerner, R. M. (2004). Structural Relations Among Spirituality, Religiosity, and Thriving in Adolescence. *Applied Developmental Science*, 8(1), 7-16.

Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT-S). *Journal of personality assessment*, 91(2), 166-174.

Eng, W., Heimberg, R. G., Hart, T. A., Schneier, F. R., & Liebowitz, M. R. (2001). Attachment in individuals with social anxiety disorder: the relationship among adult attachment styles, social anxiety, and depression. *Emotion*, 1(4), 365.

Fabricatore, A. N., Handal, P. J., & Fenzel, L. M. (2000). Personal spirituality as a moderator of the relationship between stressors and subjective well-being. *Journal of Psychology and Theology*, 28(3), 221.

Falb, M. D., & Pargament, K. I. (2014). Religion, spirituality, and positive psychology: Strengthening well-being. In J. T. Pedrotti & L. M. Edwards (Eds.), *Perspectives on the intersection of multiculturalism and positive psychology* (pp. 143-157). The Netherlands: Springer.

Fales, C. L., Barch, D. M., Rundle, M. M., Mintun, M. A., Snyder, A. Z., Cohen, J. D., ... & Sheline, Y. I. (2008). Altered emotional interference processing in affective and cognitive-control brain circuitry in major depression. *Biological psychiatry*, 63(4), 377-384.

Fava, M., A John Rush, M. D., Alpert, J. E., Balasubramani, G. K., Wisniewski, S. R., Carmin, C. N., & Warden, D. (2008). Difference in treatment outcome in outpatients with

- anxious versus nonanxious depression: a STAR* D report. *American Journal of Psychiatry*.
- Fava, M., Rankin, M. A., Wright, E. C., Alpert, J. E., Nierenberg, A. A., Pava, J., & Rosenbaum, J. F. (2000). Anxiety disorders in major depression. *Comprehensive Psychiatry*, *41*(2), 97-102.
- Fetzer Institute & National Institute on Aging Working Group. (1999). *Multidimensional measurement of religiousness/spirituality for use in health research*. Kalamazoo, MI: Fetzer Institute.
- Fogel, J., Eaton, W. W., & Ford, D. E. (2006). Minor depression as a predictor of the first onset of major depressive disorder over a 15-year follow-up. *Acta Psychiatrica Scandinavica*, *113*(1), 36-43.
- Fowler, J. W. (1981). *Stages of faith*. San Francisco: Harper & Row.
- Freedman, R., Lewis, D. A., Michels, R., Pine, D. S., Schultz, S. K., Tamminga, C. A., & Yager, J. (2013). The initial field trials of DSM-5: new blooms and old thorns. *American Journal of Psychiatry*, *170*(1), 1-5.
- Fried, E. I., & Nesse, R. M. (2015). Depression is not a consistent syndrome: an investigation of unique symptom patterns in the STAR* D study. *Journal of affective disorders*, *172*, 96-102.
- Fried, E. I., Nesse, R. M., Zivin, K., Guille, C., & Sen, S. (2014). Depression is more than the sum score of its parts: individual DSM symptoms have different risk factors. *Psychological medicine*, *44*(10), 2067-2076.
- Galambos, N. L., Barker, E. T., & Krahn, H. J. (2006). Depression, self-esteem, and anger in emerging adulthood: seven-year trajectories. *Developmental psychology*, *42*(2), 350.

- Gaynes, B. N. (2009). Identifying difficult-to-treat depression: differential diagnosis, subtypes, and comorbidities. *The Journal of clinical psychiatry*, 70(suppl 6), 1-478.
- Ghaemi, S. N. (2001). Rediscovering existential psychotherapy: the contribution of Ludwig Binswanger. *American journal of psychotherapy*, 55(1).
- Ghaemi, S. N. (2007). Feeling and time: the phenomenology of mood disorders, depressive realism, and existential psychotherapy. *Schizophrenia bulletin*, 33(1), 122-130.
- Gnanaprakash, C. (2013). Spirituality and resilience among post-graduate university students. *Journal of Health Management*, 15(3), 383-396.
- Goldberg, D. (2010). Should our major classifications of mental disorders be revised?. *The British Journal of Psychiatry*, 196(4), 255-256.
- Gonzalez, V. M., Reynolds, B., & Skewes, M. C. (2011). Role of impulsivity in the relationship between depression and alcohol problems among emerging adult college drinkers. *Experimental and clinical psychopharmacology*, 19(4), 303.
- Good, M., & Willoughby, T. (2008). Adolescence as a sensitive period for spiritual development. *Child Development Perspectives*, 2(1), 32-37.
- Gottlieb, B. H., Still, E., & Newby-Clark, I. R. (2007). Types and precipitants of growth and decline in emerging adulthood. *Journal of Adolescent Research*, 22(2), 132-155.
- Graber, J. A., & Sontag, L. M. (2009). Internalizing problems during adolescence. In R. M. Lerner, & L. Steinberg (Eds.), *Handbook of adolescent psychology*. New York: Wiley.
- Hardy, S. A., Pratt, M. W., Pancer, S. M., Olsen, J. A., & Lawford, H. L. (2010). Community and religious involvement as contexts of identity change across late adolescence and emerging adulthood. *International Journal of Behavioral Development*, 1-11.
- Hardy, S. A., Zhang, Z., Skalski, J. E., Melling, B. S., & Brinton, C. T. (2014). Daily religious

- involvement, spirituality, and moral emotions. *Psychology of Religion and Spirituality*, 6(4), 338-348.
- Havens, L. L., & Ghaemi, S. N. (2005). Existential despair and bipolar disorder: The therapeutic alliance as a mood stabilizer. *American journal of psychotherapy*, 59(2), 137-147.
- Hawthorne, G. (2006). Measuring social isolation in older adults: development and initial validation of the friendship scale. *Social Indicators Research*, 77(3), 521-548.
- IBM Corp. Released 2013. IBM SPSS Statistics for Macintosh, Version 22.0. Armonk, NY: IBM Corp.
- Inglehart, R., Basanez, M., Díez-Medrano, J., Halman, L., & Luijkx, R. (2004). *Human beliefs and values: A cross-cultural sourcesbook based upon the 1999–2002 values surveys*. Mexico City: Siglo Veintiuno Editores.
- Jung, T., & Wickrama, K. A. S. (2008). An introduction to latent class growth analysis and growth mixture modeling. *Social and Personality Psychology Compass*, 2(1), 302-317.
- Kelley, B. S., Athan, A. M., & Miller, L. F. (2007). Openness and spiritual development in adolescents. *Research in the Social Scientific Study of Religion*, 18, 3-33.
- Kendler, K. S., Karkowski, L. M., & Prescott, C. A. (1999). Causal relationship between stressful life events and the onset of major depression. *American Journal of Psychiatry*, 156(6), 837-841.
- Kendler, K. S., Kuhn, J. W., Vittum, J., Prescott, C. A., & Riley, B. (2005). The interaction of stressful life events and a serotonin transporter polymorphism in the prediction of episodes of major depression: a replication. *Archives of general psychiatry*, 62(5), 529-535.

- Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1992). Childhood parental loss and adult psychopathology in woman: A twin study perspective. *Archives of General Psychiatry, 49*, 109–116.
- Kessler, R. C. (1997). *The effects of stressful life events on depression*. New York: Routledge.
- Kessler, R. C., & Walters, E. E. (1998). Epidemiology of DSM-III-R major depression and minor depression among adolescents and young adults in the national comorbidity survey. *Depression and anxiety, 7*(1), 3-14.
- Kessler, R. C., Merikangas, K. R., & Wang, P. S. (2007). Prevalence, comorbidity, and service utilization for mood disorders in the United States at the beginning of the twenty-first century. *Annu. Rev. Clin. Psychol., 3*, 137-158.
- King, P. E., & Boyatzis, C. J. (2004). Exploring adolescent spiritual and religious development: current and future theoretical and empirical perspectives. *Applied Developmental Science, 8*, 2–6.
- Klerman, G. L., & Weissman, M. M. (1989). Increasing rates of depression. *Jama, 261*(15), 2229-2235.
- Klerman, G. L. (1988). The current age of youthful melancholia. Evidence for increase in depression among adolescents and young adults. *The British Journal of Psychiatry, 152*(1), 4-14.
- Koenig, H. G. (2009). Research on religion, spirituality, and mental health: a review. *Canadian Journal of Psychiatry, 54*(5), 283-291.
- Koenig, H. G., Cohen, H. J., Blazer, D. G., Kudler, H. S., Krishnan, K. R. R., & Sibert, T. E. (1995). Religious coping and cognitive symptoms of depression in elderly medical patients. *Psychosomatics, 36*(4), 369-375.

- Koenig, L., McGue, M., & Iacono, W. G. (2008) Stability and change in religiousness during emerging adulthood. *Developmental Psychology, 44*, 532–543.
- Koivumaa-Honkanen, H., Kaprio, J., Honkanen, R., Viinamäki, H., & Koskenvuo, M. (2004). Life satisfaction and depression in a 15-year follow-up of healthy adults. *Social psychiatry and psychiatric epidemiology, 39*(12), 994-999.
- Kroenke, K., Spitzer, R. L., Williams, J. B. W. (2001). Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*, 606-613.
- Kuwabara, S. A., Van Voorhees, B. W., Gollan, J. K., & Alexander, G. C. (2007). A qualitative exploration of depression in emerging adulthood: disorder, development, and social context. *General hospital psychiatry, 29*(4), 317-324.
- Labbe', E. E., & Fobes, A. (2010). Evaluating the interplay between spirituality, personality and stress. *Applied psychophysiology and biofeedback, 35*(2), 141–146.
- Labouvie-Vief, G. (2006). Emerging structures of adult thought. In J. J. Arnett & J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 59–84). Washington, DC: American Psychological Association.
- Lachman, M. E. (2004). Development in midlife. *Annu. Rev. Psychol., 55*, 305-331.
- Lachman, M. E., Teshale, S., & Agrigoroaei, S. (2015). Midlife as a pivotal period in the life course: Balancing growth and decline at the crossroads of youth and old age. *International journal of behavioral development, 39*(1), 20-31.
- Lee, K. H., Besthorn, F. H., Bolin, B. L., & Jun, J. S. (2012). Stress, spiritual, and support coping, and psychological well-being among older adults in assisted living. *Journal of Religion & Spirituality in Social Work: Social Thought, 31*(4), 328–347.
- Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1998). Major depressive disorder in older

- adolescents: prevalence, risk factors, and clinical implications. *Clinical psychology review*, 18(7), 765-794.
- Lewinsohn, P. M., Shankman, S. A., Gau, J. M., & Klein, D. N. (2004). The prevalence and comorbidity of subthreshold psychiatric conditions. *Psychological medicine*, 34(04), 613-622.
- Ma, M., Kibler, J. L., & Sly, K. (2013). Gratitude is associated with greater levels of protective factors and lower levels of risks in African American adolescents. *Journal of adolescence*, 36(5), 983-991.
- Marcia, J. E. (1980). Identity in adolescence. In J. Adelson (Ed.), *Handbook of adolescent psychology* (pp. 159–187) New York: Wiley.
- Marques, S. C., Lopez, S. J., & Mitchell, J. (2013). The role of hope, spirituality and religious practice in adolescents' life satisfaction: Longitudinal findings. *Journal of Happiness Studies*, 14(1), 251–261.
- Martin, W. (2005). Lived time and psychopathology. *Philos Psychiatry Psychol.*, 12, 173–185.
- Mascaro, N., & Rosen, D. H. (2005). Existential meaning's role in the enhancement of hope and prevention of depressive symptoms. *Journal of personality*, 73(4), 985-1014.
- Mason, W. A., Kosterman, R., Hawkins, J. D., Herrenkohl, T. I., Lengua, L. J., & McCauley, E. (2004). Predicting depression, social phobia, and violence in early adulthood from childhood behavior problems. *Journal of the American Academy of Child & Adolescent Psychiatry*, 43(3), 307-315.
- McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, 82, 112- 127.

- McHugh, P. R. (2005). Striving for coherence: psychiatry's efforts over classification. *Jama*, 293(20), 2526-2528.
- Miller, L. (2013). Spiritual awakening and depression in adolescents: A unified pathway or "two sides of the same coin". *Bulletin of the Menninger Clinic*, 77(4), 332-348.
- Miller, L., & Barton, Y. A. (2015). Developmental Depression in Adolescents: A Potential Subtype Based on Neural Correlates and Comorbidity. *Journal of religion and health*, 54(3), 817-828.
- Miller, L., & Gur, M. (2002). Religiosity, depression, and physical maturation in adolescent girls. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41, 206-214.
- Miller, L., Warner, V., Wickramaratne, P., & Weissman, M. (1997). Religiosity and depression: Ten-year follow-up of depressed mothers and offspring. *Journal of the American Academy Child Adolescent Psychiatry*, 36, 1416-1425.
- Miller, L., Wickramaratne, P., Gameroff, M. J., Sage, M., Tenke, C. E., & Weissman, M. M. (2012). Religiosity and major depression in adults at high risk: a ten-year prospective study. *American Journal of Psychiatry*, 169(1), 89-94.
- Muthén, L. K., & Muthén, B. O. (2013). *MPlus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
- Nelson, L. J., & Barry, C. M. (2005). Distinguishing features of emerging adulthood the role of self-classification as an adult. *Journal of Adolescent Research*, 20(2), 242-262.
- Nussbaum, A. M. (2013). Interpreters or Teachers?. *JAMA*, 310(3), 265-266.
- Nylund, K.L., Asparouhov, T., & Muthén, B. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling. A Monte Carlo simulation study. *Structural Equation Modeling*, 14, 535-569.

- Paris, J. (2014). The mistreatment of major depressive disorder. *Canadian Journal of Psychiatry, 59*(3), 148-151.
- 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.
- Peleg, G., Barak, O., Harel, Y., Rochberg, J., & Hoofien, D. (2009). Hope, dispositional optimism and severity of depression following traumatic brain injury. *Brain Injury, 23*(10), 800-808.
- Pennington, B. F. (2002). *The development of psychopathology: Nature and nurture*. New York: Guilford Press.
- Piedmont, R. L. (2009). The contribution of religiousness and spirituality to subjective wellbeing and satisfaction with life. In M. de Souza, L. J. Francis, J. O'Higgins-Norman, & D. Scott (Eds.), *International handbook of education for spirituality, care and wellbeing* (pp. 89–105). The Netherlands: Springer.
- Powers, C., Nam, R. K., Rowatt, W. C., & Hill, P. C. (2007). Associations between humility, spiritual transcendence, and forgiveness. *Research in the social scientific study of religion, 18*, 75.
- Rahmawati, S. (2014). Role of religiousness/spirituality in resilience of fisheries college cadets. *Journal of Educational, Health and Community Psychology, 3*(1), 31–40.
- Regier, D. A., Narrow, W. E., Clarke, D. E., Kraemer, H. C., Kuramoto, S. J., Kuhl, E. A., & Kupfer, D. J. (2013). DSM-5 field trials in the United States and Canada, Part II: test-retest reliability of selected categorical diagnoses. *American journal of psychiatry, 170*(1), 59-70.

- Regnerus, M. D. (2003). Religion and positive adolescent outcomes: A review of research and theory. *Review of Religious Research*, 394-413.
- Reynolds, J. R., & Turner, R. J. (2008). Major life events: their personal meaning, resolution, and mental health significance. *Journal of health and social behavior*, 49(2), 223-237.
- Riggs, S. A., & Han, G. (2009). Predictors of anxiety and depression in emerging adulthood. *Journal of Adult Development*, 16(1), 39-52.
- Rosmarin, D. H., Krumrei, E. J., & Pargament, K. I. (2010). Are gratitude and spirituality protective factors against psychopathology?. *International Journal of Existential Psychology and Psychotherapy*, 3(1).
- Rowold, J. (2011). Effects of spiritual well-being on subsequent happiness, psychological well-being, and stress. *Journal of Religion and Health*, 50(4), 950-963.
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4, 219-247.
- Segrin, C., Powell, H. L., Givertz, M., & Brackin, A. (2003). Symptoms of depression, relational quality, and loneliness in dating relationships. *Personal Relationships*, 10(1), 25-36.
- Sha, T. (2006). Optimism, Pessimism and Depression; The Relations and Differences by Stress Level and Gender. *Acta Psychologica Sinica*. 38(6), 886-901.
- Shaver, P. R., Schachner, D. A., & Mikulincer, M. (2005). Attachment style, excessive reassurance seeking, relationship processes, and depression. *Personality and Social Psychology Bulletin*, 31(3), 343-359.

- Smith, T. B., McCullough, M. E., & Poll, J. (2003). Religiousness and depression: evidence for a main effect and the moderating influence of stressful life events. *Psychological bulletin*, 129(4), 614.
- Sowell, E. R., Trauner, D. A., Gamst, A., & Jernigan, T. L. (2002). Development of cortical and subcortical brain structures in childhood and adolescence: A structural MRI study. *Developmental Medicine and Child Neurology*, 44, 4–16.
- 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.
- Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences*, 9, 69–74.
- Tennant, C. (2002). Life events, stress and depression: a review of recent findings. *Australian and New Zealand Journal of Psychiatry*, 36(2), 173-182.
- Thapar, A., Collishaw, S., Pine, D. S., & Thapar, A. K. (2012). Depression in adolescence. *The Lancet*, 379(9820), 1056-1067.
- Tuck, I., & Anderson, L. (2014). Forgiveness, flourishing, and resilience: The influences of expressions of spirituality on mental health recovery. *Issues in Mental Health Nursing*, 35(4), 277–282.
- Turner, M. J., Killian, T. S., & Cain, R. (2004). Life course transitions and depressive symptoms among women in midlife. *The International Journal of Aging and Human Development*, 58(4), 241-265.
- Walker, E. F., Sabuwalla, Z., & Huot, R. (2004). Pubertal neuromaturation, stress sensitivity, and psychopathology. *Development and Psychopathology*, 16, 807–824.

- Wei, M., Vogel, D. L., Ku, T., & Zakalik, R. A. (2005). Adult attachment, affect regulation, negative mood, and interpersonal problems: The mediating roles of emotional reactivity and emotional cutoff. *Journal of Counseling Psychology, 52*, 14–24.
- Williams, N. L., & Riskind, J. H. (2004). Adult romantic attachment and cognitive vulnerabilities to anxiety and depression: Examining the interpersonal basis of vulnerability models. *Journal of Cognitive Psychotherapy, 18*, 7–24.
- Wink, P., Dillon, M., & Larsen, B. (2005). Religion as Moderator of the Depression-Health Connection Findings From a Longitudinal Study. *Research on Aging, 27*(2), 197-220.
- Wong, Y. J., Rew, L., & Slaikeu, K. D. (2006). A systematic review of recent research on adolescent religiosity/spirituality and mental health. *Issues in Mental Health Nursing, 27*(2), 161-183.
- Yalom, I. D. (1980). *Existential psychotherapy*. New York: Basic Books.
- Yonker, J. E., Schnabelrauch, C. A., & DeHaan, L. G. (2012). The relationship between spirituality and religiosity on psychological outcomes in adolescents and emerging adults: A meta-analytic review. *Journal of adolescence, 35*(2), 299-314.
- Young, J. S., Cashwell, C. S., & Shcherbakova, J. (2000). The moderating relationship of spirituality on negative life events and psychological adjustment. *Counseling and Values, 45*, 49–57.

Appendix A

Patient Health Questionnaire (PHQ-9)

(with depressive symptom clusters indicated)

RESPONSE:

0-not at all, 1-several 2-more than half the days, 3-nearly every day

Instructions: Over the last two weeks, how often have you been bothered by the following problems?

1. Little interest or pleasure in doing things (**mood / anhedonia cluster**)
2. Feeling down, depressed, or hopeless (**mood / anhedonia cluster**)
3. Trouble falling or staying asleep, or sleeping too much (**somatic cluster**)
4. Feeling tired or having little energy (**somatic cluster**)
5. Poor appetite or overeating (**somatic cluster**)
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down (**cognitive cluster**)
7. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual (**somatic cluster**)
8. Trouble concentrating on things, such as reading the newspaper or watching television (**cognitive cluster**)
9. Thoughts that you would be better off dead or of hurting yourself in some way (**cognitive cluster**)

RESPONSE:

Not at all Difficult / Somewhat Difficult / Very Difficult / Extremely Difficult

Instructions: Please select one of the following:

10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Appendix B

Fetzer Brief Multidimensional Measure of Religiousness and Spirituality (BMMRS)

Daily Spiritual Experiences subscale

RESPONSE:

1-Many times a day, 2-Every day, 3-Most days, 4-Some days, 5-Once in a while, 6-Never or almost never (Questions 1-6)

1. I feel God's presence.
2. I find strength and comfort in my religion.
3. I feel deep inner peace or harmony.
4. I desire to be closer to or in unison with God.
5. I feel God's love for me, directly, or through others.
6. I am spiritually touched by the beauty of creation.

Forgiveness subscale

RESPONSE:

1-Always or almost always, 2-Often, 3-Seldom, 4-Never (Questions 11-13)

11. Because of my religious or spiritual beliefs I have forgiven myself for things that I have done wrong.
12. Because of my religious or spiritual beliefs I have forgiven those who hurt me.
13. Because of my religious or spiritual beliefs I know that God forgives me.

Positive and Negative Religious Coping subscales

RESPONSE:

1-A great deal, 2-Quite a bit, 3-Somewhat, 4-Not at all (Questions 19-24)

Instructions: Think about how you try to understand and deal with major problems in your life. To what extent is each of the following involved in the way you cope?

19. I think about how my life is part of a larger spiritual force.
20. I work together with God as partners.
21. I look to God for strength, support, and guidance.
-
22. I feel God is punishing me for my sins or lack of spirituality.
23. I wonder whether God has abandoned me.
24. I try to make sense of the situation and decide what to do without relying on God.

Appendix C

Gratitude Questionnaire

RESPONSE:

1-strongly disagree, 2-disagree, 3-slightly disagree, 4-neutral, 5-slightly agree, 6-agree, 7-strongly agree

Instructions: Please rate the following on a 7-point scale indicating how much you agree with the statements.

1. I have so much in life to be thankful for.
2. If I had to list everything that I felt grateful for, it would be a very long list.
3. When I look at the world, I don't see much to be grateful for. *
4. I am grateful to a wide variety of people.
5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life story.
6. Long amounts of time can go by before I feel grateful to something or someone. *

** Items are reverse coded*

Appendix D

Life Optimism Test

RESPONSE:

Agree, Disagree

1. In uncertain times, I usually expect the best.
2. It's easy for me to relax.
3. If something can go wrong for me, it will. *
4. I always look on the bright side of things.
5. I'm always optimistic about my future.
6. I enjoy my friends a lot.
7. It's important for me to keep busy.
8. I hardly ever expect things to go my way. *
9. Things never work out the way I want them to. *
10. I don't get upset too easily.
11. I'm a believer in the idea that "every cloud has a silver lining."
12. I rarely count on good things happening to me. *

** Items are reverse coded*

Appendix E

Grit Scale

RESPONSE:

1-not like me at all , 2-not much like me, 3-somewhat like me, 4-mostly like me, 5-very much like me

Directions: Please respond to the following 8 items. Be honest – there are no right or wrong answers!

1. New ideas and projects sometimes distract me from previous ones.*
2. Setbacks don't discourage me.
3. I have been obsessed with a certain idea or project for a short time but later lost interest.*
4. I am a hard worker.
5. I often set a goal but later choose to pursue a different one.*
6. I have difficulty maintaining my focus on projects that take more than a few months to complete.*
7. I finish whatever I begin.
8. I am diligent.

** Items are reverse coded*

Appendix F

Meaning in Life Questionnaire

RESPONSE:

1-absolutely untrue, 2-mostly untrue, 3-somewhat untrue, 4-can't say true or false, 5-somewhat true, 6-mostly true, 7-absolutely true

Instructions: 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.

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.

Presence subscale items: 1, 4, 5, 6, & 9 (reverse-coded)

Search subscale items: 2, 3, 7, 8, & 10

Appendix G

Spirituality Scale

RESPONSE:

1-strongly disagree, 2-disagree, 3-mostly disagree, 4-mostly agree, 5-agree, 6- strongly agree

1. I find meaning in my life experiences.
2. I have a sense of purpose.
3. I am happy about the person I have become.
4. I see the sacredness in everyday life.
5. I meditate to gain access to my inner spirit
6. I live in harmony with nature.
7. I believe there is a connection between all things that I cannot see but can sense.
8. My life is a process of becoming.
9. I believe in a Higher Power/Universal Intelligence.
10. I believe that all living creatures deserve respect.
11. The earth is sacred.
12. I value maintaining and nurturing my relationships with others.
13. I use silence to get in touch with myself.
14. I believe that nature should be respected.
15. I have a relationship with a Higher Power/Universal Intelligence.
16. My spirituality gives me inner strength.
17. I am able to receive love from others.
18. My faith in a Higher Power/Universal Intelligence helps me cope during challenges in my life.
19. I strive to correct the excesses in my own lifestyle patterns/practices.
20. I respect the diversity of people.
21. Prayer is an integral part of my spiritual nature.
22. At times, I feel at one with the universe.
23. I often take time to assess my life choices as a way of living my spirituality.

Appendix H

Satisfaction with Life Scale

RESPONSE:

7-strongly agree, 6-agree, 5-slightly agree, 4-neither agree nor disagree, 3-slightly disagree, 2-disagree, 1-strongly disagree

Instructions: 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.

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

Appendix I
Friendship Scale

*RESPONSE: 0-almost always, 1-most of the time, 2-about half the time, 3-occasionally,
4-not at all*

Instructions: During the past four weeks:

1. It has been easy to relate to others.
2. I felt isolated from other people. *
3. I had someone to share my feelings with.
4. I found it easy to get in touch with others when I needed to.
5. When with other people, I felt separate from them. *
6. I felt alone and friendless. *

** Items are reverse coded*