THESIS

ALEXITHYMIA, MEANING, AND WELL-BEING: HOW EMOTIONAL PROCESSES RELATE TO MEANING IN LIFE AND CALLING IN CAREER

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ABSTRACT

ALEXITHYMIA, MEANING, AND WELL-BEING: HOW EMOTIONAL PROCESSES RELATE TO MEANING IN LIFE AND CALLING IN CAREER

Emotional factors such as positive affect and empathy have been proposed as key factors influencing the constructs of meaning in life and calling in career. Alexithymia, or difficulty identifying and describing one's emotional experience, represents an emotional factor that has not been examined in relationship to either meaning in life or calling. This study used self-report measures to examine relationships between meaning in life, alexithymia, and psychological well-being along with relationships between calling, alexithymia, and career development well-being. Results revealed a significant, negative relationship between alexithymia and meaning in life. Furthermore, analyses provided evidence that meaning in life partially mediated the relationship between alexithymia and psychological well-being variables. The relationship between calling and alexithymia was non-significant. Results suggest that the ability to identify and describe one's emotions and discernment of meaning in one's life are linked and jointly influence psychological well-being. Limitations of the current study and implications for theory, practice, and future research are discussed.

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INTRODUCTION

Meaning both in the broad scope of one's life (e.g., Ryff & Singer, 1996) and in the more specific domain of work (e.g., Treadgold, 1999) has been linked to healthy psychological functioning. Alexithymia, or difficulty identifying and describing one's own emotions, has been consistently linked to diminished psychological well-being (e.g., Bamonti, Heisel, et al., 2010). Given the constricting nature of alexithymic symptoms, individuals' ability to search for and have meaning in their lives in relation to alexithymia is worth exploring.

King, Hicks, Krull, and Del Gaiso (2006) provided evidence that positive affect is key to the experience of meaning, and yet Rosso, Dekas, and Wrzesniewski (2010) note that affective processes have been largely neglected in the body of research on meaningful work. The presence of meaning in life has been found to be strongly associated with positive affect and well-being (Steger & Shin, 2010) while search for meaning in life has been found to have small to moderate relationships with negative affect, depression, and neuroticism (Steger, Frazier, Oishi, & Kaler, 2006). Understanding how affective limitations may impact individuals in terms of meaning-making may thus have significant implications for psychological health. The relation of alexithymia and meaning both in life and in work has had minimal investigation, and the purpose of this project is to examine how alexithymia may impact the meaning individuals derive from their work and lives.

LITERATURE REVIEW

Alexithymia

Alexithymia is a construct that refers to difficulty in identifying and describing emotions in the self. More specifically, alexithymia has come to be defined as a "cluster of clinically observable characteristics including difficulty identifying and describing subjective feelings, a restricted fantasy life, and an externally oriented thinking style" (Taylor & Bagby, 2013, pp. 100). Alexithymia emerged as a construct from a series of studies examining the possible psychological causes of physical illnesses (e.g., Alexander, French, & Pollock, 1968). Alexander (1950) developed "Specificity Theory," which held that seven psychosomatic illnesses, such as asthma and ulcerative colitis, were each caused by a specific, unconscious, emotional conflict. While genetic predispositions were acknowledged, researchers argued that affective conflicts that were not consciously processed played a causal role in some physical illnesses (Alexander et al., 1968). "Alexithymia," coined in 1972 by Dr. Peter E. Sifneos, originated from Greek, meaning "lack of words for emotions" (p. 81). Taylor, Bagby, and Parker (1997) illustrated that alexithymia was originally linked to physical illnesses such as hyperthyroidism but has more recently been conceptualized as a predisposing factor for psychological issues such as eating disorders and substance abuse.

Nemiah, Freyberger, and Sifneos (1976) argued that emotions must be represented consciously to be experienced as feelings; they described emotions and feelings as neurophysiological and cognitive-experiential components of affect, respectively. Nemiah (1977) proposed that alexithymia results from a failure of one or more elements of "psychic elaboration," which is composed of four elements:

(1) a refinement and delineation of the raw emotion into a variety of qualitatively different nuances that have the potential for conscious experience as feelings (e.g., anger, fear, joy, sadness); (2) a linking of the feelings with words descriptive of them; (3) the production of fantasies expressive of the feelings, which at the same time determine the imagery of the fantasies; and (4) the arousal of a network of memories and associations related to the feelings. (pp. 199-200)

Taylor, Bagby, and Parker (1997), in developing a self-report scale to measure alexithymia, expanded upon and clarified Nemiah's theory by asserting that individuals with high levels of alexithymia do not have fundamentally different emotional experiences than others. Instead, alexithymia amounts to an anomia for emotional words that exists on a continuum in the human population. Taylor and Bagby (2013) further asserted that clinical levels of alexithymia lead to impaired mental representations of emotion, thus limiting the experience of emotion and the ability to access or use the conceptual meaning of emotions. Therefore, clinical alexithymia is, in essence, an affective agnosia (Lane, Weihs, et al, 2015). Individuals with high levels of alexithymia thus demonstrate a diminished emotional vocabulary (Wotschack & Klann-Delius, 2013), commonly have somatic complaints that may be due to emotional difficulties (Mattila, Kronholm, et al., 2008), and display difficulties with emotion regulation (Connelly & Denney, 2007).

Alexithymia has consistently been found to have significant relationships with psychological well-being and affective outcomes. Alexithymia has been consistently and positively correlated with negative affective outcomes such as depression and anhedonia (e.g., Bamonti et al., 2010; Prince & Berenbaum, 1993) while also being consistently, negatively correlated with positive affect and happiness (e.g., Gilbert, McEwan, et al., 2012; Lundh &

Simonsson-Sarnecki, 2001). Alexithymia is also supported as an important component of emotional reflection as Mayer and Gaschke (1988) provided evidence that a process of affective reflection follows emotional experiences. Alexithymia represents an inhibitory factor in this reflective process.

Work as Calling

For many people, work is a central aspect of their lives; most people spend more of their waking hours on work-related activities than any other domain of activity. Given this, counseling psychology has a considerable body of research examining work. How individuals subjectively view their work has been identified as often more salient than the objective, extrinsic rewards of work (Meaning of Working International Research Team, 1987). Along with a recent trend focusing on positive psychology (Lopez, Magyar-Moe, et. al., 2006; Robitschek & Woodson, 2006), counseling and vocational psychology have developed a research base focusing on the construct of calling, or feeling drawn to specific career for transcendent and prosocial reasons (Dik & Duffy 2009). This research has begun assessing how this construct is related to outcomes such as life satisfaction (e.g., Duffy, Allan, Autin, & Bott, 2013; Hagmaier & Abele, 2015) and job satisfaction (e.g., Duffy, Bott, Allan, Torrey, & Dik, 2012). A sense of calling allows for an understanding of the meaning individuals take in their work. A sense of calling drives many to their individual career paths (Duffy & Sedlacek, 2007).

The concept of calling can be traced back to at least the early centuries C.E. when monks described being called to a monastic life, and Protestants in the 16th and 17th expanded the concept, holding that any form of work can be spiritually significant (Hardy, 1990). While the concept of calling has its roots in religious thought, calling has been defined in both religious and secular terms (e.g. Sellers, Thomas, Batts, & Ottman, 2005; Hall & Chandler, 2005). Religious

definitions focus on receiving a call from a higher power, while secular definitions often describe calling as coming from within. There have been mixed findings when examining a link between calling and religiosity; in a qualitative study, Hunter, Dik, and Banning (2010) found that participants consistently referenced a "Guiding Force" that defined their sense of calling - often referring to a higher power such as God but also referring to secular sources, while Dobrow and Tosti-Kharas (2011) found no inherent link between religiosity and calling. Steger, Pickering, Shin, and Dik (2010) explored calling and its relationship to well-being for both highly religious individuals and people with low religious commitment. They found evidence that religiosity is only significantly related to calling for highly religious individuals, supporting the notion that calling can be discerned with or without religious sources.

In reviewing the research on calling, Duffy and Dik (2013) assert that calling is best understood as a psychological construct with two distinct types of definitions: "neoclassical" and "modern" (p. 429). Neoclassical definitions are distinguished by emphasis on contributing to the greater good of humanity and a sense of being called by an external force or destiny, while modern definitions place more emphasis on the self, particularly a sense of fulfillment or happiness emanating from one's work. Research on calling has yielded a wide range of ways in which people understand their sense of calling, particularly when looking at sources of calling, as some individuals describe a specific religious or spiritual source, some solely describe an internal source such as their own values and passions, and some describe the source of their calling in a way that doesn't cleanly fit into a solely external or internal category, such as a sense of destiny. Research has found evidence that the benefits of calling, such as career maturity and life satisfaction, are most pronounced when individuals are able to live out their calling. While there is evidence of many benefits of calling, there is also an under-researched "dark side of having a

calling" (Duffy & Dik, 2013, p. 434), which includes such detrimental effects as sacrifices in non-work life domains (French & Domene, 2010) and being as risk for exploitation from employers (Bunderson & Thompson, 2009).

Dik and Duffy (2009) proposed a definition of calling involving three elements: 1) a transcendent summons 2) to a career that is perceived as meaningful and 3) is motivated by prosocial concerns. Dik and Duffy further defined "vocation" using their second and third elements of "calling" such that a "vocation" includes a sense of meaningfulness and other-oriented values without a transcendent summons. They distinguished between the presence of a calling and the search for a calling, which highlights the dynamic process by which people relate to their work. Other definitions of calling have described it as a "consuming, meaningful passion people experience towards a domain of work" (Dobrow & Tosti-Kharas, 2011, p. 1003) or as consisting of three components: "identification and person-environment fit, sense of meaning and value-driven behavior, and transcendent guiding force" (Hagmaier & Abele, 2012, p. 49-50). The majority of studies on calling have been based on Dik and Duffy's (2009) definition, using either the Brief Calling Scale or their Calling and Vocation Questionnaire (Dik, Eldridge, Steger, & Duffy, 2012). Rosso et al. (2010) noted that research must continue to explore affective processes that influence meaningful work. Arnold, Turner, et al. (2007) found evidence that viewing one's work as meaningful is associated with higher levels of psychological well-being, and engaging in meaningful work may also reduce anxiety by providing a means of distraction from symptoms (Westaby, Versenyi, & Hausmann, 2005).

Fundamentally, calling describes how individuals relate to their work. French and Domene (2010) conducted a qualitative study of calling with a sample of female university students. Their findings include the importance of the emotional connection to one's calling, the

conceptualization of calling as an identity, and the view that calling is a lens through which individuals view their whole lives, i.e. calling is not limited to work-related activities. French and Domene noted that deep passion was a clear theme amongst the women in their sample; their participants also noted that their calling contributed to security and stability in their sense of selves. The pervasiveness of calling in one's sense of self and how one relates to the world highlights the importance of emotional connection to work, underscoring the potential impact of emotional deficits such as alexithymia on calling.

Meaning in Life

Meaning in life (MIL) is an established construct in the field of psychology (Auhagen, 2000). Victor Frankl's work (1963) is frequently cited in psychological literature as a catalyst for much of the extant literature on MIL. A foundational work within this body of research is Battista and Almond's 1973 study that established positive life regard as a construct to measure meaning in individuals' lives. Battista and Almond, within this framework, proposed that MIL is simply making sense of one's life. Reker and Wong (1988) further elaborated MIL as constructed and reconstructed throughout the lifespan. This process of construction and reconstruction is one of interaction: an individual's personally held meaning is shaped and reshaped as it interacts with societal values, personally held values, affective processes, and life experiences.

The role of affect in MIL has been explored in psychological literature. Reker and Wong (1988) detailed a three-component model of personal meaning in life. Meaning in life, within their theory, is composed of motivational, cognitive, and affective components that mutually influence each other. This theory of global meaning, or meaning derived in a holistic view of one's life, is built upon the experience of situational meaning, or meaning derived from specific

encounters and experiences. The affective component, Reker and Wong theorized, functions to invigorate goal striving and serve as feedback from life encounters that serve to shape beliefs, values, and future action. Accurate and sophisticated emotional processing is clearly important within this model if an individual is to derive meaning that resonates with his or her views and experiences, for Carver and Scheier (1990, 1998) argued that positive and negative moods serve as vital feedback in making judgments about one's goal-related progress in relation to one's values. Emotional information also guides actions and cognitions (Schwarz & Clore, 2007), thus providing necessary information for meaning-making and meaningful action.

Ryff and Singer (1998) argued that MIL is driven predominantly by goal-directed behavior. MacKenzie and Baumeister (2014) asserted that goals are one of two categories of purpose, along with fulfillments, that contribute to meaning in life. Fulfillment, they argued, is made up of two components: positive affect and the attainment of a goal. That is to say, a sense of fulfillment cannot be derived without emotional resonance. King, Hicks, Krull, and Del Gaiso (2006) explored the role of positive affect within MIL. Through a series of six studies, King et al. (2006) found several significant relationships between positive affect and MIL. Their studies supported positive affect as a key predictor of MIL, positive mood as an enhancer of MIL, and positive affect as key to making distinctions between meaningful and meaningless activities.

Proulx and Inzlicht (2012) argued that a maintenance process impacts meaning; meaning is maintained through compensatory behaviors that follow violations of personally held meanings. Compensatory behaviors are thus a palliative process by which people react to inconsistencies between life events or emotional experiences and deeply held beliefs and expectations. This highlights the process by which affective limitations such as alexithymia may impact individuals' abilities to derive and maintain meaning within their lives. Given this

maintenance process and the pervasiveness of emotional experiences across the lifespan, alexithymia should be explored in relation to meaning in life.

Within the literature on MIL, definition and measurement of meaning has historically been an issue. In particular, past measures of MIL have had such high correlations with measures of positive and negative affect that their discriminant validity was questionable at best (Steger, Frazier, Oishi, & Kaler, 2006). The existence of myriad affective constructs points to a need to define MIL in a way that distinguishes it from affective components, particularly as measures that include affective fulfillment as an indicator of meaning are likely to conflate with mood-related constructs (Steger, 2012). Given these overlaps, a definition of MIL was developed to emphasize its distinctness from affective fulfillment, which is, "the extent to which people comprehend, make sense of, or see significance in their lives, accompanied by the degree to which they perceive themselves to have a purpose, mission, or overarching aim in life" (Steger, 2012, p. 6).

College Students and Meaning in Life, Calling, and Career Development

College and the period of emerging adulthood, ages 18-25 (Arnett, 2000), is a period that may be important for individual development of MIL (Steger, Oishi, & Kashdan, 2009). Steger et al. (2009), when examining a sample of 8756 individuals representing ages across the life span starting at age 18, found that search for MIL was particularly high at younger ages. Arnett (2000) argues that emerging adulthood is a critical period for individual identity development, and Dezutter, Waterman, et al. (2014) found evidence of five clusters that correspond to profiles of MIL that, they argue, correspond to identity development. Thus, emerging adulthood represents a potentially important developmental period for MIL. Emerging adulthood also represents a time within which many individuals are making critical choices regarding their careers based on

interests, abilities, and identities (Arnett, 2000). Given these findings, college students represent an important group to study regarding the processes that impact MIL and calling.

Super's Life-Span, Life-Space (1990) model of career development provides a useful, theoretical means for understanding university students' career development. Super describes nine roles that people can occupy at various life stages, including child, student, leisurite, citizen, worker, spouse, homemaker, parent, and pensioner, and four theaters that these roles are played within, including the home, the community, the school, and the workplace. University students are within a critical stage of navigating these roles and theaters: they are working through their student role to occupy a worker role that fits with their life goals and values. They are making consequential decisions within the school theater that are likely to impact the workplace theater for much, if not all, of the rest of their lives. While established workers can change careers or go back to school, the stage of being a traditional university student involves a unique process of setting oneself up for the transition from primarily operating in the student theater to primarily operating in the workplace theater. Thus, career development concerns are critical for undergraduates as they make choices to shape their career and adult lives.

Steger and Dik (2009) examined the interrelation of MIL and calling in undergraduate students. They found that MIL and calling were significant factors in the life satisfaction and career decision-making self-efficacy of university students. Specifically, students seeking global-level meaning in life experienced bolstered self-efficacy for career choice and sense of satisfaction with their lives if they experienced a sense of meaning in their careers. Furthermore, Duffy and Sedlacek (2010) found that 44% of their sample of first year university students believed that having a calling was totally or mostly true for them. Thus, the extant literature

gives some indication that calling and MIL are important factors for college students, suggesting that understanding factors related to students' sense of MIL and calling is a valuable pursuit.

Alexithymia and Calling

Research on alexithymia has revealed several interesting findings related to calling. In clinical settings, patients with high levels of alexithymia often display low levels of empathy (Krystal, 1979). Given that individuals high in alexithymia lack in-depth knowledge of their own emotions, it is likely that alexithymia thus also inhibits perspective taking that enables empathy. The link between alexithymia and empathy has been further supported with empirical research using self-report measures (e.g., Taylor & Bagby, 2000; Moriguchi, Decety, et al., 2007), and Sonnby-Borgström (2009) included an experimental manipulation that showed that individuals with high TAS-20 scores were less able to automatically imitate facial expressions of negative emotions. This has important implications for prosocial behavior and therefore the ability to have a calling or vocation, for Dik and Duffy (2009) propose prosocial orientation as one of three facets of a calling and one of two facets of a vocation. Empathy enables people to understand, share, and respond appropriately to the emotional states of others (Decety & Jackson, 2004); and multiple models of empathy include prosocial motivation to aid others as a central component of empathy (Batson, 1991; Zaki & Ochsner, 2012).

Beyond its implications for prosocial motivation, Dik and Steger (2015) argue that the core processes of empathy may be key to discerning a calling. Individuals may assess how their future selves would feel and think in specific careers, or individuals may utilize empathic processes to understand the lives of others in careers they are contemplating. Furthermore, one definition of calling has emphasized affect as a primary determinant of having a sense of calling, describing calling as "a consuming, meaningful passion people experience toward a domain"

(Dobrow & Tosti-Kharas, 2011, p. 1003). This implicates affective processes more directly in discerning a calling than other definitions and highlights the potential relationships between alexithymia and calling. Thus, individuals high in alexithymia may be inhibited in their ability to discern a calling due to inability to connect with a sense of passion or empathy. Furthermore, Wrzesniewski, Dutton, and Debebe (2003) noted that interpersonal, social processes play a key role in meaning making at work; that is, meaning in work is in part determined by reinforcement and evaluations of the social environment. Rosso et. al. (2010) noted that research must continue to explore affective and social forces that influence meaningful work. Given that alexithymia is itself an emotional process and impacts social processes such as empathy, alexithymia represents a potentially informative construct in the process of making meaning through work.

Minimal research has explored links between alexithymia and career development-related outcomes generally. However, Wiethaeuper and Balbinotti (2013) found evidence supporting a link between alexithymia and career decision factors using the Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994) and the Career Educational Questionnaire (Dupont, 1992). Calling has a growing body of studies (Dik, Sargent, & Steger, 2008; Domene, 2012; Duffy & Sedlacek, 2007; Duffy, Allan, & Dik, 2011; Dumulescu, Filip, & Opre, 2015; Hirschi & Hermann, 2012; Hirschi & Hermann, 2013; Steger, Pickering, Shin, & Dik, 2010) connecting it with various career development-related outcomes using the Calling and Vocation Questionnaire and Brief Calling Scale (CVQ & BCS; Dik, Eldridge, Steger, & Duffy, 2012). These studies support the notion that calling influences adaptive career development and positive career expectations in college students (Duffy & Dik, 2013). Given the common links to vocational development outcomes, the relationship between alexithymia, calling, and career development well-being is worth exploring.

Alexithymia and Meaning in Life

Meaning in life is likely to be impacted by affective processes, for MIL is conceptualized as a subjective, dynamic construct developed as individuals relate to their life context (Steger, Frazier, Oishi, & Kaler, 2006), and Haviland, Warren, and Riggs (2000) define alexithymia in part by lacking personal meaning in life. Bermond, Vorst, and Vingerhoets (1999) found alexithymia to be linked to lacking personal experiences of meaning in life as measured using the Adjective Check List (Gough, 1979).

Abeyta, Routledge, Juhl, and Robinson (2015), in a series of studies, found evidence that college students high in trait emotional clarity display higher levels of meaning in life. They also found that emotional clarity moderated the relationship between existential threats and meaning in life. Abeyta et al. (2015) measured emotional clarity using the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, et al., 1995). However, Palmieri, Boden, and Berenbaum (2009) propose that emotional clarity is best measured by a combination of the TMMS and the TAS-20. Thus, alexithymia is a factor that would be useful to explore in relation to meaning in life. Given that emotional clarity has been associated with meaning in life, alexithymia will likely be correlated with lower levels of meaning in life.

Alexithymia and meaning in life both have significant evidence connecting them to psychological well-being (e.g., Bamonti et al., 2010; King et al, 2006). Given the above discussion of the potential link between alexithymia and meaning in life, examining the relationship of alexithymia, meaning in life, and psychological well-being may provide support for an interactional model of how alexithymia and meaning in life interact to influence psychological well-being.

The present study takes a cross-sectional sample and examines relationships between self-reported measures of alexithymia, calling, meaning in life, psychological well-being, and career development well-being. Significant relationships would justify further research into the relationships between these variables aimed at determining causal relationships.

The Present Study

It is theorized that emotional information guides actions and cognitions (Schwarz & Clore, 2007), that affect is a core component of meaning-making (Reker & Wong, 1988), and that positive and negative moods serve as vital feedback in making judgments about one's goal-related progress in relation to one's values (Carver & Scheier, 1990, 1998), so it follows that alexithymia represents a variable of interest for meaning-related constructs. The present study examines several hypotheses and research questions regarding the relationships between alexithymia, calling, and career development well-being as well as alexithymia, MIL, and psychological well-being.

Alexithymia has been defined in part as a lack of MIL (Haviland et al., 2000), and Bermond et al (1999) found alexithymia to be linked to fewer experiences of MIL. As alexithymia entails diminished knowledge of one's own emotional experiences, alexithymia may limit the ability of individuals to find MIL.

Hypothesis 1a: Alexithymia predicts presence of MIL.

Evidence supports links between alexithymia and psychological well-being (e.g., Bamonti, 2010) and between presence of MIL and psychological well-being (e.g., King et al, 2006). Given King et al.'s (2006) findings of positive affect as a key predictor of MIL, then alexithymia makes sense as a potential inhibitory factor in discerning meaning in one's life. If alexithymia limits one's ability to find MIL, and both alexithymia and MIL impact well-being,

MIL may fully or partially mediate the relationship between alexithymia and psychological well-being.

Hypothesis 1b: MIL mediates the relationship between alexithymia and psychological well-being.

Prosocial orientation is an important component of calling and vocations (Dik & Duffy, 2009), and prosocial concerns may be limited by the lack of empathy associated with alexithymia (e.g., Taylor & Babgy, 2000) as prosocial motivation is theorized as a core component of empathy (e.g., Zaki & Ochsner, 2012). Calling has been defined as characterized by consuming passion (Dobrow, 2004), which has been found as a common theme among undergraduate students who identify as having a calling (French & Domene, 2010). Thus, alexithymia may represent an impediment to the ability to have a calling.

Hypothesis 2a: Alexithymia predicts presence of calling.

Alexithymia has been linked with diminished vocational maturity (Wiethaeuper & Balbinotti, 2013), but has not been explored in relation to career development well-being outside of this single study. Given this previous study, alexithymia is likely to be significantly related to career development well-being.

Hypothesis 2b: Alexithymia will be negatively correlated with career development well-being variables.

Evidence supports links between alexithymia and career decision factors (Wiethaeuper & Balbinotti, 2013) and between presence of calling and career development well-being (see Duffy & Dik, 2013, for a review). If alexithymia inhibits one's ability to discern a calling and calling impacts career decision factors, then the relationships between alexithymia and career decision factors may be fully or partially mediated by calling.

Hypothesis 2c: Presence of calling mediates the relationship between alexithymia and career decision factors

Given Reker and Wong's (1988) theory that meaning is constructed and reconstructed across the lifespan, along with their assertion that affect plays a key role in this meaning-making process, alexithymia may work as a moderator between presence of MIL and psychological well-being. Alexithymia may limit one's ability to fully experience the affective information that signals that one is living in line with one's sense of meaning, and thus positive outcomes of presence of MIL, in this case psychological well-being, may be impacted by an individual's level of alexithymia.

Hypothesis 3: Alexithymia will moderate the relationship between presence of MIL and psychological well-being.

Given that some have defined calling as consisting of a "consuming passion" (Dobrow, 2004; Dobrow & Tosti-Kharas, 2011), inability to perceive affective responses while engaging in career activities may diminish the ability to connect one's sense of calling to career development well-being factors. Thus, level of alexithymia may determine the extent to which calling is related to career development well-being.

Hypothesis 4: Alexithymia will moderate the relationship between presence of calling and career development well-being.

Search for MIL has been linked with diminished psychological well-being (e.g., Steger, Kashdan, Sullivan, & Lorentz, 2009) as has alexithymia (e.g., Bamonti et al., 2010). However, theoretical links between search for MIL and alexithymia leave an unclear picture. Steger et al (2009) argue that search for MIL is a separate construct from absence of MIL. Alexithymia may represent a factor that is related to absence of meaning as alexithymia may represent a factor that

limits an individual's ability to connect emotional feedback to their actions and cognitions and thus lead to individuals being high in search for MIL. There are possible relationships between alexithymia and search for MIL but limited evidence and theoretical foundation with which to construct a hypothesis.

Research Question 1: How does alexithymia relate to search for MIL?

Search for calling has been negatively correlated with career development well-being (e.g., Duffy & Sedlacek, 2007), and research has yet to examine alexithymia's link to search for calling. Alexithymia may represent a factor that leads to diminished search for meaning as it entails a disconnection from one's emotions that may not allow an individual to sense a desire for meaningful work, or alexithymia may disallow a connection between potentially meaningful career-related actions and emotional feedback such that individuals high in alexithymia search for meaning but cannot make the emotional connections necessary to sense its presence.

Research Question 2: How does alexithymia relate to search for calling?

METHODS

Participants and Procedure

Of the 321 original participants, 23 were removed from the analysis because they did not complete the consent item, leading to a total of 298 participants. Participants were students enrolled in PSY 100 and PSY 250 drawn from the research pool at Colorado State University. The mean age was 19.79 (*SD* = 3.80), 69.1% of participants identified as female (*N* = 206), 29.9% identified as male (*N* = 89), and 0.7% identified as other (*N* = 2). 77.9% of participants identified as White/European American (*N* = 232), 5.4% identified as Latinx/South or Central American (*N* = 16), 1% identified as Black/African American (*N* = 3), .3% identified as Native American/American Indian (*N* = 1), 2.3% identified as Asian/Pacific Islander (*N* = 7), 10.7% identified as multiracial (*N* = 32), and 2.3% identified themselves as 'other' (*N* = 7). 59.7% of participants identified as first-year undergraduates (*N* = 178), 26.5% identified as second-year undergraduates (*N* = 79), 7.7% identified as third-year undergraduates (*N* = 23), 4% identified as fourth-year undergraduates (*N* = 10), and 2% of participants identified as fifth-year undergraduates (*N* = 6). After providing informed consent, students answer questions provided via Qualtrics online survey for 1 hour of required course credit. No other compensation was provided.

Instruments

Demographics. Participants provided their age, gender, race/ethnicity, and year in school. This data was used to assess potential differences and to ensure homogeneity across groups. Linear regressions were run to determine if age impacted any of the main variables; there were no significant relationships between age and the main variables. Several one-way ANOVAs

were utilized to determine if the demographic variables impacted the main variables used in the analysis. Analyses revealed significant gender differences in alexithymia [$F(2,294) = 5.75$, $p < .01$], gender differences in presence of calling [$F(2,292) = 4.63$, $p = .01$], and year in school differences in search for calling [$F(4,291) = 4.41$, $p < .01$]. Post-hoc Bonferroni tests were run to examine these mean differences. In terms of alexithymia, participants who identified their gender as other showed significantly higher alexithymia than participants who identified as women (Mean difference = 25.27, $p = .01$) and participants who identified as men (Mean difference = 23.29, $p = .02$). However, the sample of participants who identified their gender as other was very small ($n = 2$), suggesting that conclusions should not be drawn from such a small sample. Regarding gender differences in presence of calling, participants who identified as women had significantly higher presence of calling than men (Mean difference: 2.51, $p = .015$), suggesting that gender may be related to calling. Due to this effect, analyses involving for presence of calling were run both controlling for gender and not controlling for gender; similar patterns of results were found, so analyses included here are those not controlling for gender. Regarding year in school differences in search for calling, fourth year students had significantly lower search for calling than all other years, with mean differences being -6.80 compared to first year students ($p = .01$), -6.27 compared to second year students ($p = .04$), -9.62 compared to third year students ($p < .01$), and -11.08 compared to fifth year students ($p = .02$), suggesting that year in school may be related to search for calling. The number of participants in the fourth year group was relatively small (fourth year: $n = 11$), so any conclusions drawn from these differences should be made with caution.

Meaning in Life Questionnaire (MLQ). MIL was measured using the Meaning in Life Questionnaire (Steger et al., 2006). The MLQ is comprised of 10 questions divided into two

subscales, one measuring the presence of meaning (e.g., ‘‘I understand my life’s meaning’’) and one measuring the search for meaning (e.g., “I am always searching for something that makes my life feel significant”). The items of this scale are rated from 1 (strongly disagree) to 5 (strongly agree). Scores on both subscales have demonstrated strong internal consistency reliability (α=.86-.88) and good one-month test-retest reliability (.70 for the presence subscale and .73 for the search subscale); furthermore, scores of the MLQ subscales showed strong convergent and discriminant validity through multitrait-multimethod matrix analysis, notably showing better discriminant validity than two other meaning measures (Steger et al., 2006). Analyses also showed scores on the MLQ to have significant, positive correlations between self-report and informant-report scores, indicating good convergent validity. Within the current study, scores on both the presence and search subscales showed good internal consistency reliability, with α=.87 for presence and α=.89 for search.

Calling and Vocation Questionnaire (CVQ). Calling was measured using the Calling and Vocation Questionnaire (Dik, Eldridge, Steger, & Duffy, 2012), which is a 24-item scale intended to assess an individual’s presence of calling and search for calling. The CVQ uses a 4-point scale ranging from 1 (Not at all true of me) to 4 (Absolutely true of me). Higher scores reflect higher presence of calling and higher search for calling. Each element of calling has three subscales reflecting the three dimensions of calling: transcendent summons, meaningful work, and prosocial orientation, totaling six subscales. The scores for each 12-item set are summed to create composite scores. The presence of calling composite scores have a high internal consistency reliability (α =.89) and 1-month test–retest reliability (r =.75). The search for calling composite scores also displayed high internal reliability (α=.87) and 1 month test–retest reliability of r = .67. CVQ scores showed evidence of construct validity, with support for

convergent validity as presence of calling scores were related to conceptually similar constructs, including intrinsic work motivation, prosocial work orientation, and work hope, while search for calling scores were related to prosocial work orientation and search for meaning in life (Dik et al., 2012). Within the current study, both the presence and search subscales showed good internal consistency reliability, with α=.85 for presence and α=.88 for search.

Toronto Alexithymia Scale (TAS-20). Alexithymia was measured using the Toronto Alexithymia Scale (Bagby, Parker, & Taylor, 1994), a 20-item self-report scale with three factors: difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking. The TAS-20 is currently the most widely and frequently used measure of alexithymia in extant psychological research (Taylor & Bagby, 2013). Scores on the TAS-20 demonstrated good internal consistency reliability (α=.81) and three week test-retest reliability (r=.77) within a sample of undergraduate students (Bagby, Parker, & Taylor, 1994). Scores on the TAS-20 displayed convergent validity through expected positive correlations with constructs such as neuroticism and expected negative correlations with constructs such as openness to feelings and psychological mindedness. The overall scale showed strong internal consistency reliability (α=.85).

Career Development Well-Being. Career development well-being was measured using four instruments to measure four constructs: career decidedness, career adaptability, academic satisfaction, and career decision difficulty.

Career decidedness was measured using the two-item Decidedness scale from the 16-item Career Decision Profile (CDP; Jones, 1989). This assessed how certain individuals are about their career choice using items such as, “I have decided on the occupation I want to enter; for example, electrical engineer, nurse, or cook.” Research has found internal consistency reliability

on scores from the decidedness subscale of .85 within a sample of undergraduate students; scores on the decidedness subscale displayed convergent validity as it was significantly and positively related to career salience (Jones, 1989; Wanberg & Muchinsky, 1992). In a more recent study that included nearly 2000 undergraduate students, Robertson, Benton, et al. (2006) found the Decidedness subscale to have one-month test-retest reliability of r = .66. Within the current study, the CDP Decidedness subscale had acceptable internal consistency reliability (α=.76).

Career adaptability was measured utilizing the Career Adapt-Abilities Scale (CAAS; Savickas & Porfeli, 2012). Career adaptability refers to "the attitudes, competencies, and behaviors that individuals use in fitting themselves to work that suits them" (Savickas, 2005, p. 45). The scale yields an overall Adaptability score as well as four subscale scores for Concern, Curiosity, Control, and Confidence. In an examination of samples from across 13 countries, Cronbach's alpha was found to be .95 for scores on the overall scale, and the alphas for scores on the four subscales were as follows: .88 for Concern, .89 for Control, .91 for Curiosity, and .92 for Confidence. Scores on the CAAS showed evidence of concurrent validity through significant correlations in expected directions with vocational identity (Porfeli & Savickas, 2012). In a sample of 412 undergraduate students within the U.S., Duffy, Douglass, and Autin (2015) found scores on the CAAS to have strong internal consistency reliability as well, with Cronbach's alpha at .94 for the overall scale, .86 for Concern, .86 for Control, .84 for Curiosity, and .90 for Confidence. Within the current study, excellent internal consistency reliability was found for scores on the overall scale (α=.91).

Academic satisfaction was measured using the 6-item Academic Major Satisfaction Scale (AMSS; Nauta, 2007). The AMSS measures students' contentment with their choice of major on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Nauta (2007) used confirmatory

factor analysis and found a one-factor structure and internal consistency reliability (α=.90) for the AMSS. Scores on the AMSS showed predictive validity as they were significantly related to retention in academic major; convergent validity was evident as scores on the AMSS were shown to correlate in expected directions with career decision self-efficacy and general indecisiveness. In a study examining a sample of 447 undergraduate students, Jadidian and Duffy (2012) found Cronbach's alpha for the AMSS scores to be .92, indicating excellent internal consistency reliability for a sample similar to the one in this study. Within the current study, excellent internal consistency reliability was also found (α=.92).

Career decision difficulties was measured using the 34-item Career Decision Difficulties Questionnaire (CDDQ; Gati, Krausz, & Osipow, 1996; Gati, Osipow, Krausz, & Saka, 2000). The CDDQ uses a 9-point scale ranging from 1 (does not apply to me) to 9 (fully applies to me) to measure three dimensions of career decision difficulty. Gati et al. (1996) found the scale to have excellent internal consistency reliability (α=.95) and good test-retest reliability (r=.80). In a sample of undergraduate students in the United States, Osipow and Gati (1998) found good convergent validity as the scale was found to be correlated positively with the Career Decision Scale (.77) and as the scale was negatively correlated with the Career Decision Self-Efficacy Scale (-.55). Concurrent validity was also evident as students who described themselves as "undecided" on their career path had the highest CDDQ scores, which were significantly higher than those who described themselves as "decided" (Osipow & Gati, 1998). Within the current study, excellent internal consistency reliability was also found (α=.95).

Psychological Well-Being. Psychological well-being was measured using three measures of three constructs: life satisfaction, positive and negative affect, and depression.

Life satisfaction was measured with the five-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). The items are completed on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Items include questions such as, "The conditions of my life are excellent." Diener et al. (1985) found scores on the SWLS to have strong internal consistency reliability for the SWLS (α=.84); scores on the SWLS also displayed evidence of convergent validity through significant correlations in expected directions with subjective well-being measures and personality measures such as self-esteem and neuroticism. In a review, Pavot and Diener (2009) report considerable evidence of convergent validity as the SWLS has consistently correlated with measures of subjective well-being. Judge (1990) found evidence of discriminant validity showed that the SWLS and positive affect were not adequately explained by a single latent trait. Within the current study, scores on the SWLS showed strong internal consistency reliability (α=.89).

Positive and negative affect were measured using the positive and negative affect subscales of the Positive and Negative Affect Schedule (PANAS-X; Watson & Clark, 1999). Each subscale includes ten items measured on a 5-point scale. Participants were asked to indicate the extent to which they have felt specific emotions over the past few weeks, including emotions such as "enthusiastic" and "strong" for positive affect as well as "afraid" and "nervous" for negative affect. Scores on these subscales showed good internal consistency reliability in several samples, ranging from alphas of .85 to .90 for the negative affect subscale and .83 to .90 for the positive affect subscale. Watson, Clark, and Tellegen (1988) found the both subscales to be correlated in expected directions with measures of anxiety, depression, and general distress. Within the current study, good internal consistency reliability was found for scores on both the positive affect and negative affect subscales, α=.89 and α=.87 respectively.

Depression and anxiety were measured with the depression and anxiety subscales of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983). The BSI is a 53 item scale that includes 9 subscales, including, depression, anxiety, hostility, and somatization. The depression and anxiety subscales each consist of 6 items which prompt participants to rate current distress.. Derogatis and Savitz (2000) reported strong internal consistency reliability for scores on the depression and anxiety subscales, α=.85 and α=.81 respectively. Derogatis (1993) found the depression and anxiety subscales to be correlated with the anxiety and depression components of the Symptom Checklist-90-R at levels greater than .90, providing evidence for convergent validity. The current study found strong internal consistency reliability for scores on both, with α=.91 for the depression subscale and α=.88 for the anxiety subscale.

RESULTS

Missing data analyses were conducted to determine the extent and impact of missing data in the sample. Little's Missing Completely At Random test was non-significant (p = .18), indicating that data were missing completely at random within the dataset. Given that the data were missing completely at random, listwise deletion and pairwise deletion are both considered an appropriate method for dealing with missing data (Allison, 2002). Within SPSS and Hayes Process Macro version 2.16.3 for SPSS (Hayes, 2012), which were used for analyses, listwise deletion removes any cases which are missing data within any of the measures utilized for each operation. This option was chosen to utilize as much of the data as possible. One drawback to this method is that it results in disparate numbers of participants within different analyses. Participants included in analyses range from 285 to 298.

Visual inspection of histograms and boxplots suggested that several variables were skewed. For small to moderate sample sizes, the skewness and kurtosis should not exceed 3.9 times the standard error of skewness and kurtosis, which would correspond with an alpha level of .001 (Tabachnick & Fidell, 2007). Examination of descriptive statistics confirmed that several variables exceeded these limits in terms of skewness. In order to meet assumptions of normality of variance and homogeneity of variance, transformations were utilized. Square-root transformations were run for Search for Calling, Search for Meaning in Life, Career Decidedness, Academic Major Satisfaction, Satisfaction with Life, and Negative Affect, which put their levels of skewness within appropriate limits. Logarithmic transformations were utilized to transform Depressive and Anxious Symptomology; after these transformations their skewness fell within appropriate limits for normal distribution. After transformation, the Academic Major

Satisfaction scale had kurtosis that exceeded limits for normality; however, at samples over 200 the underestimation of variance associated with negative kurtosis disappears (Waternaux, 1976), so analyses were run at this point. These values can be found in Table 1. Means, standard deviations, range and correlations for all variables can be found in Table 2. Because transformed variables yield values that are not possible to interpret in terms of the original scale, analyses were run for both transformed and non-transformed scales for the sake of comparison and interpretation. In all analyses, transformed and non-transformed variables had similar patterns of results, so analyses with non-transformed variables are presented for the sake of interpretatio

Table 1

Skewness and Kurtosis Values

	Skewness	*SE(skewness)*	*Kurtosis*	*SE(kurtosis)*
1. TAS	0.24	0.14	-0.39	0.28
2. CVQ-P	-0.38	0.14	-0.03	0.28
3. CVQ-S*	-0.03	0.14	-0.40	0.28
4. MLQ-P	-0.47	0.14	-0.23	0.28
5. MLQ-S*	-0.08	0.14	-0.34	0.28
6. CAAS	-0.06	0.14	0.02	0.29
7. AMSS*	0.23	0.14	-1.29	0.28
8. CDP-D*	0.31	0.14	-0.72	0.28
9. CDDQ	0.08	0.15	-0.68	0.30
10. SWLS*	-0.11	0.14	-0.28	0.28
11. PANAS-P	-0.41	0.14	0.32	0.29
12. PANAS-N*	0.13	0.14	0.00	0.29
13. BSI-D*	-0.83	0.14	-0.83	0.29
14. BSI-A*	0.38	0.14	-0.62	0.29

Note: * = transformed variables; TAS = Toronto Alexithymia Scale Total Score; CVQ-P = Calling Vocational Questionnaire, Presence of Calling subscale; CVQ-S = Calling Vocational Questionnaire, Search for Calling subscale; MLQ-P = Meaning in Life Questionnaire, Presence of Meaning subscale; MLQ-S = Meaning in Life Questionnaire, Search for Meaning subscale; CAAS = Career Adapt-Abilities Scale; AMSS = Academic Major Satisfaction Scale; CDP–D = Career Decision Profile, Decidedness subscale; CDDQ = Career Decision Difficulty Questionnaire; SWLS = Satisfaction with Life Scale; PANAS-P = Positive and Negative Affect Scale, Positive Affect subscale; PANAS-N = Positive and Negative Affect Scale, Negative Affect subscale; BSI-D = Brief Symptom Inventory, Depression subscale; BSI-A = Brief Symptom Inventory, Anxiety subscale

Table 2

Correlations and Internal Consistencies Reliabilities for Variables In Analysis

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. TAS	*0.85*													
2. CVQ-P	-0.11	*0.85*												
3. CVQ-S	-0.03	0.58**	*0.88*											
4. MLQ-P	-0.49**	0.40**	0.03	*0.88*										
5. MLQ-S	0.15**	0.28**	0.58**	-0.23**	*0.89*									
6. AMSS	-0.36**	0.31**	0.03	0.38**	-0.07	*0.93*								
7. CAAS	-0.33**	0.37**	0.14*	0.44**	0.00	0.25**	*0.91*							
8. CDP-D	-0.20**	0.25**	-0.09	0.36**	-0.10	0.33**	0.23**	*0.77*						
9. CDDQ	0.42**	-0.17**	0.15*	-0.42**	0.19**	-0.46**	-0.19**	-0.49**	*0.95*					
10. PANAS-P	-0.37**	0.31**	0.08	0.51**	-0.09	0.28**	0.61**	0.22**	-0.21**	*0.89*				
11. PANAS-N	0.50**	-0.05	0.07	-0.41**	0.20**	-0.31**	-0.19**	-0.10	0.31**	-0.31**	*0.87*			
12. BSI-D	0.50**	-0.10	0.11	-0.48**	0.28**	-0.33**	-0.32**	-0.13*	0.32**	-0.49**	0.66**	*0.91*		
13. BSI-A	0.48**	-0.02	0.06	-0.38**	0.20**	-0.28**	-0.22**	-0.09	0.28**	-0.39**	0.71**	0.75**	*0.88*	
14. SWLS	-0.44**	0.16**	0.00	0.55**	-0.20**	0.30**	0.39**	0.18**	-0.28	0.55**	-0.42**	-0.55**	-0.43**	*0.89*
Mean	49.59	33.44	35.94	23.86	26.26	24.10	83.42	12.81	12.59	33.99	24.59	12.33	11.93	24.73
SD	11.92	6.94	7.17	6.28	6.15	5.76	14.63	2.97	4.45	7.84	8.04	5.91	5.40	6.50

* $p < .05$, ** $p < .01$; Cronbach's alphas for each scale are listed in italics; Spearman's rho is provided for each correlation as it is robust to violations of normality (Kowalski, 1972)

Scales: TAS = Toronto Alexithymia Scale Total Score; CVQ-P = Calling and Vocation Questionnaire, Presence; CVQ-S = Calling and Vocation Questionnaire, Search; MLQ-P = Meaning in Life Questionnaire, Presence; MLQ-S = Meaning in Life Questionnaire, Search; CAAS = Career Adapt-Abilities Scale AMSS = Academic Major Satisfaction Scale; CDP–D = Career Decision Profile, Decidedness; CDDQ - Career Decision Difficulty Questionnaire; PANAS-P = Positive and Negative Affect Scale, Positive Affect PANAS-N = Positive and Negative Affect Scale, Negative Affect; BSI-D = Brief Symptom Inventory, Depression; BSI-A = Brief Symptom Inventory, Anxiety; SWLS = Satisfaction with Life Scale

Hypothesis 1a

Hypothesis 1a stated that alexithymia would predict presence of MIL. A single linear regression analysis was run in which presence of meaning in life was regressed on alexithymia; alexithymia was a significant negative predictor of presence of MIL (b = -0.26 $SE(b)$ = .03, β = -0.49, t = -9.69, p < .01, 95% CI [-0.31,-0.21]). Alexithymia accounted for 24.4% of the variance in presence of MIL, supporting this hypothesis.

Hypothesis 1b

Hypothesis 1b stated that presence of MIL would mediate the relationship between alexithymia and psychological well-being. To test this, several mediation analyses were run utilizing Hayes Process Macro version 2.16.3 for SPSS (Hayes, 2012), with each model using 5000 bootstrap samples for bias corrected bootstrap confidence intervals. Mediation analyses were run to examine if presence of MIL mediated the relationship between alexithymia and satisfaction with life, positive affect, negative affect, depressive symptomology, and anxious symptomology.

To determine if presence of MIL mediated the relationship between alexithymia and satisfaction with life, several regression models were run. First, satisfaction with life was regressed on alexithymia. Second, presence of MIL was regressed on alexithymia. Finally, satisfaction with life was regressed on alexithymia and presence of MIL. The results can be found below in Table 3 and Figure 1. Results of the Sobel test revealed an indirect effect of -.13 (p < .001), indicating that the effect of alexithymia on satisfaction with life was significantly mediated by presence of meaning in life. Given that the ratio of the indirect effect (-.13) to the effect of alexithymia on satisfaction with

life (-.23) indicated that 56.5% of the observed effect of alexithymia on satisfaction with life was accounted for by presence of MIL, partial mediation was supported by the analyses. The overall model was found to be significant ($F = 78.91$, $p < .001$) and to account for 30% of the variance in satisfaction with life.

Table 3

Presence of Meaning in Life as a Mediator Between Alexithymia and Satisfaction with Life

	b	*SE(b)*	t	95% CI		R^2
				Lower	Upper	
Criterion Variable: Satisfaction with Life						
Alexithymia	-0.23	0.03	-8.120***	-0.29	-0.17	0.18
Criterion Variable: Presence of Meaning in Life						
Alexithymia	-0.26	0.03	-9.69***	-0.31	-0.21	0.24
Criterion Variable: Satisfaction with Life						
Presence of Meaning in Life	0.49	0.06	8.67***	0.38	0.60	
Alexithymia	-0.11	0.03	-3.63***	-0.17	-0.05	0.30

* $p < .05$, ** $p < .01$, *** $p < .001$. Indirect effect = -0.13***.

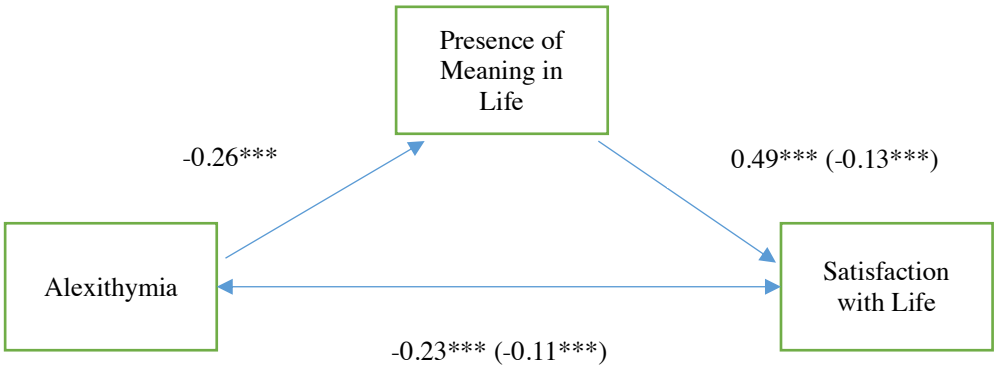

Figure 1. Presence of MIL as a mediator between alexithymia and satisfaction with life. Numbers in parentheses represent indirect effect of the mediator and direct effect of predictor on criterion variable after controlling for mediating variable. *p < .05, ** p < .01 *** p < .001

To determine if presence of MIL mediated the relationship between alexithymia and positive affect, several regression models were run. First, positive affect was regressed on alexithymia. Second, presence of MIL was regressed on alexithymia. Finally, positive affect was regressed on alexithymia and presence of MIL. The results can be found below in Table 4 and Figure 2. Results of the Sobel test revealed an indirect effect of -.14 ($p < .001$), indicating that the effect of alexithymia on positive affect was significantly mediated by presence of meaning in life. Given that the ratio of the indirect effect (-.14) to the effect of alexithymia on positive affect (-.27) indicated that 52.4% of the observed effect of alexithymia on positive affect was accounted for by presence of MIL, partial mediation was supported by the analyses. The overall model was found to be significant ($F = 61.39$, $p < .001$) and to account for 30.3% of the variance in positive affect.

Table 4

Presence of Meaning in Life as a Mediator Between Alexithymia and Positive Affect

	b	*SE(b)*	t	95% CI		R^2
				Lower	Upper	
Criterion Variable: Positive Affect						
Alexithymia	-0.27	0.04	-7.49***	-0.34	-0.20	0.17
Criterion Variable: Presence of Meaning in Life						
Alexithymia	-0.26	0.03	-9.69***	-0.31	-0.21	0.24
Criterion Variable: Positive Affect						
Presence of Meaning in Life	0.53	0.07	7.47***	0.39	0.67	
Alexithymia	-0.13	0.04	-3.38**	-0.20	-0.05	0.30

* $p < .05$, ** $p < .01$, *** $p > .001$. Indirect effect = -0.14***

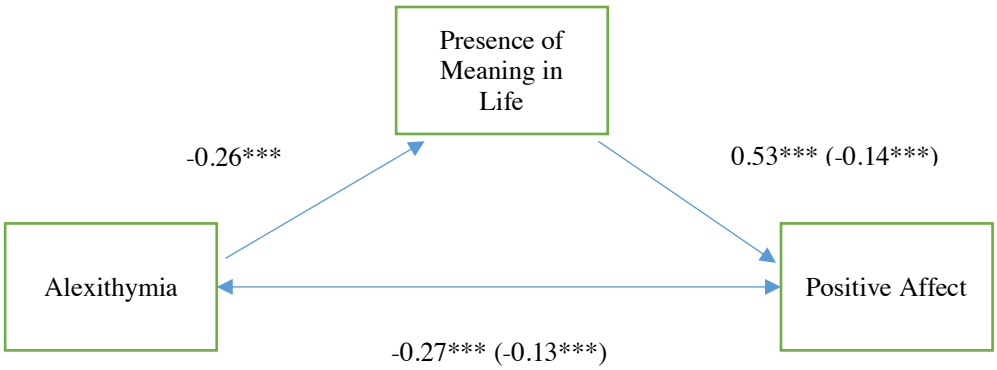

Figure 2. Presence of MIL as a mediator between alexithymia and positive affect. Numbers in parenthesis represent indirect effect of the mediator and direct effect of predictor on criterion variable after controlling for mediating variable. *p < .05, ** p < .01 *** p < .001

To determine if presence of MIL mediated the relationship between alexithymia and negative affect, several regression models were run. First, negative affect was regressed on alexithymia. Second, presence of MIL was regressed on alexithymia. Finally, negative affect was regressed on alexithymia and presence of MIL. The results can be found below in Table 5 and Figure 3. Results of the Sobel test revealed an indirect effect of -.06 ($p < .05$), indicating that the effect of alexithymia on negative affect was significantly mediated by presence of meaning in life. Given that the ratio of the indirect effect (.06) to the effect of alexithymia on negative affect (.35) indicated that 19.4% of the observed effect of alexithymia on negative affect was accounted for by presence of MIL, partial mediation was supported by the analyses. The overall model was found to be significant ($F = 59.57$, $p < .001$) and to account for 30% of the variance in negative affect.

Table 5

Presence of Meaning in Life as a Mediator Between Alexithymia and Negative Affect

	b	*SE(b)*	t	95% CI		R^2
				Lower	Upper	
Criterion Variable: Negative Affect						
Alexithymia	0.35	0.04	10.24***	0.28	0.42	0.27
Criterion Variable: Presence of Meaning in Life						
Alexithymia	-0.26	0.03	-9.69***	-0.31	-0.21	0.24
Criterion Variable: Negative Affect						
Presence of Meaning in Life	-0.24	0.07	-3.26**	-0.38	-0.09	
Alexithymia	0.29	0.04	7.41***	0.21	0.37	0.30

* $p < .05$, ** $p < .01$, *** $p > .001$. Indirect effect = -0.06*

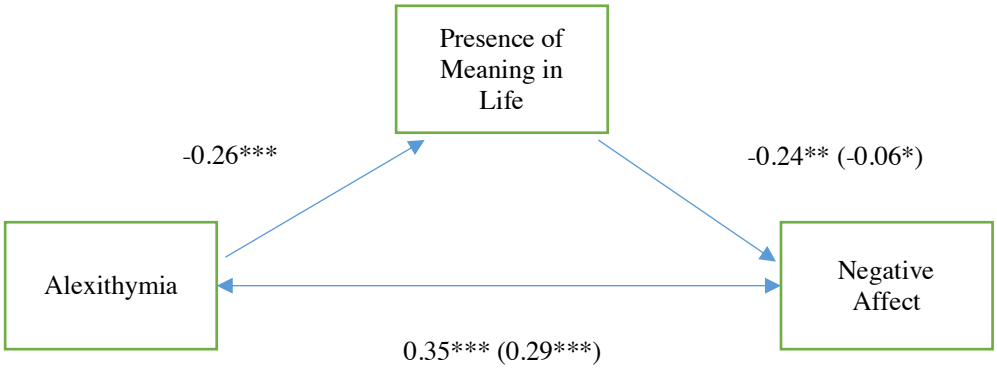

Figure 3. Presence of MIL as a mediator between alexithymia and negative affect. Numbers in parenthesis represent indirect effect of the mediator and direct effect of predictor on criterion variable after controlling for mediating variable. *p < .05, ** p < .01 *** p < .001

To determine if presence of MIL mediated the relationship between alexithymia and depressive symptoms, several regression models were run. First, depressive symptoms were regressed on alexithymia. Second, presence of MIL was regressed on alexithymia. Finally, depressive symptoms were regressed on alexithymia and presence of MIL. The results can be found below in Table 6 and Figure 4. Results of the Sobel test revealed an indirect effect of .08 ($p < .001$), indicating that the effect of alexithymia on depressive symptoms was significantly

mediated by presence of meaning in life. Given that the ratio of the indirect effect (.08) to the effect of alexithymia on depressive symptoms (.26) indicated that 30.1% of the observed effect of alexithymia on depressive symptoms was accounted for by presence of MIL, partial mediation was supported by the analyses. The overall model was found to be significant ($F = 70.14$, $p < .001$) and to account for 33.1% of the variance in depressive symptoms.

Table 6

Presence of Meaning in Life as a Mediator Between Alexithymia and Depressive Symptoms

Variable	*b*	*SE(b)*	t	95% CI		R^2
				Lower	Upper	
Criterion Variable: Depressive Symptoms						
Alexithymia	0.26	0.03	9.96***	0.19	0.33	0.26
Criterion Variable: Presence of Meaning in Life						
Alexithymia	-0.26	0.03	-9.69***	-0.31	-0.21	0.24
Criterion Variable: Depressive Symptoms						
Presence of Meaning in Life	-0.29	0.05	-5.55***	-0.39	-0.19	
Alexithymia	0.18	0.03	6.35***	0.12	0.23	0.33

* $p < .05$, ** $p < .01$, *** $p > .001$. Indirect effect = 0.08***

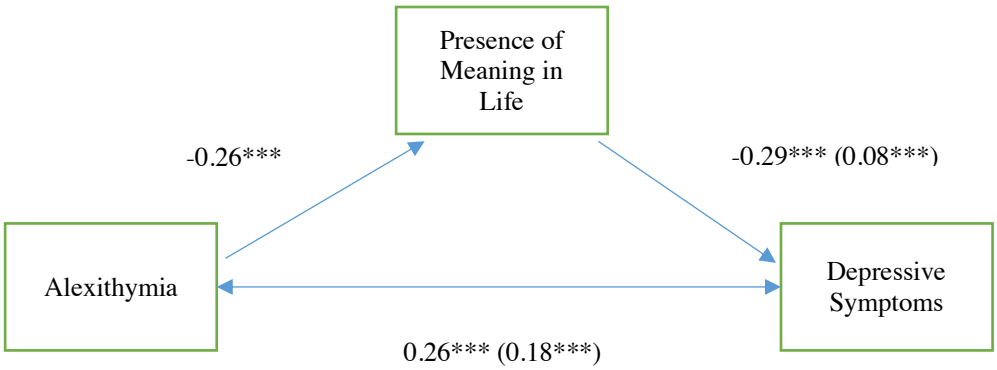

Figure 4. Presence of MIL as a mediator between alexithymia and depressive symptoms. Numbers in parenthesis represent indirect effect of the mediator and direct effect of predictor on criterion variable after controlling for mediating variable. *p < .05, ** p < .01 *** p < .001

To determine if presence of MIL mediated the relationship between alexithymia and anxious symptomology, several regression models were run. First, anxious symptoms were regressed on alexithymia. Second, presence of MIL was regressed on alexithymia. Finally, anxious symptomology regressed on alexithymia and presence of MIL. The results can be found below in Table 7 and Figure 5. Results of the Sobel test revealed an indirect effect of .04 ($p <$ .01), indicating that the effect of alexithymia on anxious symptoms was significantly mediated by presence of meaning in life. Given that the ratio of the indirect effect (.04) to the effect of alexithymia on anxious symptoms (.23) indicated that 17.2% of the observed effect of alexithymia on anxious symptoms was accounted for by presence of MIL, partial mediation was supported by the analyses. The overall model was found to be significant ($F = 53.12$, $p < .001$) and to account for 27.4% of the variance in anxious symptoms.

Table 7

Presence of Meaning in Life as a Mediator Between Alexithymia and Anxious Symptoms

Model and Variable	*b*	*SE(b)*	t	95% CI		R^2
				Lower	Upper	
Model 1: Criterion Variable: Anxious Symptoms						
Alexithymia	0.23	0.02	9.72***	0.19	0.27	0.25
Model 2: Criterion Variable: Presence of Meaning in Life						
Alexithymia	-0.26	0.03	-9.69***	-0.31	-0.21	0.24
Model 3: Criterion Variable: Anxious Symptoms						
Presence of Meaning in Life	-0.14	0.05	-3.01**	-0.25	-0.05	
Alexithymia	0.19	0.03	7.11***	0.14	0.24	0.27

* $p < .05$, ** $p < .01$, *** $p > .001$. Indirect effect = 0.04**

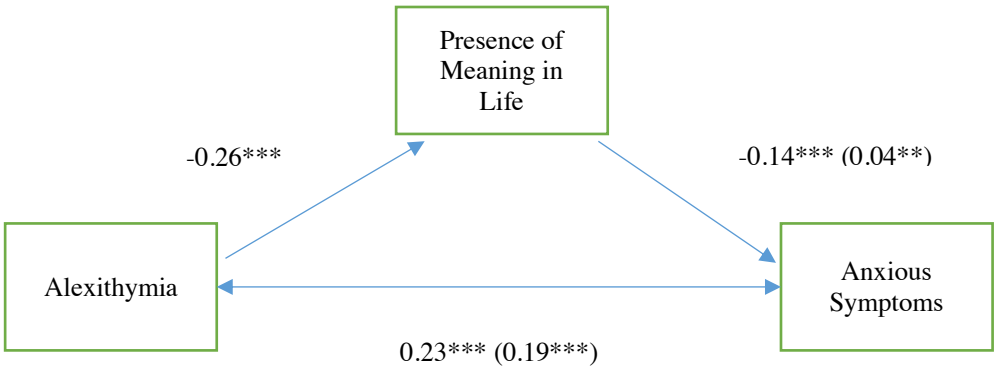

Figure 5. Presence of MIL as a mediator between alexithymia and anxious symptoms. Numbers in parenthesis represent indirect effect of the mediator and direct effect of predictor on criterion variable after controlling for mediating variable. *p < .05, ** p < .01 *** p < .001

Hypothesis 2a

Hypothesis 2a stated that alexithymia would predict presence of calling. A single linear regression analysis was run in which presence of calling was regressed on alexithymia; the relationship between alexithymia and presence of calling was not significant (b = -0.05 *SE(b)* = .03, β = -0.08, t = -1.37, p = 0.173, 95% CI [-0.11, 0.02]).

Hypothesis 2b

Hypothesis 2b stated the intention to explore the relationship between alexithymia and career development well-being. Several single linear regressions were run to regress career decidedness, career decision difficulty, academic major satisfaction, and career adaptability on alexithymia. First, the relationship between alexithymia and career decidedness was significant and positive (b = -0.04 *SE(b)* = .01, β = -0.16, t = 2.838, p < .01). The analysis indicated a small relationship between alexithymia and career decidedness (r = 0.16) such that alexithymia accounted for 2.6% of the variance in career decidedness (r^2 = 0.026). Second, the relationship between alexithymia and academic major satisfaction was significant and negative (b = -0.18 *SE(b)* = .03, β = -0.37, t = -6.78, p < 0.001). The analysis indicated a medium-sized relationship between alexithymia and academic major satisfaction (r = 0.37) such that alexithymia accounted

for 13.4% of the variance in academic major satisfaction ($r^2 = 0.134$). Third, the relationship between alexithymia and career decision difficulty was significant and positive ($b = 0.17$ $SE(b) = .02$, $\beta = 0.44$, $t = 7.93$, $p < 0.001$). The analysis indicated a medium-sized relationship between alexithymia and academic major satisfaction ($r = 0.44$) such that alexithymia accounted for 19.2% of the variance in academic major satisfaction ($r^2 = 0.192$). Finally, the relationship between alexithymia and career adaptability was significant and negative ($b = -0.40$ $SE(b) = .07$, $\beta = -0.32$, $t = -5.76$ $p < 0.001$). The analysis indicated a medium-sized relationship between alexithymia and career adaptability ($r = 0.323$) such that alexithymia accounted for 10.4% of the variance in career adaptability ($r^2 = 0.104$).

Hypothesis 2c

As hypothesis 2a was not significant, the potential meditational relationship predicted in hypothesis 2c was unsupported.

Hypothesis 3

Hypothesis 3 stated that alexithymia would moderate the relationship between presence of MIL and psychological well-being. To test this hypothesis, several moderation analyses were run utilizing Hayes' Process Macro version 2.16.3 for SPSS (Hayes, 2012). Moderation analyses were run to examine if alexithymia moderated the relationship between presence of MIL and satisfaction with life, positive affect, negative affect, depressive symptomology, and negative symptomology. Predictor and moderator variables in each analysis were centered by subtracting the mean from each variable in order to avoid multicollinearity (Hayes, 2013). These variables were then multiplied to create the interaction term. In step one of moderation analyses, the predictor and moderator variables – in this case, presence of meaning in life and alexithymia - were analyzed individually to see if they had significant relationships to outcome variables. In

step two, the interaction term was added to the analysis, and the interaction was probed by re-centering the moderator at one standard deviation above and below the mean. None of the interaction terms within these models were significant, meaning that the relationship between presence of MIL and psychological well-being variables did not change based upon alexithymia scores. Thus, hypothesis 3 was unsupported. Results can be seen in Tables 8-12.

Table 8
Alexithymia as a Moderator of the Relationship Between Presence of MIL and Satisfaction with Life

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	-0.11	0.10	-1.08	-0.31	0.09		
Presence of MIL	0.48	0.22	2.24*	0.03	0.91	0.35	
Step 2							
MLQ-P*TAS-20	0.00	0.00	0.01	-0.01	0.01		0.00

* $p < .05$, ** $p < .01$, *** $p < .001$.
MLQ-P = Presence of MIL, TAS-20 = Alexithymia

Table 9
Alexithymia as a Moderator of the Relationship Between Presence of MIL and Positive Affect

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	-0.18	0.13	-1.43	-0.44	0.07		
Presence of MIL	0.41	0.28	1.47	-0.14	0.95	0.30	
Step 2							
MLQ-P*TAS-20	0.00	0.01	0.45	-0.01	0.01		0.00

* $p < .05$, ** $p < .01$, *** $p < .001$.
MLQ-P = Presence of MIL, TAS-20 = Alexithymia

Table 10
Alexithymia as a Moderator of the Relationship Between Presence of MIL and Negative Affect

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	0.30	0.13	2.23*	0.04	0.56		
Presence of MIL	-0.22	0.29	-0.78	-0.79	0.34	0.30	
Step 2							
MLQ-P*TAS-20	0.00	0.01	-0.05	-0.01	0.01		0.00

* $p < .05$, ** $p < .01$, *** $p < .001$.
MLQ-P = Presence of MIL, TAS-20 = Alexithymia

Table 11
Alexithymia as a Moderator of the Relationship Between Presence of MIL and Depressive Symptomology

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	0.23	0.09	2.44*	0.05	0.42		
Presence of MIL	-0.17	0.20	-0.83	-0.57	0.23	0.33	
Step 2							
MLQ-P*TAS-20	0.00	0.00	-0.60	-0.01	0.01		0.00

* $p < .05$, ** $p < .01$, *** $p < .001$.
MLQ-P = Presence of MIL, TAS-20 = Alexithymia

Table 12
Alexithymia as a Moderator of the Relationship Between Presence of MIL and Anxious Symptomology

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	0.34	0.09	3.78***	0.16	0.52		
Presence of MIL	0.18	0.19	0.94	-0.20	0.57	0.33	
Step 2							
MLQ-P*TAS-20	-0.01	0.00	-1.77	-0.01	0.00		0.01

* $p < .05$, ** $p < .01$, *** $p < .001$.
MLQ-P = Presence of MIL, TAS-20 = Alexithymia

Hypothesis 4

Hypothesis 4 stated that alexithymia would moderate the relationship between presence of calling and career development well-being. To test this hypothesis, several moderation analyses were run utilizing Hayes Process Macro version 2.16.3 for SPSS (Hayes, 2012). Moderation analyses were run to examine if alexithymia moderated the relationship between presence of calling and career decidedness, career decision difficulty, academic major satisfaction, and career adaptability. Predictor and moderator variables in each analysis were centered by subtracting the mean from each variable in order to avoid multicollinearity (Hayes, 2013). These variables were then multiplied to create the interaction term. In step one of moderation analyses, the predictor and moderator variables – in this case, presence of calling and alexithymia - were analyzed individually to see if they had significant relationships to outcome variables. In step two, the interaction term was added to the analysis, and the interaction was probed by re-centering the moderator at one standard deviation above and below the mean. None of the interaction terms within these models were significant, meaning that the impact of presence of calling on career development well-being variables did not change based upon alexithymia scores. Thus, hypothesis 4 was unsupported. Results can be seen in Tables 13-16.

Table 13
Alexithymia as a Moderator of the Relationship Between Presence of Calling and Career Decidedness

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	-0.08	0.07	0.24	-0.22	0.05		
Presence of Calling	0.04	0.10	0.37	-0.15	0.23	0.08	
Step 2							
CVQ-P*TAS-20	0.00	0.00	0.68	-0.01	0.01		0.00

* $p < .05$, ** $p < .01$, *** $p < .001$.
CVQ-P = Presence of Calling, TAS-20 = Alexithymia

Table 14

Alexithymia as a Moderator of the Relationship Between Presence of Calling and Career Decision Difficulty

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	0.15	0.11	1.39	-0.06	0.36		
Presence of Calling	-0.08	0.15	-0.56	-0.39	0.22	0.20	
Step 2							
CVQ-P*TAS-20	0.00	0.00	0.10	-0.01	0.01		0.00

* $p < .05$, ** $p < .01$, *** $p < .001$.

CVQ-P = Presence of Calling, TAS-20 = Alexithymia

Table 15

Alexithymia as a Moderator of the Relationship Between Presence of Calling and Academic Major Satisfaction

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	-0.29	0.12	-2.36*	-0.53	-0.05		
Presence of Calling	0.06	0.17	0.36	-0.28	0.41	0.20	
Step 2							
CVQ-P*TAS-20	0.00	0.00	1.01	-0.01	0.01		0.00

* $p < .05$, ** $p < .01$, *** $p < .001$.

CVQ-P = Presence of Calling, TAS-20 = Alexithymia

Table 16

Alexithymia as a Moderator of the Relationship Between Presence of Calling and Career Adaptability

Step and Variable	*b*	*SE(b)*	t	95% CI		R^2	ΔR^2
				Lower	Upper		
Step1							
Alexithymia	-0.98	0.32	-3.05**	-1.61	-0.35		
Presence of Calling	-0.12	0.46	-0.26	-1.02	0.78	0.24	
Step 2							
CVQ-P*TAS-20	0.02	0.01	1.96	-0.01	0.04		0.01

* $p < .05$, ** $p < .01$, *** $p < .001$.

CVQ-P = Presence of Calling, TAS-20 = Alexithymia

Research Question 1

Research question one stated the intention to explore the relationship between alexithymia and search for MIL. To examine this relationship, a single linear regression was utilized to regress search for MIL on alexithymia. The analysis revealed a significant relationship between search for MIL and alexithymia (b = 0.10 $SE(b)$ = .03, β = 0.20, t = 3.41, p <.01). This indicates a small, positive relationship between alexithymia and search for MIL, with 3.8% of the variance of search for MIL being explained by level of alexithymia (r^2 = 0.038).

Research Question 2

Research question two stated the intention to explore the relationship between alexithymia and search for calling. To examine this relationship, a single linear regression was utilized to regress search for calling on alexithymia. The analysis revealed that the relationship between search for calling and alexithymia was non-significant (b = 0.00 $SE(b)$ = .04, β = -0.01, t = -0.01, p = 0.99).

DISCUSSION

This study tested several ways in which alexithymia might relate to MIL and calling, as well as testing interactional models such that alexithymia might interact with MIL and calling on the attending criterion variables of psychological well-being and career development well-being. Alexithymia showed a significant, negative correlation with presence of MIL in the analyses (hypothesis 1a), supporting the notion that MIL is related to individual emotional skills. Further, mediation analyses found that presence of MIL partially mediated the relationship between alexithymia and psychological well-being. This indicates that alexithymia and presence of MIL interact to impact psychological well-being. Given the cross-sectional nature of this study, causal relationships could not be tested, and this leaves the possibility of multiple causal potentialities. Alexithymia may negatively impact one's ability to perceive meaning in one's life and thus hinder one's ability to experience the psychological benefits of MIL, lacking meaning in one's life may make it difficult to discern how one feels about one's experiences, alexithymia and MIL may mutually influence each other, or a third variable may influence both alexithymia and MIL. Alexithymia showed no significant relationship with presence of calling (hypothesis 2a), and thus it may be the case that emotional skills have minimal direct impact on calling.

What seems evident from this study and an emerging line of research (e.g., King et al., 2006; Abeyta et al., 2015) is that emotional processes have a substantial relationship with meaning in life. This project extends previous research to provide evidence that the foundational emotional processes of identifying and describing one's own emotional experience, i.e. the skills that alexithymia limits, are directly related to meaning in life. Models of meaning in life that include affective processes (e.g., Reker & Wong, 1988) are thus bolstered by these findings, and

interventions aimed at fostering meaning in life should seek to integrate or account for affective components if they are to be comprehensive and effective.

This study did not find a significant relationship between presence of calling and alexithymia. This may indicate several things, the first being that calling may not be directly related to the skills that alexithymia limits. As calling, based on the definition utilized in this study, emphasizes prosocial motivation, empathy may more directly capture emotional elements related to calling. The alexithymia measure used in this study does not directly measure empathy but instead measures identification and description of one's own emotions, so the lack of a relationship between alexithymia and calling may indicate that one's own emotions are not a core component of calling while other emotional processes such as empathy are at play.

On the other hand, the lack of a relationship between calling and alexithymia may highlight a limitation of the definition and measure of calling used in this study. While some definitions of calling, specifically the definition used by Dobrow (2004), emphasize the passion an individual feels toward their work, Dik and Duffy's (2009) definition does not include a sense of passion for one's work. The measure of calling in this study may thus be focused on cognitive elements of calling and may not assess self-focused emotional processes such as alexithymia or other-focused emotional processes such as empathy that are related to calling. This reveals important considerations for future research that will be discussed later.

There was no support within the analyses for alexithymia acting as a moderator between presence of MIL and psychological well-being or between presence of calling and career development well-being. Thus, the relationships between presence of MIL and psychological well-being and between calling and career development well-being do not change at varying levels of alexithymia based on this dataset.

The analyses revealed a significant, small, positive relationship between alexithymia and search for MIL. Given that this relationship was so small, with alexithymia only accounting for 3.8% of the variance in search for MIL, interpretations should be made with caution. Steger, Kashdan, Sullivan, and Lorentz (2008) provided evidence that search for MIL is inversely correlated with presence of MIL, indicating that people who are high in search have difficulty identifying meaning in their lives. Alexithymia, based on this study, may account for some of the difficulty in identifying meaning as individuals who have difficulty identifying and describing emotions may be inhibited from experiencing meaning. There was no significant relationship between alexithymia and search for calling.

Theoretical Implications

The findings of a direct relationship between alexithymia and presence on MIL furthers research such as Abeyta, Routledge, Juhl, and Robinson (2015) that indicates that emotional capacities play a role in individual's ability to find meaning in their lives. This makes sense given links between positive affect and meaning, with positive affect being shown as a predictor of presence (e.g., King et al., 2006 & Abeyta et al., 2015). Given that Mayer and Gaschke (1988) highlight that a reflective process occurs following the perception of emotions, any impediments or difficulties in perceiving one's emotional experiences would impact one's ability to make meaning from emotional experiences. This fits within Reker and Wong's (1988) model for meaning, which posits an emotional component that interacts with cognitive and motivational components of meaning making. Alexithymia may lead to impairment in a person's ability to comprehend affective feedback that would theoretically shape their beliefs and values along with serving as galvanization for taking meaning-centered action.

The finding that presence of MIL partially mediates the relationship between alexithymia and psychological well-being indicates that there may be a causal relationship between alexithymia and presence of MIL that contributes to psychological well-being. Given that this study was cross-sectional, causal inferences cannot be made. Alexithymia may make it difficult for individuals to derive meaning from their lives and thus diminish the benefits that presence of MIL provides, or lacking MIL may make it difficult for individuals to orient to and make sense of their emotional experiences and thus have diminished psychological well-being. The former conclusion, that alexithymia inhibits meaning-making, fits most clearly with Reker and Wong's (1988) model, and future research should be designed to test causal implications.

The lack of significant relationships between calling and alexithymia means that understanding one's own affective experience either a) may not be directly related to calling and thus definitions of calling should not directly reference emotional elements or b) may not be properly addressed by the definition of calling proposed by Dik and Duffy (2009) and the subsequent Calling and Vocation Questionnaire that was based upon it (Dik et al., 2012). The lack of a relationship may in part be due to the centering of prosocial behavior and the greater good within calling. As discussed within the literature review, Dik and Steger (2015) argued that empathy may be key to discerning a calling within one's life. Empathy and alexithymia are related but distinct factors (see, for instance, Grynberg, Luminet, Cornielle, Grèzes, & Berthoz, 2010); thus, affective constructs that impact calling are potentially less a matter of understanding one's own emotions than understanding the emotions of others. Implications for future research will be discussed later in this paper.

Diving a bit deeper into empathy, the conceptualization of empathy can be broken down into cognitive and affective empathy (Walter, 2012). Cognitive empathy refers to the ability to

make sense of another's emotional experience without necessarily having an affective experience oneself, while affective empathy refers to having an emotional experience that is closely related to the person one is empathizing with. Dik and Duffy's (2009) definition of calling and the Calling and Vocation Questionnaire (Dik et al., 2012) may capture elements of cognitive empathy that drive a sense of being called to prosocial work while perhaps neglecting elements of affective empathy that move individuals to address the common good through their work. Dik and Steger (2015) explore the theoretical relationship between empathy and calling; however, to date no research has directly examined links between quantitative measures of empathy and calling. Thus, future research should examine empathy in both affective and cognitive ways to flesh out if and how it relates to calling.

Practical Implications

The findings of this study have implications for clinical practice. Existential Psychotherapy (Spinelli, 2007) and Logotherapy (Frankl, 1963) represent two related methods by which psychologists intervene with individuals in an effort to aid with the quest for understanding and meaning within one's life. According to Frankl, the drive to understand meaning and purpose in one's life is a fundamental part of the human experience. Finding meaning can reduce spiritual and emotional suffering, and losing meaning can lead to existential emptiness, hopelessness, and other negative outcomes. In outlining existential psychotherapy, Spinelli (2007) identifies three core principles of existential psychotherapy: Relatedness (or inter-relation), Existential Uncertainty, and Existential Anxiety. Relatedness refers to the notion that individual humans cannot be understood in isolation but instead through their fundamental relatedness with others and the world around them. Existential Uncertainty refers to the idea that the human inclination to reflection on meaning and purpose is characterized by a basic

uncertainty; because we can never fully know the experience of others, our reflections on meaning lack completeness. Finally, Existential Anxiety is a result of the first two principles; because of our inter-relatedness and basic uncertainty, we experience anxiety such that we have an impulse to resolve uncertainty and understand our relatedness to our lives. Given the findings here related to alexithymia and presence of MIL, further evidence supports a connection between emotional processes and meaning-making processes. Paradigms such as logotherapy and existential psychotherapy must include adequate emotional processing not just for the sake of affective coping skills but also in order to aid individuals with making meaning in their lives.

The present findings also have implications for career counseling. In the work-related domain, a leading paradigm for career counseling is Life Design (Savickas et al., 2009). Savickas et al. (2009) frame the issues surrounding career counseling in the 21st Century as needing to center "the interaction between personal agency and social structure" as the question to guide how psychologists understand the process of career development. This marks several shifts, particularly moving from a prescriptive, linear, and scientific fact centered approach to a more holistic, narrative, and contextual means of supporting people through career counseling. Savickas et al. (2009) describe Life Design's goals as emphasizing narratability and intentionality, both of which entail a meaning making process of reflecting upon one's experience to build a narrative and make choices regarding one's present and future.

In order to understand the complexity and nuance this brings to career counseling, it is useful to consider personality and individual differences in the context of career counseling. McAdams' model of personality (McAdams, 1996; McAdams & Pals, 2006) posits three levels of personality: 1) dispositional traits (e.g., emotionality, agreeableness), 2) characteristic adaptations (including things like values and coping strategies), and 3) integrative narratives

(e.g., purpose and meaning). Considering the shifts in career counseling Savickas' et al. (2009) spoke to, career counseling is likely to be most effective if tailored to the individual. Thus, an individual with a dispositional tendency toward high emotionality may call for career counseling that focuses explicitly on emotional content for counseling to be most effective, whereas for an individual low in dispositional emotionality a focus on emotional components may be counter-productive. As Life Design emphasizes narratives and context within career counseling (Savickas et al., 2009), being able to place an individual's personality attributes within the context of their environments and life events is essential to fully supporting a client on their career path. The lack of a relationship between calling and alexithymia implies that emotional capabilities may not have a generalizable impact on finding meaning within one's work. However, given that alexithymia had clear relationships with career development well-being factors, emotional processes should be attended to in career counseling practice, and emotionality and the impact of emotional events within a client's life should be considered in designing career counseling interventions.

Limitations and Future Directions

A primary limitation of this project is its cross-sectional design. While discussion of the findings included some examination of possible causal relationships between the factors being examined, the cross-sectional method used means causal relationships cannot be tested as such. Future research, for one, should test potential causal relationships between alexithymia and MIL. In particular, it would be useful to collect longitudinal data as this would allow the examination of causal relationships to determine if alexithymia limits the ability to have meaning, if lacking meaning limits the ability to identify and describe one's own emotions, or if the two factors have a mutually causal relationship such that they influence each other over time. Thus, a follow-up

study to this one could include measures of alexithymia and MIL tested at several occasions over time. In particular, it would be useful to see if alexithymia limits growth in presence of meaning in life over time, or if changes in presence of meaning in life results in changes in levels of alexithymia. Beyond simply measuring these constructs over time, interventions that are designed to enhance meaning-making could yield useful data. Measuring participants' level of alexithymia and seeing if higher levels of alexithymia impact the effectiveness of interventions could guide the design of interventions such that they account for emotional skills.

Another limitation is the use of a self-report measure of alexithymia. Because alexithymia is a factor that measures difficulty with introspection and self-awareness, self-report measures present clear limitations. This can be seen, for example, in Leising, Grande, and Faber (2009), who found discrepancies between self-reported ratings of alexithymia and interviewer ratings. Future studies examining alexithymia in relation to meaning-focused factors should include some observer rated scales, for instance the Toronto Structured Interview for Alexithymia (TSIA; Bagby, Taylor, Parker, & Dickens, 2006).

The definition and measurement of calling in this study may have limited the ability to detect the relationship between alexithymia and calling. The CVQ may neglect emotional components of searching for and finding a calling, and thus other measures of calling that include affective elements (e.g., Dobrow & Tosti-Kharas, 2011) would be useful in further examination of alexithymia and calling. Furthermore, given the complexity of searching for and discerning a calling, qualitative work that specifically explores emotional processes in and relationship to calling may yield useful data. Bailey, Yeoman, Madden, Thompson, Shim (2016) and Kerridge (2016) reviewed the literature on meaningful work and found that studies have relied mostly on cross-sectional survey data, highlighting that direct accounts of lived experience

of meaning within career are under-researched. Shim (2016) utilized semi-structured interviews to examine meaningful work among low socioeconomic status workers and found diverse accounts of how people derive meaning from their work; qualitative research explicitly focusing on emotional components of the experience of meaning in career could provide nuanced data on how emotional abilities influence calling. Such research could ask individuals with a calling about specific events that led them to their calling or about their experiences of living out their calling. If emotional processes are a consistent theme amongst interviewees, it may suggest that definitions and scales for calling should account for these factors. If emotional processes are inconsistent or negligibly present, it may reinforce the lack of a relationship between alexithymia and calling found in this study and thus provide evidence that searching for and having a calling are primarily cognitive processes.

This study also did not directly assess empathy, which may be a more relevant emotional process to calling than alexithymia (see Dik & Steger, 2015, for a review). Calling, based upon Dik and Duffy's (2009) definition, emphasizes prosocial concerns and thus empathy may be a key emotional factor to calling. Studies that examine the relationship between calling and empathy would be useful in furthering the depth and breadth of calling research.

Based on the link between alexithymia and career development well-being variables in this study, career counseling intervention studies may benefit from measuring alexithymia. In particular, measuring alexithymia and analyzing its relationship to outcomes of career counseling may reaffirm the detrimental effect of alexithymia on career development well-being. This also may inform how to design career counseling interventions; alexithymia may represent an impediment to career counseling and thus individuals high in alexithymia may require

psychotherapeutic intervention for career counseling to be most effective, or career counseling that directly addresses emotional factors may be more effective than other forms.

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