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# The role of mindfulness in identity development and goal-setting in emerging adults

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BOSTON UNIVERSITY  
WHEELOCK COLLEGE OF EDUCATION & HUMAN DEVELOPMENT

Dissertation

**THE ROLE OF MINDFULNESS IN IDENTITY DEVELOPMENT  
AND GOAL-SETTING IN EMERGING ADULTS**

by

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## **DEDICATION**

I would like to dedicate this work to my parents, aunt, and sisters who always love and believe in me as well as accompany me on this journey.

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**THE ROLE OF MINDFULNESS IN IDENTITY DEVELOPMENT  
AND GOAL-SETTING IN EMERGING ADULTS**

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**ABSTRACT**

The purpose of this mixed-methods dissertation study was to investigate the role of mindfulness in the process of identity development and goal-setting among emerging adults, from two different identity approaches – the identity status model and narrative identity. Of the total sample ( $N = 130$ ), 119 undergraduate students completed the questionnaires and provided turning point narratives in the online survey. The results showed that the diffusion identity status was negatively associated with mindfulness, goal-setting and narrative identity, whereas more advanced identity maturity was positively associated with mindfulness, goal-setting and narrative identity. In addition, both mindfulness and identity maturity index significantly predicted goal-setting. The relationship between mindfulness and goal-setting was also fully mediated by identity maturity index. Nevertheless, no associations among narrative identity, mindfulness, and goal-setting were found. Using extreme group analysis, the qualitative findings supported the quantitative findings by showing that the narratives in the extremely high identity maturity group were likely to demonstrate participants' engagement in exploration, acceptance of challenges, perspective changes in life and the worldview, and positive emotion states. The findings provided implications for theory and practice in

terms of the importance of incorporating mindfulness-based interventions in facilitating these specific aspects of identity development and goal-setting in emerging adults. Particularly, the findings highlighted that mindfulness promotes emerging adults' openness to new experiences and willingness to face challenges in rapidly changing occupational structures and social environments. Limitations and directions for future research were also discussed.

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## **CHAPTER ONE: INTRODUCTION**

A transition from childhood to full adulthood is a profound period. Particularly, Arnett (2000) proposed that a period from late adolescence through the twenties has been developmentally critical as many young people are exploring options and other possibilities in life such as education, career, values, and goals. During this transition especially in Western or European countries, young people generally pursue post-secondary education and later enter into the world of work (Chisholm & Hurrelmann, 1995). During this developmental period and transition, they generally tend to ask themselves, “Who am I?” “What am I going to do in the future?” (Erikson, 1950, 1968). Many young people appear to be working to establish a sense of identity and determine life directions of what they want to pursue in the future.

Erikson (1950, 1968) originally proposed that adolescence is a fundamental period in which most young people are exploring and committed to an identity. However, due to changes in the economic and social structure from industrial to technological society in the early 21<sup>st</sup> century, a transition to assume an adult role has become increasingly extended from adolescence to emerging adulthood (Schwartz, Côté, & Arnett, 2005; Schwartz, Kurtines, & Montgomery, 2005). For example, the global labor market has exponentially created more possibilities in regard to potential career choices for young people, which in turn enables them to explore various educational and occupational opportunities rather than settling themselves down in a specific path or

particular interest (Smith, 2010; Schwartz, Zamboanga, Luyckx, Meca, & Ritchie, 2013b). Because of these changing social and economic conditions together with university experiences, young people have more opportunities to explore alternative life directions and delay assuming adult roles before establishing a solid sense of identity (Schwartz, Kurtines, & Montgomery, 2005). Identity exploration and formation therefore prolong into this developmental period in emerging adulthood (Arnett, 2000; Schwartz, Côté, & Arnett, 2005).

Arnett (2000) defined this period as “*emerging adulthood*, which is neither adolescence nor young adulthood but is theoretically and empirically distinct from them both” (p. 469). Arnett (2000, 2004, 2007) posited that emerging adulthood is a developmental period involving five important features – exploring an identity, having a sense of instability, focusing on the self, feeling confused between being an adult or an adolescent, and having a sense of direction for the future. Due to increasingly complex social changes and rapidly changing occupational structures in today’s world, emerging adults are seemingly required to take more responsibilities, make their own decisions, and make a plan for the future such as obtaining post-secondary education and employment (Schwartz, Côté, & Arnett, 2005). For emerging adults who are able to manage and negotiate these challenges effectively with a clear sense of self and direction, these experiences are often constructive or rewarding (Côté & Levine, 2000; Schwartz, Côté, & Arnett, 2005). However, for emerging adults who approach these challenges in a more passive manner or have less clearly-defined goals, these experiences may be distressing, overwhelming, or even stressful (Schwartz, Côté, & Arnett, 2005; Schwartz, Kurtines, &

Montgomery, 2005). As a consequence, they may encounter difficulties in navigating the process of identity development, forming a coherent identity, and making a successful transition to adulthood (Schwartz, Côté, & Arnett, 2005), which may have a detrimental impact on their psychological health and overall well-being in the long run.

### **Problem Statement**

Searching for and forming a sense of identity is valued particularly in Western cultures. Generally, young people not only have increased mental capacities to explore a variety of possibilities, but also live in a societal context in which a wide range of options and opportunities are available for searching and considering these possibilities (Bosma & Kunnen, 2001). However, a rapidly changing social structure in this post-industrial world may be challenging for many young people to navigate this process of identity development (Schwartz, Côté, & Arnett, 2005; Schwartz, Kurtines, & Montgomery, 2005). Particularly, complexity of information may limit young people's capabilities and abilities to mentally process conscious and unconscious aspects of the self, develop self-knowledge, and recognize what they are thinking and feeling or even what is important for them (Wilson & Dunn, 2004).

These challenges have been reflected through ongoing national problems that many emerging adults and college students have been facing over the past years. The report of National Student Clearinghouse Research Center (Shapiro, Dunder, Wakhungu, Yuan, Nathan, & Hwang, 2015) indicated that the rate of overall six-year college completion of students who started a college enrollment in the fall 2009 semester in the

U.S. national college population was 52.9%, and approximately 153,000 students dropped out from college. In addition, 61.2% of students starting an undergraduate study in public universities for the fall 2009 cohort completed college, compared to 62.9% of the fall 2008 cohort (1.7 percentage point decline; Shapiro et al., 2015). Also, 71.5% of students starting an undergraduate study in private universities for the fall 2009 cohort completed colleges, compared to 73.6% of those starting in the fall 2008 semester (2.1 percentage point decline) even though the size of the cohort from fall 2008 to fall 2009 increased approximately 4.3% (Shapiro et al., 2015). Although the overall national completion rates may have been influenced by many factors such as college types, student subgroups and enrollment behaviors, a continuing acceleration of these declines in overall national attainment rates in the U.S. has been very concerning especially regarding students' postsecondary pathways and career trajectories (Shapiro et al., 2015). Accordingly, being unable to attain education or leaving college without degree has significantly affected not only time-and-cost resources and the delay of employment opportunities (Shapiro et al., 2015), but more importantly, a sense of self and overall well-being among the emerging adult and college student population.

It may be a common belief that one of the main reasons affecting graduation rates was the fact that students switched majors which may reflect their indecisiveness (Venit, 2016). However, Venit (2016) showed interesting results with a sample of 78,000 students at ten public and private institutions that there was nearly the same graduation rate (about 82%) between students who switched to their final major during their junior or senior year and those who choose their final majors earlier, which appeared to be

contrary to conventional beliefs. The report also indicated that approximately 75-85% of students switched majors some time in college, and still graduated in four years on average. Particularly, students who changed and made a final major choice in their junior year had the highest rate of graduation. However, late switches that happened in the sixth term or later may have an impact on students' time to get a degree such as having an additional semester of school on average, but not on their graduation. There was also a statistically significant difference of graduation rates between students who chose their first and only major in their first semester (73%) and those who made a final decision in their second semester or later (83%). These findings suggested that making an early and first choice without changing despite acknowledging a shift in interests may lead students to dissatisfaction over time, whereas switching majors was actually not an indicator of indecisiveness and lack of life directions, but rather was an affirmation of commitment to education by going through exploring possibilities that most fit interests and goals.

Erikson (1950) posited that healthy identity development is represented by “a sense of knowing where one is going” (p. 118). Those circumstances of the national problems might otherwise reflect a sense of not knowing where one is going. However, we could not interpret these issues as a dichotomous way of thinking or view a sense of no direction as unhealthy identity development. A question is how we can early help emerging adults develop a better understanding of who they are in terms of interests, expertise or values, take an active role in exploring possibilities, have a better sense of life directions, and adjust themselves to possible challenges in these educational and occupational pathways.

A simple and most important question is therefore “What facilitates the process of identity development and goal-setting in emerging adults (e.g., understanding a sense of self, exploring possibilities, adjusting to challenges, and setting goals and life directions)? How?” One of the core themes guiding identity development research is a belief that young people who try to figure who they are as a person and what they want to do in the future generally engage in the process of developing ongoing self-awareness of their individual needs (e.g., interests, goals, values, beliefs) and needs from others (e.g., parental and societal expectations; Erikson, 1950, 1968). Particularly in the face of challenges such as changing personal and external demands, young people typically need to navigate and negotiate possibilities to resolve such a conflict (Erikson, 1950, 1968), make sense of their internal and external experiences to better understand themselves (McAdams, 2011, 2013; McAdams & Adler, 2010), and make a commitment to what is true for them and what they want to do in the future (Marcia, 1966).

In this paper, mindfulness is proposed to facilitate this process of identity development and goal-setting in emerging adulthood. Over the past decades, mindfulness has been tremendously received attention across numerous academic and clinical disciplines on its mechanism in promoting increased awareness and overall well-being (e.g., Brown & Ryan, 2003; Segal, Williams, & Teasdale, 2002; Schonert-Reichl & Lawlor, 2010). Generally, when individuals lack awareness or are mindless of what is going on in the present moment, they may act or react to internal and external experiences without recognizing what is actually happening (Brown & Ryan, 2003). They may be caught up with concerns about the past or worries about the future, and

therefore they may miss what is happening in the present moment (Brown & Ryan, 2003). The inability to recognize one's own internal and external experiences likely obstructs emerging adults from developing self-awareness, having a better understanding of themselves, and navigating life directions.

On the other hand, mindfulness that involves a process of direct, non-evaluative self-observation facilitates individuals including emerging adults recognizing and gaining insight into the nature and the patterns of thinking, feeling and behaving, which in turn promotes a sense of clarity and self-understanding (e.g., Bishop et al., 2004; Brown & Ryan, 2003; Carlson, 2013; Segal, Williams, & Teasdale, 2002). Mindfulness as an open awareness can help them pay attention to experiences and make choices that are consistent with their needs, goals, values and interests (e.g., Bishop et al., 2004; Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007), and become flexible to set new and adaptive goals in the face of new experiences and opportunities (e.g., Brown, Ryan, & Creswell, 2007; Langer, 1989; Langer & Moldoveanu, 2000; Robinson, 2012). To date, however, there has been no research investigating this mechanism of mindfulness on the process of identity development and goal-setting in emerging adults.

### **Purpose of the Study**

The purpose of this study is to investigate how mindfulness plays a role in the process of identity development and goal-setting in emerging adults from two different identity approaches – the identity status model and narrative identity. According to Marcia's (1966) identity status model, identity is categorized based on the *exploration*

and *commitment* dimension, into four main statuses including *achievement*, *moratorium*, *foreclosure*, and *diffusion*. In addition, McAdams and colleagues (e.g., McAdams, 2011, 2013; McAdams & Adler, 2010; McAdams & McLean, 2013) proposed that emerging adults generally construct and use their life stories and narratives as ways to make sense of their experiences, and figure out who they are and what they want to do in the future. McLean and Pasupathi (2012) posited that “people are likely to use narratives to explore possible identities... narratives are also likely to reflect and possibly bolster people’s commitments to important identities,” which indeed represents their engagement in exploration and commitment (p. 14). Both theories seem to complement to one another, are central to the process of identity development, and are correlated in terms of the exploration-commitment dimension (McLean & Pasupathi, 2012). It thus makes sense to examine the identity status and narrative identity approaches in this dissertation study.

In addition, both identity approaches posited that the process of identity development involves goal-setting (McLean & Pasupathi, 2012). The identity status model proposed that individuals in the achieved status are likely to make commitments to an identity in guiding their goal-directed behaviors (McLean & Pasupathi, 2012). Through meaning-making and constructing narratives, individuals also explore and try out their identities and commitments, which in turn reflects perceptions about themselves and promotes their engagement in the process of setting and attaining goals for the future (McLean & Pasupathi, 2012). Consistent with the Selection, Optimization, and Compensation (SOC) theory (Baltes, 1997), individuals not only make choices and regulate their developmental trajectories, but more importantly, compensate their earlier

goals that may no longer work through adjusting their goals to deal with new circumstances and challenges.

The existing literature indicated that mindfulness had positive impacts on identity and other variables such as college adjustment (Markowitz, 2014) and vocational decision-making style (Galles, 2013). Some empirical studies also found positive relationships between mindfulness and goal-related variables (e.g., Craner et al., 2010a, 2010b). To date, however, no research has investigated how mindfulness plays a role in the process of identity development and goal-setting in emerging adults from these two identity approaches - the identity status model and narrative identity. This dissertation study was therefore intended to extend the existing literature on identity development theories, mindfulness, and goal-setting in the emerging adult population.

### **Research Questions and Hypotheses**

**Q1:** What were relationships between mindfulness, goal-setting, and identity-related variables from two identity approaches – the identity status model and narrative identity?

**H1.1:** There were significantly positive relationships between mindfulness, more advanced identity status, identity maturity index, and goal-setting.

**H1.2:** There were significantly positive relationships between mindfulness, narrative coherence, meaning-making, narrative identity, and goal-setting.

**Q2:** What were relationships between the identity status model and narrative identity?

**H2.1:** There were significantly positive relationships between more advanced identity status, identity maturity index, narrative coherence, meaning-making, and narrative identity.

**Q2.1:** What were similarities and differences in emerging adults' narratives between the extremely high identity maturity group and the extremely low identity maturity group?

**Q3:** What was the role of mindfulness in identity development and goal-setting?

**H3.1:** Mindfulness and identity-related variables (identity maturity index and narrative identity) together had a significantly positive impact on goal-setting.

**H3.2:** There was a significantly positive relationship between mindfulness and goal-setting; through a mediating role of identity-related variables (identity maturity index and narrative identity). Mindfulness had a significantly positive impact on identity development, which indirectly had a significantly positive impact on goal-setting.

**H3.3:** Mindfulness had a more significantly positive impact on goal-setting in the high identity maturity group than in the low identity maturity group.

### **Significance of the Study**

The literature (e.g., Robinson, 2012) indicated that emerging adulthood is a salient developmental period in which young people often struggle with developing an integrated sense of identity and subsequently may suffer from increased psychological

and mental health problems. Young people and emerging adults in general may lack self-awareness and capabilities to reflect on conscious and unconscious aspects of the self (Wilson & Dunn, 2004), and mindfulness has been found to facilitate this process of developing a healthy and integrated identity, which in turn leads to greater psychological well-being (e.g., Robinson, 2012). Several empirical findings (e.g., Galles, 2013; Markowitz, 2014; Robinson, 2012; Tsur, Berkovitz, & Ginzburg, 2015) suggested that examining associations between mindfulness, identity development, and outcome-related variables such as psychological functioning, college adjustment, and social-emotional development can provide potential implications for both theory and practice.

Specifically, there is some indication that mindfulness is promising practice for college mental health and career counseling that mental health professionals and educators can utilize mindfulness-based interventions to promote college students' and emerging adults' abilities to cope with dysfunctional career thoughts and greater engagement in career exploration, career decision-making, and vocational identity formation (e.g., Galles, 2013; Shirai, Nakamura, & Katsuma, 2016; Taber & Blankemeyer, 2015; Zhang, 2011). To date, however, no research has investigated the role of mindfulness in identity development and goal-setting in emerging adults; using two different identity development models. Thus, this study can potentially support and extend the existing literature on these related variables. Most importantly, the findings can provide potential implications for both theory and practice that mindfulness can help emerging adults have a better understanding of themselves, explore a vast array of identity possibilities, become able to adjust their goals, and integrate a sense of identity in

the face of challenges and new opportunities, which are critical and adaptive processes of identity development in emerging adulthood.

### **Definition of Key Terms**

Throughout this dissertation study, the following terms were used.

**Emerging adulthood** – is defined as a period from the late teens to the twenties as “which is neither adolescence nor young adulthood but is theoretically and empirically distinct from them both” (Arnett, 2000, p. 469).

**Mindfulness** – is defined as “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (Jon Kabat-Zinn, 1994, p. 4).

**Identity development** – is concerned with two important questions – “Who am I” and “What am I going to do with my life?” (Erikson, 1950, 1968).

**Identity status model** – is a structure of beliefs and abilities about the self in two dimensions of exploration and commitment, which generates four identity statuses including achievement, moratorium, foreclosure, and diffusion (Marcia, 1966).

**Narrative identity** – is constructed through narratives representing an integration of different aspects of self over time and across contexts (McAdams & Adler, 2010).

**Goal setting** – is the process of setting, pursuing, and maintaining personal goals, which is drawn from the Selection, Optimization, and Compensation (SOC) theory (Baltes, 1997).

## **CHAPTER TWO: LITERATURE REVIEW**

The process of identity development in emerging adulthood has been described and explained by a number of theoretical models. This dissertation examined two theoretical models – the identity status model and narrative identity. Both identity models are relevant and applicable for the emerging adult population and particularly rooted in Erikson’s (1950, 1968) conceptualizing work on identity development. In addition to two identity development models, this chapter also reviewed the mindfulness construct in terms of conceptualization, operationalization, and measurements. The conceptual framework on the role of mindfulness in facilitating the process of identity development and goal-setting in emerging adults was analyzed. Empirical evidence on these related variables and what has been missing in the literature was also discussed.

### **Theories of Identity Development in Emerging Adulthood**

The majority of developmentally based theoretical foundation and empirical research in identity development has been contributed by Erikson’s (1950, 1968) lifespan psychosocial theory of development (Schwartz, Donnellan, Ravert, Luyckx, & Zamboanga, 2013a). Erikson (1950) proposed that personality development results from a dynamic interplay between psychological needs of the individual and needs of society. Erikson indicated that an interrelation between *identity synthesis* and *identity confusion* results in identity development and identity formation in adolescence (Schwartz et al., 2013a, 2013b). Generally, when young people are able to form a coherent sense of self,

they are more likely to have adaptive functioning and abilities to take responsibilities for themselves in the future (Côté, 2002). Côté (2002) conducted a three-panel longitudinal study with 125 college student responses using repeated-measures, multivariate analysis of variance. Côté (2002) found that young people with a clear sense of self and agency were more likely to make successful transitions to adulthood in the long term, regardless of other factors such as gender and parental support.

In contrast, the literature posited that when young people do not have a clear sense of self, they may experience identity confusion, which in turn significantly predicts lack of directions and a sense of purpose in life (Schwartz, Zamboanga, Wang, & Olthuis, 2009), and higher levels of distress and greater engagement in problematic and maladaptive behaviors (Schwartz, Beyers, Luyckx, ... et al., 2011; Schwartz, Mason, Pantin, ... et al., 2009a). For example, Schwartz et al. (2011) conducted a study with 9,024 college students, using cluster analysis and multivariate analysis of variance (MANOVA). Schwartz et al. (2011) found that two diffused statuses (the *Carefree Diffusion* and the *Diffused Diffusion*), which were clustered into identity confusion, had negative associations with life satisfaction and well-being. In addition, Schwartz et al. (2009a) examined associations between identity and maladaptive behaviors with a sample of 227 adolescents using structural equation modeling (SEM). Schwartz et al. (2009a) found that identity confusion directly affected conduct problems, and indirectly affected other maladaptive behaviors such as risk-taking and substance use behaviors.

It was apparent that the main propositions of Erikson's theory of identity development largely focused on the amount of synthesis and consistency (Schwartz, Zamboanga, Wang, & Olthuis, 2009). Overall, Erikson's (1950, 1968) work provided great implications for two identity theories including the identity status model and the narrative identity (Schwartz et al., 2013a, 2013b). Marcia (1966) expanded Erikson's (1950, 1968) work on identity synthesis and identity confusion to the exploration-commitment dimension (Schwartz et al., 2013b). McAdams and Adler (2010) also proposed that, consistent with Erikson's (1950, 1968) work, individuals generally construct narrative identity by making sense of their life experiences and integrating personal and situational demands in order to develop a coherent sense of self. Theoretical backgrounds and implications for measurements of these two identity theories were further discussed as follows.

### **Identity Status Model**

#### **Theoretical background of the identity status model.**

Marcia's (1966) identity status model operationalized Erikson's work, and it appeared that most research on identity development has been inspired and informed by the identity status model since its introduction (Bosma & Kunnen, 2001; Schwartz et al., 2013b). Marcia (1980) viewed identity as a structure of beliefs and abilities about the self. Drawing upon Erikson's theoretical framework on identity crisis in adolescence, Marcia (1966) proposed the defining identity dimensions of *exploration* and *commitment*, which generates four identity status categories including *achievement*, *moratorium*,

*foreclosure*, and *diffusion*. According to Marcia (1966), *exploration* refers to considering and engaging in exploring a variety of identity options, whereas *commitment* refers to selecting and being committed to one or more of these options. *Achievement* occurs when individuals are actively engaged in self-exploration of different identities and subsequently make a commitment to an identity. Second, *moratorium* occurs when individuals are engaged in exploring identity alternatives, but are not ready to make a commitment. Third, *foreclosure* happens when individuals make a commitment to identity alternatives such as goals and values without getting engaged in self-exploration. Finally, *diffusion* occurs when individuals have not been engaged in self-exploration and not been committed to any identity at all.

There have been a number of empirical studies investigating how the identity status model and the four categories were associated with personality, psychosocial functioning, information processing styles, and other developmental variables. Schwartz and colleagues (2013a) summarized empirical studies that found associations between each of the four identity statuses and other variables such as achievement and effective decision making (Marcia, 1993), moratorium and a sense of curiosity to new experiences (Luyckx et al., 2005), foreclosure and rigidity (Marcia, 1967), and diffusion and maladjustment (Luyckx et al., 2005).

Specifically, Berzonsky and Kuk (2000) examined relationships between *identity processing styles*, identity statuses, and college developmental tasks with a sample of 363 first year university students. Using continuous scores for each of the four identity

statuses and hierarchical regression analysis, Berzonsky and Kuk (2000) found that among four identity statuses, diffusion was most negatively associated with adaptive functioning in interpersonal relationship, academic autonomy and educational goals and involvement, whereas achievement was directly associated with educational goals. They also found that the way young people processed identity-relevant information mediated the association between identity statuses and college developmental tasks (Berzonsky & Kuk, 2000). For example, moratorium had a direct negative effect on educational goals and an indirect positive effect on educational goals through the mediating role of *informational styles*, which referred to the way individuals actively seek out information (Berzonsky & Kuk, 2000). In addition, Berzonsky and Neimeyer (1994) conducted multivariate analysis of variance and of covariance with a sample of 560 undergraduate students and found that those with *uncommitted moratorium* tended to fine-tune with the environment and seek out information in order to evaluate and make decisions effectively, which in turn represented the way young people may continuously engage in the process of constructing and reconstructing their commitments and a sense of self.

Schwartz and colleagues (2013a, 2013b) identified a number of concerns with Marcia's (1966) identity status model. To begin with, Marcia's identity status model puts less emphasis on environmental and contextual factors, which is different from Erikson's (1950, 1968) work which values the impact of dynamic interplays between individual and contextual factors on identity development (Schwartz et al., 2013b). In addition, the identity status model seems to view young people's identity development as "static" and categorical (Schwartz et al., 2013a, p. 342). Finally, many authors (e.g.,

Côté & Schwartz, 2002; Schwartz et al., 2013a; Schwartz, Zamboanga, Wang, & Olthuis, 2009) further argued that it is unclear in what ways each identity status is operationalized in general and established specifically into Erikson's theoretical framework of identity confusion and identity synthesis.

### **Implications for measurements of the identity status model.**

Schwartz, Zamboanga, Wang, and Olthuis (2009) indicated that the Objective Measure of Ego Identity Status (OM-EIS; Adams, Shea, & Fitch, 1979) and the Extended Objective Measure of Ego Identity Status (EOM-EIS-II; Bennion & Adams, 1986) are measurement instruments which have been commonly used to assess Marcia's (1966) identity statuses and to test construct validity in relation to Erikson's framework of identity confusion and identity synthesis. The OM-EIS (Adams, Shea, & Fitch, 1979) consists of 24 items; 6 items assess and generate continuous scores for each of the four identity statuses – diffusion, foreclosure, moratorium and achievement, and cover three main domains including religion, politics and career. The OM-EIS was originally a classification measure putting individuals into “a single identity status categorization” using one standard deviation above the mean as cutoff scores (Adams, 1998, p. 24). For example, the pure identity status rule was utilized to identify participants scoring higher the cut-off points which were one standard deviation above the mean on an identity status (Adams, 1998). However, many research studies generally used the 24-item version of the OM-EIS that generated continuous scores rather than categorical variables, and the findings consistently yielded the modest alphas for the four identity statuses ranging from

.41 to .69 (McLean & Pratt, 2006), .46 to .70 (Dumas et al., 2009), and .52 to .62 (Mackey, Arnold, & Pratt, 2001).

Many researchers (e.g., Dumas et al., 2009; Mackey, Arnold, & Pratt, 2001; McLean & Pratt, 2006) attempted to find ways to assess identity development based on Marcia's (1966) identity status model in emerging adults more effectively by generating an index of developmentally advanced identity. Mackey, Arnold, and Pratt (2001) originally created the *identity maturity index* by "subtracting scores on the three less advanced statuses of identity diffusion, foreclosure, and moratorium from those for the most advanced status, identity achievement" (p. 257). Mackey et al. (2001) conducted a correlational study with a sample of 184 late adolescents and found that those with a more advanced identity status were more likely to incorporate their own and other people's views (e.g., parents, peers) in their narratives; indicating more sophisticated meaning-making toward a clearer sense of identity. Mackey et al. (2001) suggested that this developmentally advanced identity index may represent greater openness to alternative perspectives and options from the self and from others as well as greater engagement in decision-making processes, which was consistent with the exploration-commitment dimension of the identity status model.

The Extended Objective Measure of Ego Identity Status (EOM-EIS-II; Bennion & Adams, 1986) is an extended 64-item version of the original OM-EIS (Adams, Shea, & Fitch, 1979). Schwartz, Zamboanga, Wang, and Olthuis (2009) tested construct validity of the EOM-EIS-II, the Ego Identity Process Questionnaire (EIPQ; Balistreri et al.,

1995), and the Erikson Psychosocial Stage Inventory (EPSI; Rosenthal et al., 1981). The findings indicated positive associations between EOM-EIS-II identity achievement, EIPQ identity commitment and EPSI identity synthesis, and negative associations between EOM-EIS-II moratorium, EOM-EIS-II diffusion and EPSI identity confusion. Based on these findings, the literature (e.g., Schwartz, 2005; Schwartz, Zamboanga, Wang, & Olthuis, 2009) indicated the convergence between Erikson's (1950, 1968) identity confusion and synthesis, and Marcia's (1966) identity status model.

Recently, many researchers (e.g., Luyckx, Goossens, Soenens, & Beyers, 2006; Luyckx, Goossens, Soenens, Beyers, & Vansteenkiste, 2005; Luyckx, Schwartz, Berzonsky, et al., 2008) attempted to operationalize the identity status model as a more fluid process by creating new dimensions extending Marcia's (1966) four original identity statuses. Luyckx et al. (2006) subcategorized exploration and commitment into a continuum of four dimensions - *exploration in breadth*, *exploration in depth*, *commitment making*, and *identification with commitment*. Luyckx et al. (2006) posited that *exploration in breadth* and *commitment making* were solely derived from Marcia's (1966) original dimensions of exploration and commitment respectively. Luyckx et al. (2006) also proposed that *exploration in depth* refers to the process in which individuals find ways to obtain more information to evaluate and consider current commitments they have already made, whereas *identification with commitment* refers to how and the extent to which they put existing commitments together and identify themselves and a sense of identity in relation to these commitments. Through confirmatory factor analysis with a sample of 565 emerging adults, Luyckx et al. (2006) empirically distinguished these

dimensions and found positive associations between identification with commitment and positive adjustment, and between exploration in breadth and depressive symptoms. Additionally, Luyckx et al. (2008) added the fifth dimension or the third subcategory of exploration, *ruminative exploration*, which refers to the way individuals keep struggling with exploring identity alternatives and feel afraid to make a choice and a commitment to an identity. Through a cross-sectional study design testing internal and external construct validity, Luyckx et al. (2008) found that ruminative exploration was positively related to distress, whereas the other two dimensions of exploration (exploration in breadth and exploration in depth) were positively related to self-reflection and openness to new experiences.

Collectively, these results indicated that for emerging adults, processes associated with identity development include developing a clear sense of self while also being flexible enough to respond to and manage challenges brought about by the rapidly changing environment of technological society (Schwartz, Côté, & Arnett, 2005). Therefore, it is apparent there have been calls for theoretical conceptualization and empirical research studies that can better capture the identity development process in emerging adulthood as a changing process integrating various aspects of the exploration-commitment dimension, rather than as a static and immutable category (e.g., Schwartz, 2001, 2005; Schwartz et al., 2013b; Schwartz, Zamboanga, Wang, & Olthuis, 2009).

## **Narrative Identity**

### **Theoretical background of narrative identity.**

As aforementioned, there have been many efforts to quantitatively operationalize and empirically examine Marcia's (1966) identity status model as a fluid rather than static process (e.g., Luyckx, Goossens, Soenens, & Beyers, 2006; Luyckx, Goossens, Soenens, Beyers, & Vansteenkiste, 2005; Luyckx, Schwartz, Berzonsky, et al., 2008). However, many authors (e.g., McAdams & McLean, 2013; Waters & Fivush, 2015) argued that narrative identity indeed can better capture the qualitative process of identity development especially how emerging adults come to understand themselves and what they want to do in the future. Consistent with Erikson's (1950, 1968) theory of lifespan psychosocial development and framework of identity confusion versus identity synthesis, McAdams and Adler (2010) proposed that narrative identity "integrates a life *synchronically* and *diachronically*" respectively through the process of organizing different aspects of the self in relation to personal and situational demands and constructing life experiences from the past, the present, and the future (p. 38).

The literature (e.g., McAdams, 1985, 2013; McAdams & Adler, 2010; McAdams & Pals, 2006; Waters & Fivush, 2015) posited that narrating stories about the self is crucial for the psychosocial functioning development in late adolescence and emerging adulthood. Over the course of this developmental period, narrative identity emerges as a result of late adolescents' and emerging adults' increasingly complex process of formal operational thinking together with societal expectations pressing their needs to "figure

out” who they are and what they want to do in the future (McAdams & McLean, 2013, p. 236). Late teens and emerging adults therefore create ongoing autobiographical stories in order to make sense of and connect various experiences with their selves (McLean, Pasupathi, & Pals, 2007), which in turn creates narrative identity (e.g., McAdams, 1985, 1995; McAdams & Pals, 2006; Singer, 2004).

McLean (2005) sampled 185 late adolescent and emerging adult participants and asked them to describe three self-defining memories in narrative responses to the paper-based questionnaire. This study was aimed at helping better understand how participants made sense of their experiences and how telling their stories and memories helped themselves develop self-understanding and a sense of identity. McLean (2005) used thematic categories (no-meaning, lesson-learning, and gaining insight) to code the narratives. The results showed the older participants were, the more complex meaning-making their narratives demonstrated. In addition, McLean (2005) found that telling a story served some purposes in the process of identity formation and identity development. Through meaning-filled experiences, for example, the narratives demonstrating explicit meaning of the stories tended to represent some levels of self-explanation and ways that participants tried to construct their identity and communicate it to themselves and others (McLean, 2005).

In addition, McAdams (2013) proposed that an individual self generally consists of three different psychological aspects capturing the real self, including the *social actor*, the *motivated agent*, and the *autobiographical author*. The *social actor*, first of all, refers

to traits and skills that individuals observe and form through their performance in social situations. Regulating one's performance and behavior is a challenging task to the self as social actor. The next layer is the *motivated agent*, which refers to personal goals, values, and other aspects involving engagement in exploration and commitment. A challenge to the self as motivated agent is self-evaluation especially with regard to questioning one's ability to achieve goals, which in turn affects self-esteem. The *autobiographical author*, the last layer, refers to a constructed self-defining story that formulates, integrates, and synthesizes different aspects of the self into a whole sense of self. One of the main challenges to the self as autobiographical author is self-continuity which one can construct and develop a coherent sense of self over time and across different situations.

Solberg et al. (2015) conducted an exploratory mixed-methods comparative study with a sample of 90 participants which was randomly selected from a larger sample of 1,653 students in 14 high schools from four states in the U.S. in a larger study (Solberg et al., 2010). Using Marcia's (1966) identity status model, 30 narratives were initially classified into each identity status including foreclosure, moratorium, and achievement. Subsequently, the narratives were coded and classified into McAdam's (2013) three psychological aspects of the self - the social actor, the motivated agent, and the autobiographical author. Using the cross-tabulation and correlation analysis, the results indicated strong associations between Marcia's identity status model and narrative identity. Particularly, the findings found correlations between the achieved status and the autobiographical author, and between the less advanced identity statuses (e.g., foreclosure and moratorium) and the motivated agent. In addition, those classified as the

autobiographical author were more likely to report greater career search self-efficacy, lower levels of distress, and less career decision-making difficulty.

McAdams and Adler (2010) further posited that relying on the autobiographical author, “*narrative identity* is the internalized and evolving story of the self that he or she is implicitly working on, a story that continues to develop as the person moves through the adult life course” through a process of constructing and integrating the past, the present, and the future (p. 37). Habermas and Bluck (2000) proposed the term *autobiographical reasoning*, which is a critical process of identity development that individuals use to draw on memories and make sense of their experiences by making meaning, conclusions, and inferences about who they are. Connecting to the selves, people in general tend to draw their autobiographical memories on a specific episode of their past experiences and challenging life events such as turning point events (Pals, 2006; McLean, Pasupathi, & Pals, 2007; McLean & Pratt, 2006), or self-defining memories (Blagov & Singer, 2004; McLean, 2005; Singer, 2004). Through life experiences and stories, people construct and use autobiographical narratives not only to tell themselves and others, but also to serve self-understanding, provide a sense of unity and purpose, and guide life directions (e.g., McAdams & McLean, 2013; Singer, 2004).

#### **Implications for operationalization of narrative identity.**

The literature (e.g., McAdams, 2011, 2013; McLean, Pasupathi, & Pals, 2007; Singer, 2004) indicated that narrative identity can be demonstrated and represented through how individuals narrate their life stories from their experiences and how they

connect these stories to the self. There are three main prompts across research studies in terms of how they elicit narratives from participants. First of all, participants are typically asked to describe a turning point experience or a significant event in life in a single unique event (e.g., McLean & Pratt, 2006; Liao, Bluck, & Cheng, 2015), or in recurring events (Water & Fivush, 2014). These situated stories can help individuals directly and indirectly represent, integrate and maintain certain aspects of the self (McLean, Pasupathi, & Pals, 2007). Second, individuals are asked to identify a self-defining memory which represents who they are as a person and helps them better understand how they come to be (McLean, 2005; Singer & Moffitt, 1991). Third, participants are asked to describe a low-point event in which they have negative experiences and how the events impact their sense of self (e.g., Chen, McAnally, Wang, & Reese, 2012; Dumas et al., 2009).

The literature suggested that emerging adults' well-formed narrative identity is likely to exhibit causal and thematic coherence when moving from late adolescence through emerging adulthood (Habermas & Bluck, 2000), and display other markers such as more sophisticated meaning-making (McLean & Pratt, 2006). Many researchers attempted to generate narrative coding systems or protocols to operationalize, identify, and assess these qualities. First of all, McAdams and Adler (2010) proposed that narrative identity has been constructed through an integration of different psychological aspects of the self over time and across situations, and therefore a high quality of narrative identity is narrative coherence. To operationalize narrative coherence, Reese and colleagues (2011) developed a coding system for narrative coherence which consists

of three dimensions – *context*, *chronology*, and *theme*. The literature showed that greater narrative coherence was positively correlated with lower levels of depression and greater life satisfaction (Baerger & McAdams, 1999), whereas low levels of narrative coherence were positively correlated with psychological symptoms (Adler, 2012; Hermans, 2006). Waters and Fivush (2015) also conducted a study collecting four autobiographical, turning point narratives - two single or nuclear events and two recurring events from 103 undergraduate students. The results showed positive associations between narrative coherence, well-being, and positive self-view particularly in narratives of single events, but not of recurring events (Waters & Fivush, 2015).

In addition, a sense of meaning-making is another indicator of well-formed narratives because it represents to what extent and in what ways emerging adults learn about life lessons and gain insight into themselves (McLean & Pratt, 2006). Adapting from McLean and Thorne (2001, 2003), McLean and Pratt (2004) developed a coding system for meaning-making based on turning point narratives, which employs a continuous scale from no-meaning, lesson learning, vague meaning, and insight. McLean and Pratt (2006) conducted a longitudinal study with a sample of 200 emerging adults who completed the survey at the baseline as well as 2-year and 6-year follow-up. They found that emerging adults with more advanced identity statuses measured at age 19 were likely to engage in more sophisticated making meaning measured at age 23; indicating that emerging adults' engagement in identity exploration and commitment processes promoted their meaning-making processes by gaining insight into themselves later in life (McLean & Pratt, 2006).

### **Common Themes and Challenges of Identity Development Theories**

Multiple dimensions of an identity have been discussed and referred to different phenomena, and the term identity has been defined differently depending upon each theoretical model, such as a sense of self in terms of continuity and sameness (Erikson, 1950, 1968), a structure of beliefs and abilities about the self in the exploration and commitment dimension (Marcia, 1966, 1980), and the construction and reconstruction of experiences and life stories over time and across situations (McAdams & Adler, 2010).

Many identity development models proposed a marker of healthy identity development in which the common theme appears to be an integrated and coherent sense of self (Erikson, 1950, 1968; Marcia, 1993; McAdams & Adler, 2010). For example, Erikson (1950) proposed that a hallmark of healthy identity development is identity integration which represents an individual's abilities to integrate a sense of self with a sense of continuity. McAdams and Adler (2010) further argued that the key term of identity integration which Erikson viewed as the optimal development of ego identity is an identity integrating different elements of life *synchronically* and *diachronically* (p. 38). In other words, individuals with an achieved identity tend to live a life that is true and authentic to themselves and consistent with their personal needs and external demands over time and across contexts (McAdams & Adler, 2010). Marcia (1993) also viewed that identity achievement is a balanced combination of exploration and commitment, and is critical for healthy and optimal identity development.

Nevertheless, some scholars (e.g., Baumeister & Muraven, 1996) posited that the nature of identity is not static by changing over time and across situations. Many authors (e.g., Bosma & Kunnen, 2001) indeed argued that despite changing external environments, an identity can maintain consistent and may be considered as individuals' capabilities to adjust to the external environments. Therefore, even though identity development may result from the transactional interaction between individual and contextual factors, several authors and the literature primarily focused on "those within the person" as determinants of identity development (Bosma & Kunnen, 2001, p. 44).

Overall, based on theoretical frameworks and empirical evidence on the identity status model and narrative identity, four primary mechanisms promoting the process of identity development and goal-setting in emerging adults were commonly found and proposed in this dissertation study. First of all, the literature in identity development agreed that ongoing self-awareness helps emerging adults develop a better understand of themselves (Marcia, 1966; McAdams & Adler, 2010) and maintain a sense of identity consistently between personal and external demands (Erikson, 1950, 1968). Second, it is important for emerging adults to recognize inconsistencies between their changing personal needs and demands from society in order to negotiate, navigate, and develop a healthy sense of self (Erikson, 1950, 1968; Marcia, 1966; McAdams & Adler, 2010). Third, emerging adults thus put an effort to resolve such inconsistencies or conflicts to synthesize an identity (Erikson, 1950, 1968), engage in the process of exploring options and making a commitment to develop an achieved identity (Marcia, 1966), and construct life-story narratives to arrive a resolution (McAdams, 2011, 2013; McAdams & Adler,

2010). Finally, a healthy sense of identity involves a sense of continuity (Erikson, 1950, 1968), abilities to make a commitment after exploration (Marcia, 1966), as well as integration of different elements of the self from the past, the present, and the future (McAdams, 2011, 2013; McAdams & Adler, 2010). In this present study, mindfulness is considered an important mechanism facilitating these identity development processes. Mindfulness and its mechanisms were further discussed in the following sections.

### **Mindfulness**

A concept of mindfulness and mindfulness practice historically has its root in Buddhist religious beliefs (Sipe & Eisendrath, 2012). Thich Nhat Hanh, a well-known Buddhist monk, defined mindfulness as “keeping one’s consciousness alive to the present reality” (1976, p. 11). Over the past few decades, there have been the exponentially increasing number of research studies on mindfulness (Bishop et al., 2004; Brown, Ryan, & Creswell, 2007), and an increasing interest in applications of mindfulness in medical and psychological fields in Western countries (Sipe & Eisendrath, 2012). In the medical field, for example, one of the first pioneers in mindfulness practice in the United States was Jon Kabat-Zinn that designed and implemented a mindfulness-based stress reduction (MBSR) program for treating participants with cancer (Kabat-Zinn, 1990). Jon Kabat-Zinn (1994) originally defined mindfulness as “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (p. 4). In the field of psychology, additionally, Shapiro et al. (2006) also posited that mindfulness involves a “meta-mechanism of re-perceiving” (p. 374). Several authors (e.g., Brown & Ryan,

2003; Kabat-Zinn, 1994; Schonert-Reichl & Lawlor, 2010; Shapiro et al., 2006) have attempted to define what mindfulness is; however, conceptual and operational definitions of mindfulness in the literature have still varied across disciplines and fields.

Brown and Ryan (2003) noted that, to a certain extent mindfulness may resemble other constructs and psychological processes, and could be viewed as a part of other theories and concepts of awareness and consciousness. However, Brown and Ryan (2003) argued that mindfulness is rather a “*pre-reflexive*” mode of functioning involving the quality of consciousness which individuals observe thoughts and feelings as they are instead of examining or interpreting them (p. 823). Brown and Ryan (2003) conducted an experimental study and found the effects of mindfulness on participants’ greater congruence between implicit and self-reported emotional state responses. However, some authors (e.g., Langer, 1989; Langer & Piper, 1987) viewed mindfulness as cognitive operations which involve a process of creating new categories. Langer and Piper (1987), for example, conducted three experimental studies with undergraduate students and found that processing information prematurely based on past experiences constrained participants’ a sense of creativity and flexibility in retrieving and using information in the present moment. Overall, it has been still controversial to find a consensus on conceptual and operational definitions of mindfulness. In this section, commonly used conceptual and operational definitions of mindfulness, implications for mindfulness measurements, and their convergence and divergence were further described and discussed as follows.

## Conceptual and Operational Definitions of Mindfulness

### Metacognitive process and skill.

Bishop and colleagues (2004) conceptually proposed that individuals in a state of mindfulness observe thoughts and feelings as they are rather than automatically reacting to them, which in turn creates a “*space*” between their perception and actual response (p. 232). Based on this conceptualization, Bishop et al. (2004) asserted two components of mindfulness including regulating attention and orienting to experience. First of all, in a state of mindfulness, individuals bring and maintain an awareness by attending to thoughts, feelings, and body sensations as they arise moment-by-moment (*sustained attention*), and bring attention back to the current experience whenever they notice the mind happens to wander (*switching*; Bishop et al., 2004, p. 232). In this sense, mindfulness allows individuals to have a direct observation and experience of events as if for the first time instead of observing and experiencing based on their assumptions, which in turn can enhance their access to information as it becomes more available from outside awareness to awareness (Bishop et al., 2004).

Second, Bishop et al. (2004) stated that through mindfulness, individuals tend to approach their experience with a sense of curiosity, openness to new information, and self-acceptance. In a state of mindfulness, individuals observe whatever arises in terms of thoughts, feelings, and body sensations (Bishop et al., 2004). As a result, they maintain a sense of curiosity, are open to what is happening, and accept current thoughts, feelings, and body sensations rather than making an effort to change them. Individuals

with a state of mindfulness tend to gain insight into the nature of and the relationship between their thoughts, feelings, and body sensations (Bishop et al., 2004).

Bishop et al. (2004) have been using the term “*state*” when referring to mindfulness; however, they indicated that they preferred the term “*mode*” to state because mindfulness can be viewed as a “*state-like*” quality (p. 234). Bishop et al. (2004) believed mindfulness is a psychological process that involves a process of self-observation rather than an outcome that involves self-knowledge. In addition, mindfulness could be perceived as a construct similar to a skill that can be developed and cultivated through practice and can cease when attention is not regulated any more (Bishop et al., 2004). Above all, Bishop et al. (2004) also believed that mindfulness is considered as a metacognitive skill because it involves metacognitive processes of monitoring and controlling cognition.

However, there appears to be confusion with what is actually considered as a metacognitive skill. Teasdale (1999) made a distinction between metacognitive knowledge and metacognitive insight. Metacognitive knowledge refers to acknowledging that the nature of thoughts may be transient and inaccurate, leading individuals to better understanding their thoughts (Teasdale, 1999). In contrast, metacognitive insight enables individuals to notice thoughts just thoughts, step back from them, and see them not as realities (Teasdale, 1999). When individuals non-judgmentally observe their thoughts, they tend to have greater metacognitive insight because of increasing clarity of thoughts and capabilities to manage their responses without self-

serving biases, judgments, and interpretations (Teasdale, 1999). Above all, it appears to be an unclear agreement among the authors in terms of how metacognition is viewed and related to mindfulness.

### **Self-regulatory capability.**

Brown and Ryan (2003, 2004) conceptually and operationally proposed another viewpoint of mindfulness. Based on the commonly conceptual definition of mindfulness as a state of being aware of what is occurring in the current moment, Brown and Ryan (2003) posited that mindfulness has two main components including *awareness* and *attention* which are the primary features of *consciousness*. *Awareness* refers to the pure observation of internal and external experience, which serves as “the background “radar” of consciousness” (Brown & Ryan, 2003, p. 822). *Attention* refers to “a focusing of awareness to highlight selected aspects of that reality” (Brown & Ryan, 2004, p. 243). Mindfulness is therefore considered as a consciousness attribute because of the combination of these two components (Brown & Ryan, 2003, 2004).

Brown and Ryan (2003) conducted five studies using multiple methods including correlational, quasi-experimental, experimental, experience-sampling, and clinical intervention to examine this unique quality of mindfulness and its impacts on self-regulated functioning and psychological well-being with various samples of college student and adult populations. First of all, Brown and Ryan (2003) found positive relationships between mindfulness and well-being indicators such as internal state awareness and lower levels of rumination in the correlational study. In addition, Brown

and Ryan (2003) found the positive impact of mindfulness on autonomous behavioral regulation and pleasant affect in the experience-sampling study and the clinical intervention study. In the experimental study, Brown and Ryan (2003) also found that mindfulness was positively correlated with self-knowledge. Brown & Ryan (2003, 2004) concluded that mindfulness specifically involves the capability and the quality of consciousness in terms of monitoring and observing what is happening in the present moment and promotes a sense of choice and abilities to recognize consequences of behavior. On the other hand, when individuals are less mindful of what is happening such as thoughts, emotions, and external situations, they may not be aware of and may automatically react to them (Brown & Ryan, 2003, 2004).

Additionally, Brown and Ryan (2004) argued that mindfulness may not be considered as a metacognitive skill as proposed by Bishop et al. (2004). Brown and Ryan (2004) emphasized that mindfulness cannot be thought or another form of cognition because it involves the capability of observing thought as thought. Nevertheless, Brown and Ryan (2004) tended to agree with Bishop et al. that awareness, attention, and acceptance are related within the mindfulness realm particularly in terms of “taking each moment as it comes” without trying to alter or avoid the experience (p. 245). Brown and Ryan (e.g., Brown & Ryan, 2003, 2004; Ryan, 2005) further believed that mindfulness is also related to heightened self-knowledge and serves an important self-regulatory function. When individuals receptively observe and are aware of internal and external information, they are in a state of having choices between responding based on their needs, goals and values, or reacting based on their habits (Brown, Ryan, & Creswell,

2007). More importantly, Brown and Ryan (2003, 2004) agreed with Bishop et al. (2004) that meditation can be a route to increase mindfulness, but mindfulness is not only a product of meditative practice because individuals can carry mindfulness practice over into their daily lives and mindfulness is a natural capability of human beings. Brown and Ryan (2003, 2004) thus viewed mindfulness as both state and dispositional trait.

### **Cognitive operations.**

Langer and colleagues (e.g., Langer 1989; Langer & Mooloveanu, 2000) were also one of the pioneering researchers that provided conceptual work of mindfulness. Langer and Mooloveanu (2000) conceptually defined mindfulness as “the process of drawing novel distinctions,” which in turn can help keep individuals “situated in the present” (pp. 1-2). Langer (1989) operationally broke down the mindfulness construct into five distinct components including having sensitivity to the experience and the environment, being open to new experience and information, creating new categories, increasing self-awareness of different perspectives, and orienting in the present moment.

Langer and Mooloveanu (2000) proposed that when individuals are mindful of the present moment, they are in the state of being aware of what they are doing and fully immersed in the experience, which appears consistent with Bishop et al. (2004) and Brown and Ryan (2003, 2004) in terms of considering mindfulness as a state. However, Bishop et al. (2004) argued that Langer’s conceptualization of mindfulness involving creating new categories, seeking new meaning, and being attentive to external stimuli appears to be different from Bishop et al. as well as Brown and Ryan. In other words,

Langer viewed mindfulness as a particular cognitive approach and operation to the external environment rather than a direct observation of internal experience as proposed by Bishop et al. (2004) and Brown and Ryan (2003, 2004). Sternberg (2000) suggested that the mindfulness conceptualization proposed by Langer can be described as cognitive styles as it involves an interaction between personality and cognition, a way of thinking, and other cognitive processes such as thinking carefully instead of acting impulsively.

### **Implications for Mindfulness Measurements**

Conceptual and operational definitions of mindfulness can help inform a fundamental basis for mindfulness instrument development (Bishop et al., 2004). According to many authors (e.g., Bishop et al., 2004; Carlson, 2013), mindfulness can be categorized and measured as trait, state, and learned skill.

#### **Mindfulness as a dispositional trait.**

Carlson (2013) referred dispositional trait mindfulness to the degree to which individuals are likely to be mindful of the experience on a daily basis. Many authors (e.g., Bishop et al., 2004; Brown & Ryan 2003, 2004; Langer & Moldoveanu, 2000) indicated that individuals in general can be mindful without mindfulness training as it is a natural capability of human beings, and mindfulness practice can also enhance dispositional or trait mindfulness. Several self-report measures assessing trait mindfulness include the Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), and the Kentucky Inventories of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004).

The 15-item MAAS measures the extent to which and how frequently individuals have a receptive state of mind over time by primarily focusing on the presence and the absence of mindfulness components which are attention and awareness (Brown & Ryan, 2003). The 39-item FFMQ assesses five facets of mindfulness in everyday life; including observation, description, action with awareness, and non-judgment of or non-reactivity to the experience (Baer et al., 2006). The 39-item KIMS measures core mindfulness components including observation, description, action with awareness, and non-judgmental acceptance (Baer, Smith, & Allen, 2004).

Many authors (e.g., Grossman, 2011) argued that trait mindfulness instruments may be limited in terms of construct validity. Carlson (2013) suggested that these measures could provide potential construct validity because they were associated with theoretically mindfulness-related outcomes. Through the use of the MAAS and the KIMS, for example, dispositional mindfulness was found to be correlated with the ability to respond instead of reacting impulsively (Brown & Ryan, 2003; Lakey, Campbell, Brown, & Goodie, 2007) and affect regulation (Baer, Smith, & Allen, 2004). Using the FFMQ, the KIMS and the MAAS, trait mindfulness was also positively associated with well-being (Brown & Ryan, 2003; Carlson & Brown, 2005; Lau et al., 2006) and negatively associated with indicators of psychopathology (Baer et al., 2006). Overall, there are some agreements among these measures that higher dispositional mindfulness reflects individuals' greater tendency to have states of mindfulness on a daily basis (Brown, Ryan, & Creswell, 2007).

**Mindfulness as a state.**

It is interesting that even though several conceptual and operational definitions refer to mindfulness as a state, there have been a very few measures assessing this quality of mindfulness. State mindfulness reflects the extent to which individuals have “a momentary episode of mindfulness rather than a general tendency” of being a mindful person (Carlson, 2013, p. 176). Based on the conceptualization of mindfulness as a state or a state-like phenomenon (Bishop et al., 2004), instruments developed to test this quality of mindfulness include the Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003) and the Toronto Mindfulness Scale (TMS; Lau et al., 2006). The MAAS was developed to assess not only dispositional trait but state of mindfulness as well (Brown & Ryan, 2003).

In addition, state mindfulness is often used in research and laboratory settings in which participants are instructed to practice a mindfulness exercise and then immediately assessed with mindfulness instruments such as the TMS (Bishop et al., 2004; Carlson, 2013). In an effort to enhance factorial and construct validity, these instruments were used to examine whether individuals who received mindfulness training were likely to report an increase in mindfulness scores that corresponded to performance improvements requiring sustained attention and attention switching skills (Bishop et al., 2004). Brady, O'Connor, Burgermeister and Hanson (2012) found that the state, TMS-assessed mindfulness was associated with the reduction of stress levels and improvement of self-care among mental health professionals who participated in the MBSR program.

**Mindfulness as a learned skill.**

Based on the conceptualization of mindfulness as a learned skill, Carlson (2013) suggested instruments need to reflect that mindfulness can be enhanced with practices. Bishop et al. (2004) emphasized that the instruments assessing this quality of mindfulness need to demonstrate incremental validity in that mindfulness as a skill is sensitive to change and is gradually accumulated over time and through practices. For instance, the results should show that individuals with experienced mindfulness practices report higher scores than those with less or no experience, and that individuals participating in mindfulness-based courses are more likely to report increased scores on mindfulness (Bishop et al., 2004). However, these mindfulness measures are often used in mindfulness meditative contexts (Bishop et al., 2004; Carlson, 2013). Many evidence-based treatment approaches such as the Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002) frequently used the self-reported KIMS measure (Brown, Ryan, & Creswell, 2007). The KIMS instrument was designed primarily for clinical populations with an aim of capturing various mindfulness skills that were learned in such treatment programs (Brown, Ryan, & Creswell, 2007).

Brown, Ryan, and Creswell (2007) summarized that many mindfulness-based interventions have shown promising findings in theoretically mindfulness-related outcomes such as the effect of the Mindfulness-Based Stress Reduction (MBSR) program on increased affect regulation in randomized clinical trials (RCTs) compared with a waitlist control (e.g., Tacon et al., 2003). RCTs studies (e.g., Teasdale et al., 2000)

showed that depressed participants receiving the Mindfulness-Based Cognitive Therapy (MBCT) treatment were less likely to relapse in their recovery process and more likely to develop self-awareness particularly related to metacognitive capabilities, compared with a treatment as usual control group. The study by Bohus et al. (2004) also showed that participants with borderline personality disorder in the Dialectical-Behavioral Therapy (DBT) treatment were more likely to have low levels of distress, compared with those in the control group.

However, Brown, Ryan, and Creswell (2007) indicated some concerns of using clinical approaches to understanding the nature of mindfulness. Brown, Ryan, and Creswell (2007) posited that different clinical approaches such as MBCT and DBT have drawn upon different mindfulness definitions and components in ways that are consistent with its protocols and potential clinical outcomes that they may aim to measure. In addition, in each evidence-based treatment, mindfulness is not only an outcome that treatment aims to facilitate, but also other mindfulness-related constructs such as self-control, emotion regulation, or acceptance which are also potential outcomes it may seek to foster (Brown, Ryan, & Creswell, 2007). There is thus no clear distinction between the phenomenon of mindfulness that the treatment approach intends to foster and its clinically-oriented conceptualization and operationalization of mindfulness, which can cause confounding factors when these scales are used in other non-clinical contexts and populations (Brown, Ryan, & Creswell, 2007).

### **Convergence and Divergence of Mindfulness Definitions and Measurements**

The literature indicated that there has not been a consensus and consistency of general descriptions of mindfulness, construct specificity, and operational definitions across investigators (Bishop et al., 2004). The commonly used definition of mindfulness that was first formally introduced by Kabat-Zinn (1990, 1994) as intentional and non-judgmental awareness has been applied by many authors and used in several studies. Several authors (e.g., Bishop et al., 2004; Brown & Ryan, 2003; Kabat-Zinn, 1990, 1994) tended to view mindfulness as a construct in association with being accepting and nonjudgmental in nature. However, when mindfulness is operationalized, mindfulness concepts and measures are rather implied as an open receptivity to the present moment and experience (Brown & Ryan, 2003). Bishop et al. (2004) and Brown and Ryan (2003, 2004) seemingly considered mindfulness as a psychological process of self-observation primarily on internal stimuli such as thoughts, feelings and sensations, whereas Langer (1989) viewed mindfulness as a cognitive process solely on external stimuli and environments. Mindfulness is also viewed as a construct involving attention regulation (Bishop et al., 2004) and overall self-regulatory capability (Brown & Ryan, 2003, 2004).

In addition, mindfulness has been conceptually and operationally defined in some similar ways, but may be framed differently among the authors. For example, openness seems to be a common component of mindfulness, but is perceived slightly different by many authors such as being open to new experience (Bishop et al., 2004), open awareness and attention (Brown & Ryan, 2003, 2004), and openness to novel information

(Langer, 1989; Langer & Moldoveanu, 2000). Furthermore, mindfulness involves capabilities to create a space or a time gap between perception and response so that individuals have a sense of choice to respond to situations instead of reacting to them (e.g., Bishop et al., 2004; Brown & Ryan, 2003, 2004; Hayes, Strosahl, & Wilson, 1999; Hayes & Shenk, 2004).

Nevertheless, several authors concerned that there is considerable variation among current mindfulness measurements in content and structure based on different theoretical conceptualizations (Brown, Ryan, & Creswell, 2007). There have been also few empirical studies testing whether the scales showed predictive validity (Brown, Ryan, & Creswell, 2007) and what the scales actually measured (Rosch, 2007). Rosch (2007) argued that Brown and Ryan seemingly viewed the mindfulness construct as “a unipolar dimension” involving both dispositional trait and state, whereas Bare and colleagues tended to consider it as a construct having five separate facets (p. 262). Some authors (e.g., Bishop et al., 2004; Brown, Ryan, & Creswell, 2007) also addressed that the MAAS and the FFMQ were primarily developed and used in non-clinical populations, whereas the TMS and the KIMS were more likely to be designed and used in mindfulness-based interventions and laboratory research in clinical populations. However, despite some challenges among the scales and measurements, Brown, Ryan, and Creswell (2007) concluded that there has been a convergence of findings on the effects of mindfulness on healthy and adaptive human functioning. The role of mindfulness in facilitating adaptive human functioning, particularly the process of

identity development and goal-setting in emerging adults, was further discussed and analyzed in the following section.

### **Conceptual Framework: The Role of Mindfulness in Identity Development and Goal-Setting in Emerging Adults**

Over the past decades, several authors have attempted to investigate and answer how the identity development process can be facilitated and developed over one's life course. Many authors have discussed potential benefits and roles of mindfulness in promoting identity development (e.g., Shapiro et al., 2006); however, there has been still a lack of empirical studies examining this effect. In this present study, it was conceptualized that mindfulness facilitates identity development and goal-setting in emerging adults through four main processes including development of ongoing self-awareness, awareness of inconsistencies between personal needs and external demands, abilities to resolve such inconsistencies, and integration of a coherent sense of self. Mechanisms of mindfulness in facilitating these four main processes of identity development and goal-setting in emerging adults were discussed as follows.

#### **Ongoing Self-Awareness**

Many authors (e.g., Erikson, 1950, 1968; Marcia, 1966; McAdams, 2013; McAdams & Adler, 2010) posited that one of the most important psychological processes promoting identity development is ongoing self-awareness. Self-awareness refers to a source of ego identity that an individual develops through social interactions and maintains a consistent sense of identity (Erikson, 1968). Self-awareness is also viewed as

a way to gain a clear understanding of an individual's own capabilities (e.g., strengths and weaknesses) and a set of personal aspects in the exploration-commitment processes (Marcia, 1966). However, the nature of mind and psychological process sometimes occurs outside or is hidden from people's awareness not only because of the evolutionary of the mind but also because of their tendency to overlook information threatening to them (Wilson, 2009). Many people may have difficulties noticing and processing information or experience, and may get distracted in highly demanding situations (Gilbert & Osborne, 1989) such as in rapidly changing social structures in today's world. Many authors (e.g., Wilson, 2002, 2009; Wilson & Dunn, 2004) suggested that introspection can help people have a better understanding of their thoughts, feelings, and behaviors through the process of interpretation and explanation. However, it may be difficult to assess accuracy of people's introspection as it involves mental processing of which they may be unaware of such as biases, attitudes, beliefs, interpretations, and assumptions (Carlson, 2013; Pronin & Kugler, 2007; Wilson, 2002, 2009; Wilson & Dunn, 2004).

Mindfulness instead can facilitate people's clear awareness of internal and external experiences such as thoughts, feelings, sensations, and surroundings (Brown, Ryan, & Creswell, 2007). When being mindful, individuals are simply noticing what is taking place as it is without comparing, categorizing, evaluating or contemplating that experience, which is different from cognitive processing styles such as introspection as noted above (Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Teasdale, 1999). As a result, a direct observation of events enables individuals to objectively notice and effectively respond to internal and external stimuli (Brown, Ryan, & Creswell, 2007).

Moreover, many models of identity development put an emphasis on an importance of awareness of personal goals, values, and beliefs in the identity development process such as an ability to know one's goals (Erikson, 1968; McAdams, 2011, 2013) and commitment to a set of values and goals (Marcia, 1966). Mindfulness involving a process of direct self-observation without attachment to outcomes can facilitate individuals acknowledging and gaining insight into the nature and the patterns of thinking, feeling and behaving (e.g., goals, values, beliefs) as transient experiences rather than as the permanent experience and the solid self (Bishop et al., 2004; Brown & Ryan, 2003; Carlson, 2013; Segal, Williams, & Teasdale, 2002). For emerging adults, they generally may not be aware of the patterns of their thoughts and feelings that drive decisions (Galles, 2013). Mindfulness thus fosters self-understanding particularly by helping emerging adults recognize what is meaningful and important (Shapiro et al., 2006), objectively observe and reflect on their values, and choose those in line with their true selves (Galles, 2013). Mindfulness can facilitate intrapersonal authenticity in ways that emerging adults are likely to live by their values and beliefs (Tsur, Berkovitz, & Ginzburg, 2015). Noticing and recognizing the temporary nature of the self in turn helps deconstruct the process and the development of an identity (Epstein, 1988).

Santorelli (1992) conducted a study using a cross-sectional case analysis method, with 8 adult participants attending the Mindfulness Meditation Training program. Santorelli (1992) suggested that increased mindfulness helped participants who had a commitment to a set of values, goals, and beliefs reflected more on their experiences, and also helped those who were exploring alternatives and did not establish in any goals

became more able to modify problematic or unhealthy behavior. Bishop et al. (2004) further suggested that autobiographical narratives would be useful research methods to test and investigate how these mechanisms of mindfulness are related to the identity development process in terms of how they come to understand themselves.

### **Awareness of Inconsistency between Personal Needs and External Demands**

Identity development is often seen as ongoing interactions between individuals and their social environments. Particularly in rapidly changing social structures in today's world, emerging adults frequently experience changing personal needs, high demands from society, and inconsistencies between their own needs and the needs from other people and the external world, which is so-called incongruity by many authors (e.g., Erikson, 1950, 1968; Marcia, 1966; McAdams & Adler, 2010). Individuals may encounter a tension between their personal goals, opposing choices, and external expectations (Adam & Marshall, 1996). These unpleasant or sometimes painful events and experiences may cause individuals to receive ego-threatening information, have negative views of themselves, and experience negative emotions such as distress, anxiety, and frustration (e.g., Bishop et al., 2004; Carlson, 2013; Hayes et al., 1996). Perhaps as a threat to aspects of the self, unpleasant experiences may be kept outside or hidden from conscious awareness, and these phenomena may in fact continue to affect their thinking, feeling, and behaving (e.g., Brown, Ryan, & Creswell, 2007; Wilson & Dunn, 2004), which may unconsciously cause psychological distress in the long run (e.g., Bishop et al., 2004; Hayes et al., 1996).

Mindfulness particularly in relation to decentering (Segal et al., 2002) can facilitate direct contact with unpleasant or painful realities as impermanent rather than permanent experiences requiring subjective interpretations, which subsequently leads to reductions in cognitive and emotional reactivity and avoidance behavior (e.g., Creswell et al., 2007; Hayes, Strosahl, & Wilson, 1999; Hayes & Shenk, 2004; Ryan, 2005), as well as increases in acceptance of unpleasant states and adaptive behavioral responses (e.g., Borkovec, 2002; Levitt, Brown, Orsillo, & Barlow, 2004). Similarly, many authors (e.g., Bishop et al., 2004; Hayes, Strosahl, & Wilson, 1999; Hayes & Shenk, 2004) suggested that because of mindfulness, individuals can experience distressing emotion as it is without subjective explanation or interpretation, which in turn leads them to loosen the meaning of unpleasant and threatening experience and enhance self-acceptance.

Williams, Teasdale, Segal, and Soulsby (2000) conducted a randomized control trial with 45 participants who were randomly assigned to receive either the Mindfulness-Based Cognitive Therapy (MBCT) training program in addition to treatment as usual or the treatment as usual program alone as a control group. Williams et al. (2000) found that participants with depression were more likely to remember past experience and recall it in a vague way, and demonstrate overgeneralized autobiographical information. However, these patients with depression reported more detailed distressing memories about their depression and relapse after receiving the Mindfulness-Based Cognitive Therapy (MBCT) training program. They suggested when participants practiced mindfulness, they may notice unpleasant experiences non-judgmentally and later may have a loosening of attachment to the meaning of their unpleasant experiences. As a

result, after mindfulness practice, patients with depression tended to provide more detailed and balanced autobiographical information.

### **Ability to Resolve the Inconsistency**

In the identity development process, many theorists (e.g., Erikson, 1950, 1968; McAdams & Adler, 2010) emphasized not only individuals' awareness of inconsistency between their own needs and the needs from others or social environments, but also their understanding of the self in such a relational context and abilities to resolve such an inconsistency in order to develop a clearer sense of self. Erikson (1950, 1968) indicated that ego identity constantly changes as a result of new experiences, and individuals need to resolve the conflict and the incongruity in order to establish an identity (identity synthesis and identity confusion). Marcia (1966) posited that individuals with the moratorium status often seek out novel information about themselves and the environment in order to make a decision based on different alternatives. McAdams and colleagues (e.g., McAdams, 2011, 2013; McAdams & Adler, 2010) also proposed that it is essential that individuals experience greater awareness of incongruity and distress, which in turn enables them to seek out information and develop self-regulation to arrive a resolution. According to McAdams (2011, 2013), individuals as social actor need to keep tracking their internal experience and regulate their external behavior in order to live up to their personal needs and the needs from others such as society in which they are embedded. In the face of inconsistency and incongruity, persons as motivated agent may also need to give up some previous goals and choose to adjust and pursue new goals

(McAdams, 2013). Persons as autobiographical author may also need to employ self-discipline and self-control in order to create life stories in a more coherent way (McAdams, 2013).

However, people usually compare between what actually is and what is desired or between how they view things and how they should be, and subsequently put an effort to reduce such a discrepancy (Carver & Scheier, 1990; Segal et al., 2002; Sipe & Eisendrath, 2012), which in turn leads to negative affect, distress, and a sense of dissatisfaction (Carver & Scheier, 1990; Hayes et al., 1996; Segal et al., 2002). In general, when goals cannot be met, individuals tend to avoid potentially negative experiences, leading to heightened anxiety (Wells, 1999) and ruminative thinking (Martin & Tesser, 1996). People in general may make an effort to change the current state by moving it closer to their desirable states or goals (Carver & Scheier, 1990). Distress and a sense of dissatisfaction will decrease when the discrepancy is reduced as a result of people's being closer to goals or giving up previous goals that may no longer work (Martin & Tesser, 1996). Adam and Marshall (1996) posited that greater awareness of incongruity and inconsistency could potentially facilitate confrontation within the self particularly in terms of a tension between alternatives, which in turn leads individuals to seek out more information in order to arrive a resolution.

Mindfulness is a first step to help individuals recognize and non-judgmentally accept such a discrepancy as it is without an attempt to reduce or fight against it (e.g., Hayes, Strosahl, & Wilson, 1999; Hayes et al., 1996; Segal et al., 2002). Segal et al.

(2002) proposed that “there is no need to evaluate experience in order to reduce discrepancies between actual and desired states” (p. 73). Furthermore, metacognitive insight and decentering perspective (e.g., Segal et al., 2002; Teasdale, Segal, & Williams, 1995), which are important components of mindfulness, can facilitate individuals’ willingness to face, accept, and be open to change ego-threatening information in thoughts and emotions (Brown, Ryan, & Creswell, 2007; Teasdale et al., 2002). In other words, an open awareness and receptive observation of internal and external experiences can facilitate individuals becoming attentive to their needs and goals, regulating their own actions and responses, and making choices consistent with their needs and interests that fit with personal and situational demands (Bishop et al., 2004; Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007). In addition, mindfulness involves individuals’ self-awareness and self-understanding of their habits without being colored by interpretations, which can help them notice the consequences of their own responses and make changes that provide more desirable outcomes (Brown, Ryan, & Creswell, 2007; Carlson, 2013). Mindfulness facilitates the development of insight into self, others and external environments, as well as more flexible and adaptive responses rather than automatic reactions, leading to a sense of choice in behavior (Bishop et al., 2004; Brown, Ryan, & Creswell, 2007; Deci & Ryan, 1985; Hayes, Strosahl, & Wilson, 1999; Ryan, 2005).

More importantly, as the identity development process involves ongoing interactions between individuals and the environments, mindfulness can help emerging adults approach situations as new and unique experiences through non-attachment to the internal self and the external world (Brown, Ryan, & Creswell, 2007; Hayes, Strosahl, &

Wilson, 1999; Langer, 1989). In the face of incongruity and particularly difficult emotional circumstances, mindfulness enables emerging adults to challenge their previous understanding of themselves and the outside world, let go previous maladaptive goals that may no longer work, and develop new goals based on present realities as new experiences they are encountering with (Brown, Ryan, & Creswell, 2007; Langer, 1989; Langer & Moldoveanu, 2000). As a result, emerging adults will likely have more willingness to change and update their points of view, and create new categories and information of experiences and aspects of the self (Hayes, Strosahl, & Wilson, 1999; Langer, 1989; Langer & Moldoveanu, 2000; Robinson, 2012). Having openness to change and engagement in exploring alternatives is an important process of identity development (Robinson, 2012).

### **Integration of a Sense of Identity**

Several authors proposed the marker of healthy identity development is a sense of continuity (Erikson, 1950, 1968), a balance between the commitment and exploration dimension (Marcia, 1966), and a sense of coherence over time and across situations (McAdams & Adler, 2010), all of which seemingly reflect an integrated sense of self in the identity development process. For instance, McAdams proposed that persons as autobiographical author demonstrate a sense of coherence and continuity by constructing and comprising many different aspects of the self from the past, the present, and the future in order to draw a conclusion about the self and create a life story (Addis & Tippett, 2008; McAdams, 2011, 2013). The literature showed that narrative coherence as

referred to an integrative life story was positively associated with psychological well-being (Water & Fivush, 2015) and life satisfaction (Baerger & McAdams, 1999). In contrast, individuals with lack of insight particularly into future orientations such as how they will feel and behave tended to report low life satisfaction (Wilson & Gilbert, 2005).

Wilson and Dunn (2004) proposed that introspection can facilitate people making sense of events particularly those who may find it difficult to construct a coherent narrative about themselves such as people experiencing traumatic events. However, people may not have direct and authentic access to unconscious mental processes because information may be altered, colored, or filtered by their own interpretations and examinations of thoughts, emotions, behaviors, and the events (Wilson & Dunn, 2004). In addition, people in general tend to experience distractions in moment-by-moment meaning-making processes, leading to disruptions in development of a sense of continuity and narrative coherence (Addis & Tippett, 2008; McAdams, 2011, 2013).

Mindfulness instead can facilitate a process of bringing unconsciousness to consciousness through direct and non-evaluative self-observation (e.g., Bishop et al., 2004; Brown, Ryan, & Creswell, 2007). Mindfulness is also believed to facilitate a sense of continuity and insight particularly attention that can move from narrow focus to broad awareness (Brown, Ryan, & Creswell, 2007). Not only do individuals involve in the process of self-observation and attention regulation at the beginning of mindful state, but they also subsequently have an ability to construct mental processes and representations of the self and others (Bishop et al., 2004). This is because they are more capable of

seeing the relationships among internal and external experiences, understanding the causes and consequences of their behavior, and disengaging from self-concerns and self-serving biases (e.g., Bishop et al., 2004; Brown, Ryan, & Creswell, 2007). Kernis and colleagues (e.g., Goldman & Kernis, 2002; Kernis, 2003; Kernis & Goldman, 2006; Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000) believed that individuals with a quite ego tend to have clear self-knowledge, agency and authentic functioning, as well as integrate a strong sense of self. They specifically convinced that a strong sense of self and authentic functioning are related to mindfulness.

Emanuel, Updegraff, Kalmbach, and Ciesla (2010) conducted a correlational study using regression analysis to examine relationships between mindfulness and ability to forecast emotional experiences with a sample of 188 emerging adults. They found that emerging adults with higher levels of mindfulness were likely to predict how they would feel in the future more accurately than those with lower levels of mindfulness. Emanuel et al. (2010) suggested that mindfulness helps individuals pay attention to the present moment especially the dynamic interplay between emotional experiences and external circumstances. As a result, emerging adults with higher levels of mindfulness were less likely to be vulnerable with or triggered by some common biases they may experience similar events in the past (Emanuel et al., 2010). In addition, Zhang (2011) conducted a survey study with a sample of 166 undergraduate students and found that mindfulness as a non-evaluative observation was positively correlated with vocational identity development, and negatively correlated with career decision-making difficulties. Zhang (2011) suggested that mindfulness facilitated individuals' perceptions about the past, the

present and the future with less biases, which in turn helped them better cope with emotional difficulties, more engage in the career development process, and develop a clearer vocational identity.

Through these four main processes, it was conceptualized in this present study that mindfulness facilitates the process of identity development and goal-setting in emerging adults. Empirical research on these related variables in the existing literature was reviewed and discussed as follows.

### **Empirical Studies Investigating Associations Between Mindfulness, Identity Development, and Goal-Setting**

Over the past decades, several authors have attempted to investigate and answer how identity development could be facilitated and developed over one's life course particularly among emerging adults. Many articles have discussed and proposed potential benefits and roles of mindfulness in promoting identity development in late adolescent and emerging adult populations. Research on mindfulness in other disciplines has tremendously increased; however, very few empirical studies investigating relationships between mindfulness, identity development, and goal-setting have been found. Empirical studies investigating such associations among these variables were reviewed as follows.

## **Mindfulness and Identity Development**

Prior studies examining relationships between mindfulness and identity development have used research methods such as clinical interventions, correlational studies, etc. For mindfulness-based interventions in emerging adult and college student populations, for example, many research studies seemed to focus on investigating the effect of the intervention programs on reductions in maladaptive functioning such as social anxiety (Stefan et al., 2018), binge drinking (Mermelstein & Garske, 2015), unhealthy eating behaviors (Marchiori & Papies, 2014), smoking behaviors (Bowen & Marlatt, 2009), and video game addiction (Li, Garland, O'Brien, Tronnier, McGovern, Anthony, & Howard, 2017). Some studies examined the effect of mindfulness-based interventions on normative development outcomes such as stress reduction (Gu, Cavanagh, & Strauss, 2017; Phang et al., 2015; Ramasubramanian, 2017) and overall well-being (Ng et al., 2016). Interestingly, research studies (e.g., Atkins & Styles, 2015; Leroy et al., 2013) which examined the impact of mindfulness-based interventions on identity-related variables have been found in an adult population rather than in an emerging adult population. Previous studies and empirical findings examining mindfulness, identity development, and other related variables were reviewed as follows (see Table 1).

First of all, Robinson (2012) conducted a correlational study to examine associations between cognitive mindfulness and identity development as well as the role of ecological systems in self-perceptions with a sample of 203 emerging adults. Drawing

upon the Optimal Theory of Adult Identity Development (OTAID; Myers et al., 1991) as theoretical framework, Robinson (2012) conceptualized that mindfulness as cognitive operations can facilitate the process of identity development (e.g., being open to change, self-discovering, developing self-knowledge, and exploring alternatives) through an integration of the self such as age, race, ethnicity, culture, and worldview. Robinson (2012) used the lens of Bronfenbrenner's (2005) ecological framework, and proposed that the microsystem, the mesosystem, the exosystem, and the macro system had an impact on emerging adults' identity development and self-knowledge. The findings showed moderate associations between engagement/individuation and immersion, novelty producing and individuation, and cognitive flexibility and integration, which suggested significantly positive relationships between cognitive mindfulness and identity development. Together with the qualitative data, the findings suggested that cognitive mindfulness plays an important role in fostering an integrated sense of self in emerging adults which may be influenced by their self-perceptions in interactions with others.

Table 1

*Key Findings of Research Examining Associations Between Mindfulness, Identity Development, and Other Related Variables*

<b>Study</b>	<b>N</b>	<b>Mean Age</b>	<b>Mindfulness</b>	<b>Identity</b>	<b>Other Variables</b>	<b>Key Findings</b>
Atkins and Styles (2015)	7; Adults	40	MBSR mindfulness training intervention	Identity through story-telling	N/A	After the mindfulness program, participants reported more flexible perspective taking.
Leroy et al. (2013)	68; Adults	42	MBSR mindfulness training intervention	Authentic functioning	Work engagement	Authentic functioning mediated the relationships between mindfulness and work engagement.
Markowitz (2014)	617; Undergrad students	18	Dispositional mindfulness as personality variable	Ego identity status as personality variable	College adjustment	Participants with higher levels of mindfulness and more advanced identity were likely to have greater adjustment.
Peer and McAuslan (2016)	1,293; Emerging adults	21	Dispositional mindfulness	Normative processes of identity development in emerging adults	Self-doubt	Participants with higher levels of mindfulness reported lower levels of a sense of instability; leading to less self-doubt.
Robinson (2012)	203; Emerging adults	24	Mindfulness as cognitive operations	Identity drawn upon the OTAID model	Contextual factors	Mindfulness was positively associated with an integrated sense of identity.
Shirai et al. (2016)	232; Emerging adults	21	Mindfulness related to time beliefs	Identity as commitment, exploration, and crisis.	N/A	Commitment was associated with future orientation, and exploration was associated with present and future one.
Tsur et al. (2015)	341; University students	28	Mindfulness included attention and open experience	Authentic behavior	Bodily awareness and clarity of emotion	Mindfulness moderated associations between body awareness and authentic behavior.

Markowitz (2014) investigated the role of personality variables, which included ego identity status (EIS) and dispositional mindfulness, in predicting college adjustment outcomes especially related to personal, emotional, and social functioning with a sample of 617 undergraduate students. Markowitz (2014) found that college students reporting more developed forms of identity (e.g., the achieved status) and higher levels of dispositional mindfulness were likely to have greater personal, emotional, and social college adjustment. In addition, the findings indicated that mindfulness moderated the association between ego identity formation and college adjustment. Dispositional mindfulness was also found to have a greater impact on college students who possessed less advanced forms of identity (e.g., diffusion and foreclosure) than those with the moratorium and achieved status. These findings suggested that mindfulness plays a protective role in emerging adults' identity development particularly those who may just start going through the process of exploration and commitment. This study provided potential implications that mindfulness strategies could be integrated in interventions aimed at facilitating identity formation and adaptive adjustment in order to ensure undergraduate students' successful transitions from high-school to college.

Moreover, Peer and McAuslan (2016) investigated whether and how dispositional mindfulness mediated the associations between normative processes of identity development (e.g., exploring an identity, experimenting possibilities, having a sense of instability, focusing on the self, and feeling in-between adolescence and adulthood) and self-doubt with a sample of 1,293 emerging adults. The findings showed that emerging adults with higher levels of mindfulness were less likely to feel unstable about a sense of

self and feel in-between adolescence and adulthood, as well as more likely to focus on themselves in terms of what they wanted and who they were as a person. As a result, they were less likely to be doubtful about a sense of self. The findings suggested that mindfulness may play a protective role against self-doubt by enhancing emerging adults' capabilities to be attentive and concentrate on the present moment. In addition, the results showed significantly positive associations between age, but not gender, and dispositional mindfulness. However, both age and gender had moderating effects on the associations between developmental dimensions of emerging adults and dispositional mindfulness, and on the associations between developmental dimensions of emerging adults and self-doubt.

Furthermore, Shirai, Nakamura, and Katsuma (2016) conducted a longitudinal study using the Structural Equation Modeling (SEM) analysis to investigate the relationships between time belief and identity development with a sample of 232 emerging adults. The data was collected at three points at ages 24, 27, and 30. Shirai, Nakamura, and Katsuma (2016) adopted Bosma and Kunnen's (2001) and Kunnen's (2012) conceptual model of identity development that involves three processes – commitment, exploration, and crisis. Shirai, Nakamura, and Katsuma (2016) also proposed that time belief was a construct consisting of delaying immediate gratification, having no concerns about the future, and being mindful of the present moment. In this study, mindfulness was viewed as a state helping emerging adults integrate the past and the future through awareness and concentration on the present moment. The findings showed that the older participants were, the less likely they engaged in identity

exploration, and no gender differences were found. The results also indicated that commitment was associated positively with delay of gratification and negatively with unconcern for the future. On the contrary, exploration was positively related to delaying immediate gratification and being mindful of the present moment, as well as negatively related to having no concerns about the future. However, none of time-belief components were found to be associated with crisis. These findings suggested that present and future orientations can facilitate the process of exploration, and a future orientation can foster commitment. The study suggested that mindfulness can promote emerging adults' identity exploration by helping them become attentive to their sense of self and experience in the present moment, seek information about themselves and others, evaluate possible options, and set future goals.

Additionally, Tsur, Berkovitz, and Ginzburg (2015) conceptualized that sensitivity to bodily sensations and clarity of emotions were important components of an individual's self-knowledge. They investigated how the relationships between body awareness and emotional clarity contributed to authentic behavior (e.g., intrapersonal and interpersonal) through the moderating role of mindfulness with a sample of 341 university students, using the Structural Equation Modeling (SEM) analysis. The findings showed a moderate correlation between body awareness and emotional clarity. Mindfulness was found to moderate the association between body awareness and interpersonal-authentic behavior. Emotional clarity was also associated with both intra- and inter-personal authenticity, and particularly with inter-personal authenticity through the mediating role of mindfulness. The findings suggested that mindfulness may foster

awareness of bodily signals and clarity of emotion, leading individuals to have the ability to act authentically in line with their beliefs and values, as well as to navigate the self in relation to others and the context. The results also suggested that paying attention to the present moment may help emerging adults become connected to and aware of their bodily and emotional experiences and then adapt to the surroundings, resulting in higher intrapersonal- and interpersonal-authentic behavior. Overall, the findings suggested that body awareness and emotional clarity together with a non-evaluative observation of the present experience may contribute to self-knowledge and adaptive behavior.

In addition, Atkins and Styles (2015) conducted a qualitative study to explore how seven participants' individual identity changed through story-telling after participating in the Mindfulness-Based Stress Reduction (MBSR) program. Atkins and Styles (2015) proposed that "the way individuals *talk* about the self *is* the process of constructing and maintaining a self" (p. 156). This study provided a rigorous qualitative data in terms of how individual identity could be captured and how mindfulness could be measured, through narratives. Atkins and Styles (2015) investigated how mindfulness can help participants shift from self-referential to more flexible statements. Four main codes were used for analyzing the narratives, which consisted of self-as-story/the conceptualized self (self-as-rigid-story and self-as-flexible-story), self-as-process/the experiential self, and self-as-perspective/the transcendent self. The findings showed that participants were likely to demonstrate their narratives with more flexible perspective taking after receiving the mindfulness training course. Participants' narratives likely demonstrated the reduced use of terms reflecting a rigid, predictable, and conceptualized

sense of self and the increased use of terms representing a sense of present moment and open experience after the training course. The findings indicated that participants were more likely to talk about their experiences as process rather than as content after mindfulness practice. Atkins and Styles (2015) also suggested that, through mindfulness training, participants learned and developed “new ways of *talking* about the self,” which in turn helped their sense of self shift from rigidity to flexibility (p. 156).

Finally, Leroy, Anseel, Dimitrova, and Sels (2013) conducted a cross-sectional study investigating the associations between mindfulness, authentic functioning, and work engagement with a sample of 68 adults receiving the Mindfulness-Based Stress Reduction (MBSR) program. The data was collected from eight groups of participants (e.g., six intervention groups and two waiting-list control groups) at three points – before the intervention, two months after the intervention, and four months after the intervention). In this study, mindfulness was conceptualized from the work of Brown and Ryan (2003) as a construct involving being attentive and aware of the present moment internally and externally. The findings showed the associations between mindfulness and work engagement through the mediating role of authentic functioning. Authentic functioning was also found to partially mediate the relationships at a specific point in time, and fully mediate the relationships when they changed over time through the course of mindfulness training. The findings suggested that mindfulness facilitated individuals’ attention and the ability to focus on the tasks, directly leading them to get more fully engaged in their work. In addition, mindfulness enhanced individuals’ authentic functioning by acknowledging what they wanted and needed, and executing

their behaviors in accordance with their true selves, which indirectly promoted work engagement. The findings also suggested that authentic functioning may involve openness, humility, expression of true selves, and adaptation at the same time.

### **Mindfulness and Vocational Identity Development**

Many authors (e.g., Jacob & Blustein, 2008) emphasized the role of mindfulness in facilitating career identity development particularly in the context of vocational psychology. However, there have been very few empirical studies investigating associations between mindfulness and vocational identity development in emerging adults (see Table 2).

First of all, Galles (2013) examined the associations between vocational identity, dysfunctional career thoughts, decision-making styles, and mindfulness with a sample of 258 undergraduate university students. Drawing upon the Cognitive Information Processing (CIP; Sampson, Peterson, Reardon, & Lenz, 2004) theory of career development, career problem solving and decision-making processes may require emerging adults to have metacognitive knowledge and metacognitive control in order to monitor and clarify their values and goals, have a non-biased view of different career options, make careful career planning, and evaluate performance and outcomes. In this regard, mindfulness involved metacognition in helping emerging adults have a better understanding of themselves and the world of work, and reflect on thoughts and emotions related to career decisions. The findings showed that college students with higher levels of mindfulness were likely to have fewer dysfunctional career thoughts and higher levels

of vocational identity, regardless of decision-making styles. The study suggested that mindfulness may help college students develop self-knowledge (e.g., values, skills, and career interests), self-regulation and vocational identity development, which in turn may help them engage in career problem solving and decision-making processes effectively.

Table 2

*Key Findings of Research Examining Associations Between Mindfulness, Vocational Identity Development, and Other Related Variables*

<b>Study</b>	<b>N</b>	<b>Mean Age</b>	<b>Mindfulness</b>	<b>Identity</b>	<b>Other Variables</b>	<b>Key Findings</b>
Galles (2013)	258; Undergrad students	20	Mindfulness as meta-cognition	Identity drawn upon the Cognitive Information Processing (CIP) theory	Career thoughts and vocational decision making styles	Participants with higher levels of mindfulness reported fewer dysfunctional career thoughts and greater vocational identity.
Littman-Ovadia et al. (2013)	156; Adults	39	Mindfulness as cognitive operations and openness to new experiences	Holland's RIASEC vocational personalities	N/A	Mindfulness was associated with the Realistic, Investigative, and Artistic types.
Taber and Blankemeyer (2015)	165; College students	20	Mindfulness as present-time perspective	Vocational identity statuses	Time perspective	Achieved status was associated with the ability to be aware of the present moment and recognize the relationships between current behaviors and future outcomes.
Zhang (2011)	166; Undergrad students	19	Dispositional mindfulness	Career engagement and decision-making	Emotional career indecision	Higher dispositional mindfulness was associated with fewer career decision-making difficulties and emotional concerns.

In addition, Zhang (2011) investigated the relationships between dispositional mindfulness, career engagement, and emotional career indecision with a sample of 166 undergraduate university students. The study found that higher levels of dispositional mindfulness were associated with lower levels of career decision-making difficulties and emotional concerns. The findings suggested that college students with higher scores on mindfulness were likely to be less worried about the past and the future, have a greater sense of self-regulation, have a clearer understanding of their vocational identity, and better cope with emotional difficulties. The findings suggested when they had a non-judgmental view of their cognitive and emotional experiences, they tended to have less negative views of the self and career-related expectations and outcomes. As a result, they became more engaged in occupational activities particularly related to career exploration, information-seeking, and career decision-making processes. Taken together, the study suggested that mindfulness may serve as self-regulation strategies for college students to cope with emotional concerns related to career indecision.

Furthermore, Taber and Blankemeyer (2015) investigated associations between time perspective and vocational identity statuses with a sample of 165 college students. The study posited that time perspective was generally associated with different identity statuses particularly in terms of the ability to view and synthesize the past, the present and the future, and mindfulness played a role as a present time perspective in the development of identity statuses. The findings showed that college students with the achieved vocational identity status were more likely to have the capability to be mindful of and enjoy the present moment, not negatively view the past, and recognize the

relationships between current behaviors and future outcomes. The study suggested that college students with the achieved vocational identity status may have self-regulation and enjoy the present moment; enabling them to develop the capability to explore and devote to whatever they feel interested with respect to career and the world of work. On the other hand, college students classified as the diffused vocational identity status reported no associations with present oriented time perspective, viewed the past experience in negative ways, and less oriented toward the future. The study suggested that college students with the diffused vocational identity status may find it difficult to actively engage in career exploration, reflect on what they want, and make a commitment to what they want to do in the future because they may be caught up in negative past experiences.

Finally, Littman-Ovadia, Zilcha-Mano, and Langer (2013) investigated the associations between mindfulness and Holland's (1997) RIASEC vocational personalities with a sample of 156 adults. The study adopted Langer's conceptualization of mindfulness in terms of being open to new experiences and cognitively generating novel information and categories. The results indicated significant relationships between trait mindfulness and the Realistic, Investigative, and Artistic types, and no significant relationships between mindfulness and the Enterprising type of vocational personalities. The study suggested this may be because mindfulness may share common factors with the Realistic, Investigative, and Artistic types respectively in terms of self-regulation, a sense of curiosity and openness to new experiences, and creativity to generate novel information and category.

## **Two Models of Identity Development and Other Related Variables**

McLean and Pasupathi (2012) conceptualized that “both the status and narrative approaches value and place theoretical emphasis on the processes of identity development” (p. 13). However, very few empirical studies (see Table 3) have examined relationships between mindfulness and these two models of identity development – the identity status model and narrative identity in emerging adulthood.

First of all, McLean and Pratt (2006) conducted a 6-year longitudinal study to investigate how two different identity approaches were associated with meaning-making, generativity, and optimism with a sample of adolescent and emerging adult participants ages 17-23 years, using turning point narratives. The findings showed significant associations between less sophisticated meaning-making and the diffusion and foreclosure statuses, as well as between more sophisticated meaning-making and identity maturity index. In addition, the results showed positive and moderate relationships between more sophisticated forms of meaning-making and dispositional traits of generativity and optimism, particularly in a redemptive story sequence which referred to turning negative life events to positive outcomes. These findings suggested that narratives may help unfold the processes and the aspects of identity development especially how emerging adults come to understand a sense of self and how personality has an influence on identity development processes.

Table 3

*Key Findings of Research Examining Associations Between Two Identity Development Models and Other Related Variables*

<b>Study</b>	<b>N</b>	<b>Mean Age</b>	<b>Identity Status</b>	<b>Narrative Identity</b>	<b>Other Variables</b>	<b>Key Findings</b>
Dumas et al. (2009)	200; Teenagers	17.4 and 26 (9-year longitudinal study)	Objective Measure of Ego Identity Status (OMEIS)	Coherent positive resolution and event severity	Perceived parenting and emotional adjustment	Those with clearer and more positive resolution reported more mature identity and greater emotional adjustment.
Liao et al. (2015)	85; Female undergrad students	20	Objective Measure of Ego Identity Status (OMEIS)	Redemption and contamination sequences	Well-being	Students with the achieved status and with the narratives of redemptive sequence reported greater well-being.
McLean and Pratt (2012)	200; Teenagers and emerging adults	17.4 and 23 (6-year longitudinal study)	Objective Measure of Ego Identity Status (OMEIS)	Meaning-making, event type, and story emotional tone	Optimism and generative concern	There were associations between less sophisticated meaning-making and diffusion, and between more sophisticated meaning-making and identity maturity index.

Moreover, Liao, Bluck, and Cheng (2015) examined how two aspects of narrative identity – redemption and contamination, compared to the identity status model were associated with psychological well-being with a sample of 85 female emerging adults in Taiwan. The results showed that participants with the achieved identity status reported greater psychological well-being, and those with the narratives of redemptive sequence independent of the achieved status showed greater psychological well-being. Liao, Bluck, and Cheng (2015) suggested that individuals who were able to reframe or turn negative experiences into a positive way were more likely to have a greater sense of

psychological well-being, which was consistent with McAdams' narrative identity (e.g., McAdams, Reynolds, Lewis, Patten, & Bowman, 2001).

Finally, Dumas, Lawford, Tieu, and Pratt (2009) conducted a 9-year longitudinal study to investigate how perceived parenting in adolescence was associated with life story narratives, identity maturity index, and emotional adjustment in subsequent emerging adulthood with a sample of 100 participants. Drawing upon the work of Pals (2006) and Habermas and Bluck (2000), Dumas et al. (2009) conceptualized that life story narratives include clarity, coherence, positive tone, and emotion resolution, resulting in coherent positive resolution. The findings showed that adolescents at age 17 reporting more positive parenting were likely to show clearer evidence of coherent positive resolution at age 26 in emerging adulthood. Dumas et al. (2009) suggested that they were more able to accept and take positivity from their negative life events and experiences. In addition, the results indicated that emerging adults with clearer and more positive resolution reported more mature identity index and greater emotional adjustment (e.g., optimistic attitude, a sense of well-being, and low levels of depressive symptoms) than those with less coherent positive resolution. Particularly, participants with more advanced identity status were more likely to demonstrate coherent narratives and integrate challenging life situations into life stories, whereas those with the diffusion and moratorium statuses showed lower levels of coherent positive resolution. These findings suggested that individuals with the diffused or moratorium identity statuses may not develop a clear sense of self and therefore may not be able to move on from negative experiences and emotions.

Taken together, McLean and Pasupathi (2012) summarized and proposed that the identity status model and narrative identity are correlated in terms of the exploration-commitment dimension. Particularly, individuals may construct and tell their life stories as a way to navigate and explore alternatives and figure out what is important for them (McLean & Pasupathi, 2012). McLean and Pasupathi (2012) also indicated that these two identity development models seem to agree that the process of identity development involves goal-setting. The identity status model proposed that individuals with the achieved identity status are likely to make commitments to an identity, which may guide their goal-directed behaviors (McLean & Pasupathi, 2012). In addition, McAdams and McLean (2013) posited that people generally use a narrative life story to integrate different aspects of life in the past and the present, as well as envision how they see themselves in the future. Through the use of narratives and the process of meaning-making, people explore and try out their different identities and commitments, which may reflect perceptions about themselves and their engagement in the process of setting and attaining future goals (McAdams & McLean, 2013; McLean & Pasupathi, 2012).

Many authors (e.g., Crane, Barnhofer, Hargus, Amarasinghe, & Winder, 2010a; Crane, Jandric, Barnhofer, & Williams, 2010b) suggested that mindfulness plays a role and has an impact on self-regulation which is an important process of developing life goals. To date, very few studies (e.g., Craner et al., 2010a, 2010b) examined relationships between mindfulness and goal-related variables. However, these studies have not examined the impact of mindfulness on goal-setting or goal-directed behavior per se. Craner and colleagues (Craner et al., 2010a, 2010b) employed conditional goal

setting (CGS) which refers to the way individuals want to achieve particular lower-order goals that tend to be conditional for them before taking another step to reach higher-order goals. The studies showed that depressed patients with an increase in dispositional mindfulness after receiving the Mindfulness-Based Cognitive Therapy (MBCT) program tended to report decreases in conditional goal setting (Craner et al., 2010a, 2010b). These findings suggested that individuals with higher levels of mindfulness were likely to be more aware and less ruminate when conditional goal setting may no longer be adaptive or when unachieved lower-order goal may no longer work, leading them to become more flexible to re-engage in setting more adaptive new goals (Craner et al., 2010a, 2010b).

Consistent with the Selection, Optimization, and Compensation (SOC) theory (Baltes, 1997), people generally not only make and regulate choices but also compensate their earlier goals that may no longer work through adjusting their goals to deal with challenges and new opportunities, leading to greater well-being. In this sense, mindfulness that involves awareness of the self and the environment as well as self-regulation facilitates the process of developing and adjusting goals. Interestingly, many identity development theories proposed associations between identity formation and goal-related outcomes such as goal-formation and goal-pursuit, but little empirical work investigated these relationships (Dietrich, Parker, & Salmela-Aro, 2012). More importantly, the literature (e.g., Markowitz, 2014; Robinson, 2012) suggested that mindfulness can promote the process of identity development in emerging adults. However, very few research studies examined the role of mindfulness in identity development from two different identity models.

It was important to investigate and better understand how emerging adults come to understand and commit to an identity and how their narratives can capture these processes through the impact of mindfulness. Therefore, the purpose of this dissertation study was to investigate the role of mindfulness in facilitating the process of identity development and goal-setting in emerging adults from two identity approaches – the identity status model and narrative identity. The findings can provide a better understanding of how mindfulness operates and supports theoretical assumptions about how emerging adults form an identity, as well as set, regulate, and adjust their goals in the face of challenges and new opportunities, which are critical and adaptive processes of identity development in emerging adulthood.

## **CHAPTER THREE: METHODOLOGY**

The purpose of this dissertation study was to investigate the role of mindfulness in the process of identity development and goal-setting in emerging adults based on two different identity approaches – the identity status model and narrative identity. Based on an extensive review of the literature in Chapter Two, it was apparent that mindfulness played a significant role in facilitating emerging adults’ self-awareness and abilities to integrate a sense of identity. Through these identity development processes, it was believed that mindfulness eventually helped emerging adults become able to set clearly-defined goals in life. This dissertation study was intended to extend the existing literature on identity development theories, mindfulness, and an outcome variable particularly goal-setting in an emerging adult population. This chapter included five sections – research questions and hypotheses, research design, data collection, measures, and data analyses.

### **Research Questions and Hypotheses**

**Q1:** What were relationships between mindfulness, goal-setting, and identity-related variables from two identity approaches – the identity status model and narrative identity?

**H1.1:** There were significantly positive relationships between mindfulness, more advanced identity status, identity maturity index, and goal-setting.

**H1.2:** There were significantly positive relationships between mindfulness, narrative coherence, meaning-making, narrative identity, and goal-setting.

**Q2:** What were relationships between the identity status model and narrative identity?

**H2.1:** There were significantly positive relationships between more advanced identity status, identity maturity index, narrative coherence, meaning-making, and narrative identity.

**Q2.1:** What were similarities and differences in emerging adults' narratives between the extremely high identity maturity group and the extremely low identity maturity group?

**Q3:** What was the role of mindfulness in identity development and goal-setting?

**H3.1:** Mindfulness and identity-related variables (identity maturity index and narrative identity) together had a significantly positive impact on goal-setting.

**H3.2:** There was a significantly positive relationship between mindfulness and goal-setting; through a mediating role of identity-related variables (identity maturity index and narrative identity). Mindfulness had a significantly positive impact on identity development, which indirectly had a significantly positive impact on goal-setting.

**H3.3:** Mindfulness had a more significantly positive impact on goal-setting in the high identity maturity group than in the low identity maturity group.

## Research Design

A mixed-methods research was used for this dissertation study. In response to research questions, a combination between quantitative and qualitative data collection sought to provide more meaningful interpretations and deeper understanding of the findings and theoretical frameworks (e.g., Collins, Onwuegbuzie, & Sutton, 2006; Teddlie & Tashakkori, 2003). According to Creswell, Plano Clark, Gutmann, and Hanson (2003), a *concurrent-embedded design* was used in this study because both quantitative and qualitative data were collected at the same time. The quantitative method was primarily used to guide the findings, whereas the qualitative method was used as a secondary approach embedded in the quantitative method in order to support the findings and address different research questions (Creswell et al., 2003).

A main purpose for conducting both quantitative and qualitative data collection and data analyses was to examine, triangulate, and interpret a single set of findings from different methods and from different perspectives, leading to stronger results (Creswell et al., 2003; Greene, Caracelli, & Graham, 1989). While quantitative results can increase generalizability, qualitative results can help explain and test for consistency, and therefore the combination can lead to greater insight into the findings and theoretical frameworks (e.g., Creswell et al., 2003; Johnson & Onwuegbuzie, 2004). Two groups of identity samples were further evaluated using qualitative data analysis – individuals classified as the extremely high identity maturity group and individuals classified as the extremely low identity maturity group. Using mixed-methods research, narrative

responses were analyzed to add meaning to the quantitative data (Johnson & Onwuegbuzie, 2004), which allowed to synthesize, identify, and fill the gap in the literature especially related to two different identity approaches – the identity status model and narrative identity.

## **Data Collection**

### **Participants**

The sample of this dissertation study consisted of 130 participants. Of the total sample, 119 participants completed both quantitative questionnaires and qualitative responses. 156 participants initially did the survey; however, 26 responses were removed because the survey completion time indicated that the participants likely did not complete at least one of the three measures on the survey. The demographic information of the 130 participants was shown in Table 4. Participants' ages ranged from 18 to 26 ( $M = 20.1$ ,  $SD = 1.4$ ). There were 108 females (83.1%), 21 males (16.2%), and 1 others (0.8%). In our sample, 77 (59.2%) participants self-identified as White/Caucasian, 10 (7.7%) as Hispanic/Latino, 9 (6.9%) as Black/African American, 28 (21.5%) as Asian/Pacific Islander, and 6 (4.6%) as others or multiracial.

Table 4  
*Demographic Information (N = 130)*

Participant Characteristics	<i>n</i>	Percentage
<b>Gender</b>		
Male	21	16.2
Female	108	83.1
Others	1	0.8
<b>Race and Ethnicity</b>		
White/Caucasian	77	59.2
Hispanic/Latino	10	7.7
Black/African American	9	6.9
Asian/Pacific Islander	28	21.5
Native American	-	-
Others	6	4.6
<b>Grade Level</b>		
Freshmen	30	23.1
Sophomore	42	32.3
Junior	19	14.6
Senior	39	30.0

### **Study Procedure**

Participant recruitment took place in the Spring 2017 semester in a private university in Boston, Massachusetts, through two main approaches. First of all, the author and research assistants went to six undergraduate classes and advertised the study

to students, with the instructor's permission. Each class comprised approximately 40-50 students. Students were invited to do the online survey during their own time outside the class. It was also noted that if participants were interested, they were able to share the study link to others. Second, participants were recruited during the regularly scheduled meeting time of seven undergraduate classes and one undergraduate student organization, with the instructor's and the staff's permission. Each class and each student organization comprised approximately 15-20 students. Students had an option to choose whether or not they took part in the study. Students who chose not to participate were asked to engage in an alternate activity selected by the instructor (e.g., leaving the class early, doing some readings, or engaging in another course-related activity). After participants completed the online survey, the author and research assistants provided a 10-minute mindfulness workshop to students. In both approaches, participation was voluntary and did not affect participants' class standing at the university.

Participants were asked to complete online questionnaires including demographic questions, the Mindfulness Attention and Awareness Scale (MAAS), the Objective Measure of Ego Identity Status (OM-EIS), and the Goal-Setting scale, and provide narrative responses to open-ended questions. The total completion time of the survey ranged between 30-45 minutes. Participants also had an option to enter a lottery for a one-in-ten chance of being selected for a \$25 gift card upon their successful completion of the survey. As a final sample of  $N = 130$ , 13 participants were selected and given a \$25 gift card. The study was approved by the Institutional Review Board at Boston University.

## Measures

### Mindfulness

The Mindfulness Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item instrument that assesses participants' dispositional or trait-like mindfulness. Participants provided responses to statements using a 6-point Likert scale ranging from 1 (almost always) to 6 (almost never) to rate how frequently they were attentive and aware of what was happening in the present moment. Sample items (see Appendix A) included "I could be experiencing some emotion, and not be conscious of it until some time later." "I tend to walk quickly to get where I'm going without paying attention to what I experience along the way." and "I rush through activities without being really attentive to them." The mean or average score of the 15 items was computed and higher score demonstrated that participants reported higher levels of dispositional mindfulness. The MAAS was validated for use with young adult and college student populations, and demonstrated excellent internal consistency levels (Cronbach's alphas) ranging from .80 to .90 (Brown & Ryan, 2003). The MAAS also showed excellent psychometric properties in many studies such as estimate of the internal consistency reliability of .85 (Taber & Blankemeyer, 2014). In this present study, the total scale for all items demonstrated excellent Cronbach's alpha coefficient, which was .88.

### Identity Status

The Objective Measure of Ego Identity Status (OM-EIS; Adams et al., 1979) is a 24-item self-reported measure assessing Marcia's (1966) four identity statuses in three

domains including religion, politics, and career. Participants provided responses to statements using a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree) to rate how well they have explored and made a commitment in those areas. Each identity status ranging from least advanced to most advanced status – diffusion, foreclosure, moratorium, and achievement – has 6 items and provides continuous scores. Sample items (see Appendix B) included diffusion (e.g., “I’m not really interested in finding the right job, any job will do. I just seem to follow with what is available.”), foreclosure (e.g., “I guess I’m pretty much like my folks when it comes to politics. I follow what they do in terms of voting and such.”), moratorium (e.g., “I just can’t decide what to for an occupation. There are so many possibilities.”), and achievement (e.g., “A person’s faith is unique to each individual. I’ve considered and reconsidered it myself and know what I can believe.”). Following Mackey et al. (2001) and McLean and Pratt (2006), an *identity maturity index* was calculated by subtracting participants’ scores on three less advanced identity status (diffusion, foreclosure, and moratorium) from scores on the most advanced identity status (achievement). The present study demonstrated modest Cronbach’s alphas for four scales ranging from .48 to .71 consistent and comparable with previous studies such as .46 to .70 (Dumas et al., 2009) and .41 to .69 (McLean & Pratt, 2006).

### **Goal Setting**

The Goal-Setting scale (Howard, Ferrari, Nota, Solberg, & Soresi, 2009) is a 19-item instrument measuring the extent to which participants use strategies for actively

selecting and pursuing goals, utilizing resources to attain these goals, and recognizing possible challenges or obstacles that may prevent them from achieving their goals. The Goal-Setting scale was developed based on the Selection, Optimization, and Compensation (SOC) theory (Baltes, 1997). Participants provided responses to statements using a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). There are three subscales and sample items (see Appendix C) included Goal Setting and Pursuit (e.g., “I carefully plan out ways to successfully achieve my goals”), Use of Resources (e.g., “To reach my goals, I actively seek out support and guidance from others.”), and Challenges (e.g., “It is hard for me to get motivated to actively pursue my goals.”). Each subscale demonstrated good internal consistency including Goal Setting and Pursuit ( $\alpha = .93$ ), Use of Resources ( $\alpha = .82$ ), and Challenges ( $\alpha = .76$ ; Howard et al., 2009). For this present study, internal consistency for each subscale was adequate, which was .83, .57, .76 respectively, and the total scale Cronbach’s alpha coefficient for all items was .67. Higher scores demonstrated participants reported having self-perceptions of greater involvement in setting goals, searching for resources, and identifying challenges to attain their goals.

### **Narrative Identity**

Following the procedures of collecting turning point narratives (e.g., McLean & Pratt, 2006; Waters & Fivush, 2014), in the present study participants were instructed to “(1) Please describe an important event or a turning point in your life. Please provide as much as details as you can; (2) Please describe why it is an important event or a turning

point in your life; (3) Please describe how you were feeling and thinking during the event; (4) Please describe how you are feeling and thinking about the event now; (5) Please describe how the event has had an influence on you now; and (6) Please describe what you learned from the event.” Narrative coding procedure was described. All narratives were coded based on two coding systems including narrative coherence and meaning making. Scores on the narrative identity variable were created by combining scores on narrative coherence and meaning-making. The total scale Cronbach’s alpha coefficient for all items of the narrative identity variable was .85.

#### **Narrative coding procedure.**

Coders consisted of seven student research assistants. Four coding pairs of research assistants coded four variables which consisted of three dimensions of narrative coherence (context, chronology, and theme), and meaning-making. One of seven coders was paired up with two separate coders, and coded the narratives for the context and the theme dimension. All coders were blind to the other data and hypotheses of the study while completing the coding. Before coding the narratives, coders attended a series of workshops run by the author, which consisted of two phases – training phase and testing phase. In the five-week training phase, coders learned and had weekly group discussions about theoretical foundations of narrative identity and the coding criteria of narrative coherence and meaning-making. In the testing phase, coders practiced coding ten narrative examples drawn from empirical studies which used these two coding systems. Coders utilized all protocols including context, chronology, theme, and meaning-making

to code ten narrative examples independently. Subsequently, all coders came to discuss about their codes together as a group in which they had opportunities to obtain guidance, consultation, and clarification for all coding protocols. Then, coding pairs were matched based on coders' coding protocol preferences and coding accuracy rated by the author. Each coding pair wrote up a detailed description of their coding protocol, and met with the author to evaluate their readiness for the coding phase.

In the coding phase, each pair of coders for each coding protocol coded five randomly selected narratives as a pilot test independently without guidance and consultation, and then came to discuss the codes with their coding partners triangulated and evaluated by the author. If they had an absolute agreement, they would proceed the next ten narratives. If an exact agreement rate was less than 80%, they would need to obtain additional training by reviewing and refining the coding protocol write-up and practicing coding narrative examples again. For the pilot test of the first five narratives, each pair of coders for all three dimensions of the narrative coherence coding system reached absolute agreement, whereas those of the meaning-making coding system reached 60% exact agreement rate and they subsequently obtained additional training. On a pilot set of the first 25 narratives, reliability levels using intraclass correlation coefficients for all coding protocols (.96 for context, .92 for chronology, .97 for theme, and .87 for meaning-making) were adequate and averaged .93 with 82% exact agreement. Following reliability, each pair of coders independently coded the remaining narratives and came to discuss the codes with their coding partners every 20-25 narratives. Disagreements were resolved by discussions and triangulated by the author. The

finalized codes of all narratives were recorded after the discussions and final agreement. Reliability levels in the pilot test were included in reliability of the full sample for each coding system.

### **Narrative coherence.**

Following the standardized coding scheme (Reese et al., 2011), narrative coherence was coded along three separate dimensions including context, chronology, and theme. Drawing upon a theoretical foundation of the multidimensional lifespan model, Reese and colleagues (2011) posited that scales can best capture independent elements of the narrative. Each dimension was coded along a 4-point rating scale ranging from 0 to 3 (see Appendix D). Summed scores of three dimensions were calculated to create a narrative coherence continuous score which could range from 0 to 9. On a subset of 60 (14.7%) narratives, reliability was analyzed and produced intraclass correlation coefficient for each dimension, which was .96 for context, .90 for chronology, and .80 for theme (Waters & Fivush, 2014). In this present study, reliability was analyzed by using intraclass correlation coefficient (the correlation between two independent raters) for each pair of raters for each dimension. Using a randomly chosen sample of 40 narratives in the data set, this study demonstrated good reliability (81.67% exact agreement rate on average), which was .89, .74, .96 for context, chronology, and theme respectively. The total scale Cronbach's alpha coefficient of the finalized codes for all items was .87.

### **Meaning making.**

According to McLean and Pratt (2004, 2006), the coding system utilized a linear coding in capturing complexity of meaning in participants' autobiographical reasoning. Meaning-making was coded along a 4-point rating scale ranging from 0 to 3 for No Meaning, Lesson, Vague Meaning, and Insight respectively (see Appendix E). On a sample of 28 narratives, reliability was .87 with 86% exact agreement (McLean & Pratt, 2006). In this present study, reliability was analyzed by using intraclass correlation coefficient, and demonstrated good reliability. Using a randomly chosen sample of 40 narratives in the data set, the correlation between two independent raters was .83 (with 72.5% exact agreement rate).

### **Data Analysis**

As a mixed-methods study, the data were transformed in many ways (e.g., Onwuegbuzie & Teddlie, 2003; Tashakkori & Teddlie, 1998). First of all, a *quantitized* method was used to code narrative responses and convert to numerical codes or continuous scores, including context, chronology, theme, and meaning-making, for statistical quantitative analysis (Tashakkori & Teddlie, 1998). Then, a *quantitized* method was used to extract two subsets of the quantitative data and identify the narratives within these two subsets that were later used for qualitative data analysis (Tashakkori & Teddlie, 1998). Finally, both quantitative and qualitative data were consolidated, compared, and integrated (Onwuegbuzie & Teddlie, 2003). Quantitative and qualitative methods were explained below.

## **Quantitative Method**

In this present study, SPSS (version 24.0, 2016) was used for analyzing quantitative data. Descriptive analysis was performed for demographic data such as age, gender, ethnicity, and grade level. To answer research questions, several statistical methods were conducted to examine how mindfulness facilitated the process of identity development and goal-setting in emerging adults. Using Pearson Product Moment Correlation Coefficients, correlations were calculated to examine relationships between mean scores of all variables of interest including mindfulness, identity status, identity maturity index, narrative coherence, meaning-making, narrative identity, and goal-setting. Correlation values closer to a value of 1 or -1 indicated stronger relationships between variables, and positive values indicated positive relationships and vice versa. Drawing upon a theoretical framework, multiple regression analyses were also conducted to examine in what ways and to what extent mindfulness influenced identity development and goal-setting.

Furthermore, a build-in macro PROCESS (Hayes, 2012) for Mac SPSS (version 24.0, 2016) was implemented for mediation analysis. The PROCESS computational program generally relies on ordinary least squares regression and estimates all path coefficients (Hayes, 2013; Hayes, Montoya, & Rockwood, 2017). Some researchers argued that regression analysis used in PROCESS may be vulnerable to bias; however, the extent to which biases play a role in regression analysis depends on the complexity of the model (Hayes, Montoya, & Rockwood, 2017). More importantly, a combination

between measurement and structural model in structural equation modeling is not an absolute solution to every mediation model (Hayes, Montoya, & Rockwood, 2017). PROCESS is thus an alternative, easy-to-use computational tool for the path analysis framework as it can test direct and indirect effects for mediation analysis (Hayes, 2012).

In addition, independent sample t-test and one-factor analysis of variance (ANOVA) were performed to compare mean scores of variables of interest between groups. These methods of quantitative data analysis together with regression analysis helped determine correlations and causal relationships among variables within the high identity maturity group and the low identity maturity group which were a categorical variable of interest. Through the dichotomization statistical procedure, scores on identity maturity index were categorized into and represent the high identity maturity group and the low identity maturity group, using a median split as a cutoff point of the identity maturity index continuous variable (median = -24; Cohen, 1983).

Some researchers (e.g., Cohen, 1983; MacCallum et al., 2002) argued that a dichotomized variable, compared to an original continuous variable, may have less analytic power because participants scoring near the maximum and near the cutoff value were categorized into the same group. However, dichotomization of the identity maturity index continuous variable was appropriate in this present study for many reasons. First of all, an identity status variable appeared to have low reliability; therefore, dichotomization of this continuous variable was justified as it may reduce variability within each high identity maturity and low identity maturity group (DeCoster, Iselin, &

Gallucci, 2009). In addition, dichotomization fits the theoretical framework of this study (DeCoster, Iselin, & Gallucci, 2009).

### **Qualitative Method**

Using extreme group analysis, scores on identity maturity index were categorized into the extremely high identity maturity group and the extremely low identity maturity group, and moderate scores were excluded. Through a quartile split, the extremely high identity maturity group represented all narratives scoring above the third quartile (-15), and the extremely low identity maturity group represented all narratives scoring below the first quartile (-34). The narratives of these two groups ( $n = 33$  for the extremely high identity maturity group and  $n = 32$  for the extremely low identity maturity group) were analyzed using a grounded-theory qualitative research method.

Drawing upon the grounded-theory coding procedures (e.g., Glaser, 1992; Strauss & Corbin, 1990, 1998), the qualitative data analysis procedure involved a three-step process. First of all, open coding was used to identify initial and salient aspects of narratives to achieve a broad overview and basic themes of the findings based on research questions (Strauss & Corbin, 1990, 1998). During this process, a research assistant and the author independently coded the narratives and later came to discuss the coding results together. The research assistant was blind to open-ended questions of the survey, theoretical framework, hypotheses, and the other data of the study while completing the coding. An initial triangulation for open coding showed an agreement of two coders (approximately 80%).

Second, axial coding was utilized to see connections among open codes and identify categories that seemed to best describe relationships among narratives, and use other categories to provide support for or against the categories (Strauss & Corbin, 1990, 1998). During the initial triangulation for open coding, for example, two coders recognized they each used different words to code the same statements of the narratives. After discussions, the coders agreed that they had similar interpretations of such statements despite using different words as open codes. For example, one coder used an open code, “growing as a person,” whereas the other coder used an open code, “self-improvement” to code a statement, *“This event was important because it really allowed me to see how strong I really was... I was able to learn more about myself and now I can see that was growing as a person... This event influenced me because now I always try to help others.”* Later, the coders agreed that “growing as a person” was used because it appeared to best describe relationships among narratives of the same category based not only on its definition representing such narratives but also on the theoretical framework of narrative identity in this dissertation study.

Finally, selective coding (thematic domains and sub-categories) was also created and used to explain relationships among categories and sub-categories, as well as identify patterned relationships in order to integrate interpretations and concepts to form or verify a theory (Strauss & Corbin, 1990, 1998). Causal conditions and constant comparisons were used to compare narratives to narratives, narratives to categories, sub-categories to sub-categories, sub-categories to categories, and categories to categories (Strauss & Corbin, 1990, 1998). Coding scheme and preliminary analyses were repeatedly

reevaluated in order not to make premature judgments. Alternative explanations were used to challenge initial interpretations and refine final interpretations. Analytical conclusions and core concepts were verified and triangulated by comparing interpretations between the research assistant and the author.

Overall, the data collection and the data analysis of the mixed-methods research design was appropriate for addressing research questions, capturing associations, and synthesizing the quantitative and the qualitative findings of this dissertation study. All descriptive steps of the mixed-methods analytic process were explained as aforementioned and the results were further described in the next chapter.

## **CHAPTER FOUR:**

### **RESULTS**

The objective of this mixed-methods research study was to examine the role of mindfulness in the process of identity development and goal-setting in emerging adults. Data collection and data analysis were conducted to answer three main research questions – 1) What were relationships between mindfulness, goal-setting, and identity-related variables from two different identity approaches – the identity status model and narrative identity? 2) What were relationships between the identity status model and narrative identity, and what were similarities and differences in emerging adults’ narratives between the extremely high identity maturity group and the extremely low identity maturity group? 3) What was the role of mindfulness in identity development and goal-setting? In this chapter, the findings were presented and organized into two main sections – quantitative and qualitative results as follows.

#### **Quantitative Results**

##### **Correlational Results**

Using Pearson Product Moment Correlation Coefficients, correlational analysis was calculated to answer the research question - What were relationships between mindfulness, goal-setting, and identity-related variables. This analysis was aimed at examining strengths and directions of relationships among these variables of interest (see Table 5).

Table 5

*Means, Standard Deviations, and Correlations Among Variables*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. MN <sup>a</sup>	56.88	11.68	-												
2. DF <sup>a</sup>	15.95	4.71	-.34***	-											
3. FC <sup>a</sup>	13.96	4.92	-.18*	.28***	-										
4. MR <sup>a</sup>	18.08	5.40	-.33**	.46***	.32***	-									
5. AC <sup>a</sup>	23.44	4.43	.01	-.33***	-.03	-.10	-								
6. IM <sup>a</sup>	-24.55	12.96	.33***	-.77***	-.63***	-.74***	.51***	-							
7. MM <sup>b</sup>	2.03	.97	.01	-.21*	-.18*	-.13	.13	.25**	-						
8. NC <sup>b</sup>	6.45	2.24	.13	-.26**	-.18*	-.01	.10	.21*	.54***	-					
9. NI <sup>b</sup>	8.49	2.88	.11	-.27**	-.20*	-.05	.12	.24**	.76***	.96***	-				
10. G <sup>a</sup>	36.50	6.12	.10	-.26**	.05	-.23**	.31***	.28***	.12	-.05	.00	-			
11. UR <sup>a</sup>	17.81	2.90	.11	-.09	.072	-.16	.14	.12	.03	.05	.05	.47***	-		
12. CL <sup>a</sup>	11.56	3.67	.43***	-.32***	-.20*	-.58***	.14	.48***	.08	.02	.04	.36***	.26**	-	
13. GS <sup>a</sup>	65.87	9.88	.26**	-.31***	-.02	-.41***	.29***	.39***	.11	-.01	.03	.89***	.68***	.67***	-

*Note.* MN = Mindfulness; DF = Diffusion; FC = Foreclosure; MR = Moratorium; AC = Achieve; IM = Identity Maturity; MM = Meaning-Making; NC = Narrative Coherence; NI = Narrative Identity; G = Goal; UR = Use of Resource; CL = Challenge; GS = Goal-Setting.

<sup>a</sup> *n* = 130. <sup>b</sup> *n* = 119.

\**p* < .05, two-tailed. \*\**p* < .01, two-tailed. \*\*\**p* < .001, two-tailed.

At the  $p < .05$ ,  $< .01$ , and  $< .001$  levels, the results indicated Mindfulness had significantly positive associations with Challenges ( $r = .43$ ) and Goal-Setting ( $r = .26$ ), as well as significantly negative associations with Diffusion ( $r = -.34$ ) and Moratorium ( $r = -.33$ ). Goal-Setting was significantly positively correlated with Achieve ( $r = .29$ ), and significantly negatively correlated with Diffusion ( $r = -.31$ ) and Moratorium ( $r = -.41$ ). Particularly, Challenge which was a subscale of the Goal-Setting measure had significantly negative relationships with Diffusion ( $r = -.32$ ) and Moratorium ( $r = -.58$ ). Narrative Identity was significantly positively associated with Narrative Coherence ( $r = .96$ ) and Meaning-Making ( $r = .76$ ), as well as significantly negatively associated with Diffusion ( $r = -.27$ ) and Foreclosure ( $r = -.20$ ). Within identity statuses, Diffusion was significantly positively correlated with Foreclosure ( $r = .28$ ) and Moratorium ( $r = .46$ ), as well as significantly negatively correlated with Achieve ( $r = -.33$ ). Identity Maturity Index was significantly positively associated with Mindfulness ( $r = .33$ ), Achieve ( $r = .51$ ), Challenge ( $r = .48$ ), Goal-Setting ( $r = .39$ ), Meaning-Making ( $r = .25$ ), Narrative Coherence ( $r = .21$ ), and Narrative Identity ( $r = .24$ ), as well as significantly negatively associated with Diffusion ( $r = -.77$ ), Foreclosure ( $r = -.63$ ), and Moratorium ( $r = -.74$ ). The results indicated participants with less advanced identity statuses such as Diffusion were less likely to engage in mindfulness, recognize possible challenges, achieve goals, and develop narrative identity. In contrast, participants with greater identity maturity index were more likely to engage in mindfulness, recognize possible challenges, achieve goals, and develop narrative identity. Participants with higher levels of mindfulness were also more likely to recognize possible challenges and find ways to achieve their goals.

## Regression Results

To examine if participants' level of goal-setting is a function of three variables including mindfulness, identity maturity index and narrative identity, a hierarchical multiple regression analysis was calculated to predict goal-setting based on these three variables. Tests for multicollinearity indicated that a very low level of multicollinearity was presented (VIF = 1.101 for mindfulness, 1.157 for identity maturity index, and 1.064 for narrative identity). According to the conceptual framework, mindfulness was the first variable entered, followed by identity maturity index and then narrative identity.

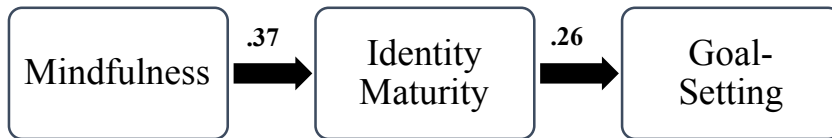
Results of the regression analysis provided partial confirmation for the research hypothesis (see Table 6). Beta coefficient for the three predictors were mindfulness ( $\beta = .159, t(3, 115) = 1.797, p = .075$ ), identity maturity index ( $\beta = .366, t(3, 115) = 4.039, p < .001$ ), and narrative identity ( $\beta = -.076, t(3, 115) = -.870, p = .386$ ). The best fitting model for predicting goal-setting was a linear combination of mindfulness and identity maturity index; indicating a significant regression equation ( $F(2, 116) = 12.612, p < .001$ ), with an  $R^2$  of .179. The results revealed that the set of variables – mindfulness ( $\beta = .156, t(2, 116) = 1.769, p = .08$ ) and identity maturity index ( $\beta = .348, t(2, 116) = 3.949, p < .001$ ) included in the model explained 17.9% of the variability in goal-setting. The slope indicated that participants reported greater goal-setting, on average, as they had higher levels of mindfulness and more advanced identity maturity, controlling for the other variables in the model. Addition of the narrative identity variable did not significantly improve prediction ( $R^2$  change = .005,  $F$  change = .757,  $p = .386$ ).

Table 6

*Regression Analyses Predicting Goal-Setting from Mindfulness, Identity Maturity, and Narrative Identity*

Model	IV	$\beta$	$t$	$p$	VIF	$F$	$p (F)$	$\Delta F$	$p (\Delta F)$	$R^2$	Adj. $R^2$	$\Delta R^2$
1	MN	.261	2.927	<.01**	1.000	8.566	.004**	8.566	.004	.068	.060	.068
2	MN	.156	1.769	.080	1.100	12.612	<.001***	15.591	<.001***	.179	.164	.110
	IM	.348	3.949	<.001***	1.100							
3	MN	.159	1.797	.075	1.101	8.643	<.001***	.757	.386	.184	.163	.005
	IM	.366	4.039	<.001***	1.157							
	NI	-.076	-.870	.386	1.064							

*Note.* IV = Independent Variable;  $\beta$  = standardized beta coefficient;  $t$  = t-test statistic;  $p$  = significant value; VIF = Variance Inflation Factor;  $F$  = f-test statistic;  $R^2$  = R squared; MN = Mindfulness; IM = Identity Maturity; NI = Narrative Identity.  
 \* $p$  = <.05. \*\* $p$  = <.01. \*\*\* $p$  = <.001.



*Figure 1.* Mediation model.

Table 7

*Total and Direct Effects' Standardized Coefficients, SE, p-Value, and R<sup>2</sup> (N = 130)*

Path	$\beta$	SE	p	R <sup>2</sup>
Mindfulness → Goal-Setting	.2167	.0728	.004**	.0657 F(1, 128) = 8.8556 p = .004**
Mindfulness → Identity Maturity	.3690	.0945	<.001***	.1106 F(1, 128) = 15.2463 p = <.001***
Mindfulness and Identity Maturity predicted Goal- Setting				
Mindfulness	.1217	.0727	.097	.1672 F(2, 127) = 7.9538 p = <.001***
Identity Maturity	.2576	.0812	.002**	

*Note.*  $\beta$  = standardized beta coefficient; SE = standard error; p = significant value; R<sup>2</sup> = R squared.

\*p = <.05. \*\*p = <.01. \*\*\*p = <.001.

Table 8

*Total Indirect Effect's Standardized Coefficients, Standard Error, and 95% Bias-Corrected CI (N = 130)*

Path	Indirect Effect Coefficient	Boot SE	Boot LL 95% CI	Boot UL 95% CI
Mindfulness → Identity Maturity → Goal-Setting	.0950	.0355	.0415	.1851

## Mediation Results

It was hypothesized that mindfulness had a direct effect on identity maturity index and had an indirect effect on goal-setting. To examine the mediating role of identity maturity index in the relationship between mindfulness and goal-setting, mediation analysis was performed. The mediation model was also shown in Figure 1.

A build-in macro PROCESS (Hayes, 2013) for Mac SPSS (version 24.0, 2016) was used to conduct the mediation analysis. In the first step of the mediation model (see Table 7), the mindfulness was regressed on goal-setting and found to be significant ( $\beta = .2167, t(128) = 2.9758, p = .0035$ ). The second step revealed that the regression of mindfulness on identity maturity index was also significant ( $\beta = .3690, t(128) = 3.9047, p = .0002$ ). The third step of the mediation process showed that the effect of identity maturity index on goal-setting, controlling for mindfulness, was significant ( $\beta = .2576, t(127) = 3.1730, p = .0019$ ). The final step of the analysis showed that, controlling for identity maturity index, mindfulness did not significantly affect goal-setting ( $\beta = .1217, t(128) = 1.6732, p = .0967$ ). The total indirect effect was statistically significant (total indirect = .0950; boot 95% CI LL = .0415, boot 95% CI UL = .1851; see Table 8). A Sobel test was also performed and found a full mediation in the model ( $z = 2.4152, p = .0157$ ). The effect size was .0950, with a 95% confidence interval which did not include zero; indicating the effect was significantly greater than zero at  $\alpha = .05$ . The results indicated that identity maturity index fully mediated the relationship between

mindfulness and goal-setting. In other words, mindfulness significantly affected identity maturity, which in turn significantly affected goal-setting.

### Differences between Four Identity Status Groups

One-way Analysis of Variance (ANOVA) was computed to examine mean differences in variables of interest among four categorical identity status groups. For this type of data analysis, the identity status variable was categorized into four identity statuses using one standard deviation above the mean as cutoff scores (Adams, 1998).

Table 9

*ANOVA, Means, and Standard Deviations between Four Categorical Identity Status Groups for Some Scales and Subscales*

Scale	Identity Status				<i>F</i>	<i>p</i>
	DF ( <i>n</i> = 32)	FC ( <i>n</i> = 11)	MR ( <i>n</i> = 77)	AC ( <i>n</i> = 10)		
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>		
MN	52.50 (12.63)	54.36 (9.73)	57.77 (10.90)	66.90 (10.19)	4.630	.004**
CL	9.88 (2.76)	10.55 (3.11)	11.95 (3.81)	15.10 (2.60)	6.717	<.001***
GS	60.84 (10.77)	67.55 (10.24)	66.71 (8.58)	73.60 (9.77)	5.646	<.001***
	DF ( <i>n</i> = 29)	FC ( <i>n</i> = 11)	MR ( <i>n</i> = 70)	AC ( <i>n</i> = 9)		
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>F</i>	<i>p</i>
NC	5.38 (2.50)	6.18 (2.90)	6.80 (1.98)	7.56 (1.01)	3.821	.012*
NI	7.10 (3.27)	8.27 (3.52)	8.93 (2.55)	9.78 (1.64)	3.634	.015*

*Note.* *F* = f-test statistic; *p* = significant value; DF = Diffusion; FC = Foreclosure; MR = Moratorium; AC = Achieve; MN = Mindfulness; CL = Challenge; GS = Goal-Setting; NC = Narrative Coherence; NI = Narrative Identity.

\**p* = <.05. \*\**p* = <.01. \*\*\**p* = <.001.

Table 10

*Mean Differences, SE, and p-Value between Four Categorical Identity Status Groups for Some Scales and Subscales*

Scale	Identity Status	Identity Status	Mean Difference	SE	p
MN	DF	FC	-1.864	3.921	.973
		MR	-5.266	2.360	.179
		AC	-14.400	4.064	.007**
CL	DF	FC	-.670	1.204	.958
		MR	-2.073	.724	.047*
		AC	-5.225	1.248	<.001***
	FC	DF	.670	1.204	.958
		MR	-1.403	1.110	.661
		AC	-4.555	1.505	.031*
GS	DF	FC	-6.702	3.280	.248
		MR	-5.871	1.974	.035*
		AC	-12.756	3.400	.004**
NC	DF	FC	-.803	.766	.778
		MR	-1.421	.478	.036*
		AC	-2.176	.825	.079
NI	DF	FC	-1.169	.987	.705
		MR	-1.825	.615	.037*
		AC	-2.674	1.063	.103

*Note.* SE = standard error; p = significant value; DF = Diffusion; FC = Foreclosure; MR = Moratorium; AC = Achieve; MN = Mindfulness; CL = Challenge; GS = Goal-Setting; NC = Narrative Coherence; NI = Narrative Identity.

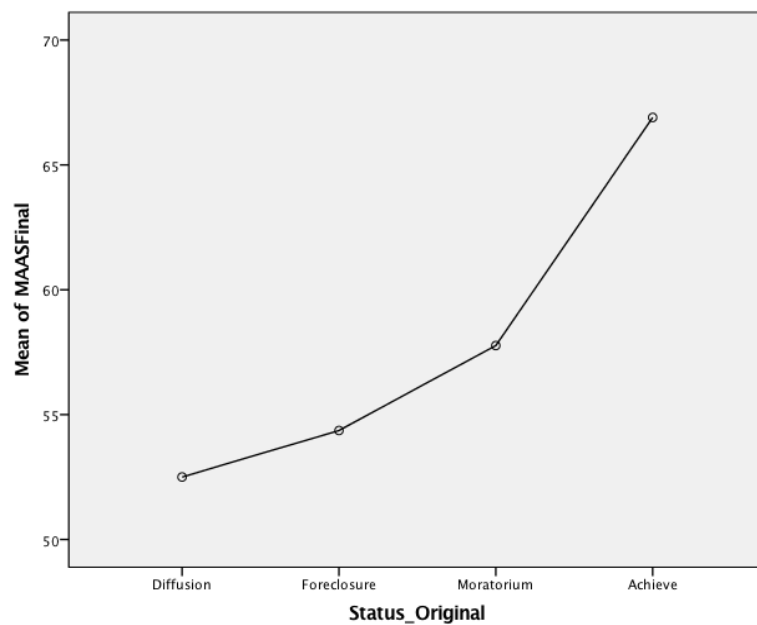
\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Post-hoc comparisons were conducted using the Scheffe test because of the different number of participants per group (see Table 9 and Table 10). Among four categorical identity status groups, there were statistically significant differences in means of Mindfulness ( $F(3, 126) = 4.630, p = .004$ ), Challenge ( $F(3, 126) = 6.717, p < .001$ ), Goal-Setting ( $F(3, 126) = 5.646, p = .001$ ), Narrative Coherence ( $F(3, 115) = 3.821, p = .012$ ), and Narrative Identity ( $F(3, 115) = 3.634, p = .015$ ).

Results indicated significant differences for Mindfulness (see Figure 2) such that individuals classified in the Achieve group reported higher mindfulness ratings than individuals classified in the Diffusion group ( $66.90 \pm 10.19$  vs.  $52.50 \pm 12.63, p = .007$ ). Regarding Challenge, individuals classified in the Achieve group ( $15.10 \pm 2.60$  vs.  $9.88 \pm 2.76, p = .001$ ) and the Moratorium group ( $11.95 \pm 3.81$  vs.  $9.88 \pm 2.76, p = .047$ ) reported significantly higher challenge ratings than individuals classified in the Diffusion group. Also, individuals classified in the Achieve group reported higher challenge ratings than individuals classified in the Foreclosure group ( $15.10 \pm 2.60$  vs.  $10.55 \pm 3.11, p = .031$ ). For Goal-Setting (see Figure 3), the Achieve group ( $73.60 \pm 9.77$  vs.  $60.84 \pm 10.77, p = .004$ ) and the Moratorium group ( $66.71 \pm 8.58$  vs.  $60.84 \pm 10.77, p = .035$ ) reported higher goal setting ratings than the Diffusion group. For Narrative Coherence, the Moratorium group reported higher ratings than the Diffusion group ( $6.80 \pm 1.98$  vs.  $5.38 \pm 2.50, p = .036$ ). For Narrative Identity (see Figure 4), the Moratorium group also reported higher ratings than the Diffusion group ( $8.93 \pm 2.55$  vs.  $7.10 \pm 3.27, p = .037$ ).

### Differences between Low and High Identity Maturity Groups

Scores on identity maturity index were categorized into the high identity maturity group and the low identity maturity group by using a median split as a cutoff point of the identity maturity index continuous variable (median = -24; Cohen, 1983). An independent samples t-test analysis was performed to test and compare differences in means of variables between these two group.



*Figure 2.* Mean differences in mindfulness among four identity status groups.

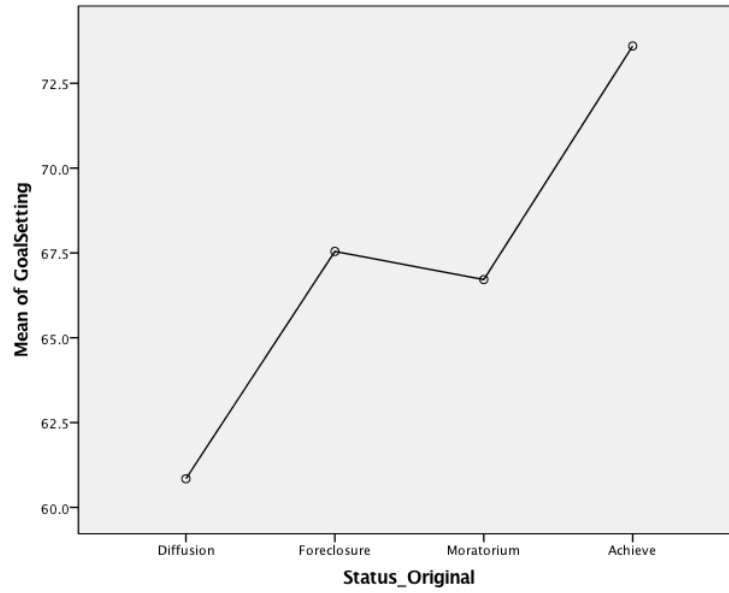


Figure 3. Mean differences in goal-setting among four identity status groups.

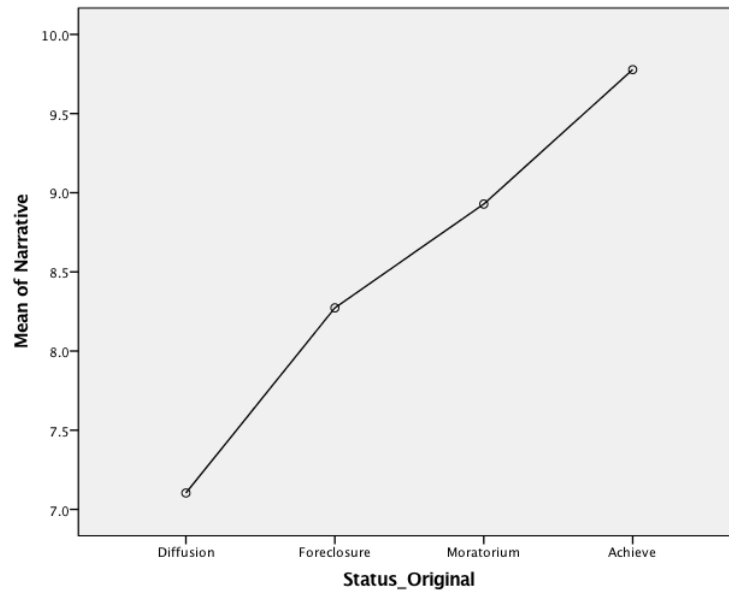


Figure 4. Mean differences in narrative identity among four identity status groups.

Table 11

*Means, Standard Deviations, t-Value, and p-Value of Variables between Two Identity Maturity Groups*

Variable	Group	<i>M</i>	<i>SD</i>	<i>t</i> -value	<i>p</i> -value
Mindfulness	LIMG <sup>a</sup>	54.81	11.43	<i>t</i> (128) = -1.958	<.05*
	HIMG <sup>b</sup>	58.78	11.67		
Diffusion	LIMG <sup>a</sup>	19.11	4.08	<i>t</i> (128) = 9.551	<.001***
	HIMG <sup>b</sup>	13.06	3.12		
Foreclosure	LIMG <sup>a</sup>	16.32	4.93	<i>t</i> (128) = 5.859	<.001***
	HIMG <sup>b</sup>	11.81	3.83		
Moratorium	LIMG <sup>a</sup>	21.61	3.91	<i>t</i> (128) = 9.093	<.001***
	HIMG <sup>b</sup>	14.87	4.49		
Achieve	LIMG <sup>a</sup>	21.56	3.72	<i>t</i> (128) = -5.02	<.001***
	HIMG <sup>b</sup>	25.15	4.35		
Goal	LIMG <sup>a</sup>	34.97	6.53	<i>t</i> (128) = -2.798	<.01**
	HIMG <sup>b</sup>	37.90	5.39		
Use of Resource	LIMG <sup>a</sup>	17.39	2.73	<i>t</i> (128) = -1.586	.12
	HIMG <sup>b</sup>	18.19	3.02		
Challenge	LIMG <sup>a</sup>	10.11	3.07	<i>t</i> (128) = -4.63	<.001***
	HIMG <sup>b</sup>	12.88	3.69		
Goal-Setting	LIMG <sup>a</sup>	62.47	9.90	<i>t</i> (128) = -3.956	<.001***
	HIMG <sup>b</sup>	68.97	8.84		
MM	LIMG <sup>c</sup>	1.86	.99	<i>t</i> (117) = -1.907	.06
	HIMG <sup>a</sup>	2.19	.92		
NC	LIMG <sup>c</sup>	6.05	2.44	<i>t</i> (117) = -1.895	.06
	HIMG <sup>a</sup>	6.82	1.99		

Variable	Group	<i>M</i>	<i>SD</i>	<i>t</i> -value	<i>p</i> -value
NI	LIMG <sup>c</sup>	7.91	3.12	<i>t</i> (117) = -2.121	.04*
	HIMG <sup>a</sup>	9.02	2.55		

*Note.* *t* = *t*-test statistic; *p* = significant value; LIMG = Low Identity Maturity Group; HIMG = High Identity Maturity Group; MM = Meaning-Making; NC = Narrative Coherence; NI = Narrative Identity.

<sup>a</sup> *n* = 62. <sup>b</sup> *n* = 68. <sup>c</sup> *n* = 57.

\**p* = <.05. \*\**p* = <.01. \*\*\**p* = <.001.

The results (see Table 11) indicated that, except Use of Resources, Meaning-Making, and Narrative Coherence, there were significant differences between the low identity maturity group and the high identity maturity group in most variables such as Mindfulness ( $54.81 \pm 11.43$  vs.  $58.78 \pm 11.67$ ,  $t(128) = -1.958$ ,  $p = .05$ ) and Goal-Setting ( $62.47 \pm 9.90$  vs.  $68.97 \pm 8.84$ ,  $t(128) = -3.956$ ,  $p = <.001$ ). Specifically, the results suggested that participants classified as high identity maturity, reported higher ratings for engaging in mindfulness and goal-setting. Cohen's *d* was also calculated and estimated to determine the effect size. The magnitude of the differences in the means was moderate for Mindfulness (Cohen's  $d = .34$ ) and large for Goal-Setting (Cohen's  $d = .66$ ).

Table 12

*Correlations among Variables in the Low Identity Maturity Group and the High Identity Maturity Group*

Variable	HIMG											
	1 <sup>c</sup>	2 <sup>c</sup>	3 <sup>c</sup>	4 <sup>c</sup>	5 <sup>c</sup>	6 <sup>a</sup>	7 <sup>a</sup>	8 <sup>a</sup>	9 <sup>c</sup>	10 <sup>c</sup>	11 <sup>c</sup>	12 <sup>c</sup>
LIMG												
1. MN <sup>a</sup>	-	-.38**	-.06	-.34**	.07	-.17	.11	.03	.16	.10	.51***	.35**
2. DF <sup>a</sup>	-.24	-	-.23	.08	-.18	.06	-.02	.01	-.16	.01	-.13	-.15
3. FC <sup>a</sup>	-.17	.10	-	.03	.14	-.05	.04	.02	.22	.03	-.04	.13
4. MR <sup>a</sup>	-.23	.10	.06	-	.22	.09	.22	.20	-.09	-.07	-.53***	-.30*
5. AC <sup>a</sup>	-.25	-.02	.25	.22	-	.10	.17	.17	.13	-.03	-.06	.05
6. MM <sup>b</sup>	.14	-.29*	-.18	-.17	.02	-	.47***	.73***	-.03	-.17	-.17	-.15
7. NC <sup>b</sup>	.11	-.32*	-.24	.03	-.10	.58***	-	.95***	-.13	-.03	-.19	-.17
8. NI <sup>b</sup>	.13	-.34**	-.24	-.03	-.07	.77***	.97***	-	-.11	-.09	-.21	-.19
9. G <sup>a</sup>	-.03	-.12	.16	-.13	.37**	.18	-.07	-.00	-	.33**	.28*	.84***
10. UR <sup>a</sup>	.09	-.01	.28*	-.14	.26*	.18	.07	.11	.58***	-	.19	.62***
11. CL <sup>a</sup>	.25	-.10	-.02	-.39**	.04	.22	.09	.14	.33**	.28*	-	.65***
12. GS <sup>a</sup>	.09	-.11	.18	-.24	.33**	.23	.00	.08	.92***	.74***	.61***	-

*Note.* LIMG = Low Identity Maturity Group; HIMG = High Identity Maturity Group; MN = Mindfulness; DF = Diffusion; FC = Foreclosure; MR = Moratorium; AC = Achieve; MM = Meaning-Making; NC = Narrative Coherence; NI = Narrative Identity; G = Goal; UR = Use of Resource; CL = Challenge; GS = Goal-Setting.

<sup>a</sup> *n* = 62. <sup>b</sup> *n* = 57. <sup>c</sup> *n* = 68.

\**p* < .05, two-tailed. \*\**p* < .01, two-tailed. \*\*\**p* < .001, two-tailed.

Correlational analysis was calculated to examine relationships between variables of interest within each identity maturity group (see Table 12). At the  $p < .05$ ,  $< .01$ , and  $< .001$  levels, the results in the high identity maturity group showed that Mindfulness had significantly positive associations with Challenges ( $r = .51$ ) and Goal-Setting ( $r = .35$ ), as well as significantly negative associations with Diffusion ( $r = -.38$ ) and Moratorium ( $r = -.34$ ), which was consistent with the total group. Moratorium had significantly negative associations with Goal-Setting ( $r = -.30$ ) and Challenge ( $r = -.53$ ). Narrative Identity was significantly positively associated with Narrative Coherence ( $r = .95$ ) and Meaning-Making ( $r = .73$ ), but not as significantly associated with Diffusion and Foreclosure as in the total group. In the high identity maturity group, it was apparent that Diffusion and Narrative Identity were not significantly associated with other variables, as well as no significant associations between Diffusion, Foreclosure, Moratorium, and Achieve within identity statuses were found. The results indicated that participants with less advanced identity statuses particularly Moratorium were less likely to have mindfulness, recognize possible challenges, and achieve goals. Participants with higher levels of mindfulness were more likely to recognize possible challenges and achieve goals.

In the low identity maturity group, on the contrary, the results showed no significant associations between Mindfulness and other variables. Achieve had significantly positive associations with Goal-Setting ( $r = .33$ ), whereas Moratorium had significantly negative associations with Challenge ( $r = -.39$ ). Particularly in contrast with the high identity maturity group, Diffusion was significantly negatively correlated with Narrative Coherence ( $r = -.32$ ), Meaning-Making ( $r = -.29$ ), and Narrative Identity ( $r = -$

.34). Similar to the high identity maturity group, no significant associations between Diffusion, Foreclosure, Moratorium, and Achieve within identity statuses were found. The results indicated that participants with the Achieve status were more likely to achieve goals, whereas participants with the Moratorium status were less likely to recognize possible challenges in achieving goals. Also, participants with the Diffusion status had lower levels of narrative coherence, meaning-making, and narrative identity.

Table 13

*Regression Analyses Predicting Goal-Setting from Mindfulness in Each Identity Maturity Group*

Group	Predictor	$\beta$	$t$	$p$	$F$	$p(F)$	$R^2$	Adj. $R^2$
LIMG <sup>a</sup>	MN	.085	.662	.511	.438	.511	.007	-.009
HIMG <sup>b</sup>	MN	.346	10.227	<.001**	8.951	.004	.119	.106

*Note.*  $\beta$  = standardized beta coefficient;  $t$  = t-test statistic;  $p$  = significant value;  $F$  = f-test statistic,  $R^2$  = R squared; LIMG = Low Identity Maturity Group; HIMG = High Identity Maturity Group; MN = Mindfulness.

<sup>a</sup>  $n = 62$ . <sup>b</sup>  $n = 68$ .

\* $p = <.05$ . \*\* $p = <.001$ .

Linear regression analysis was performed to examine the effect of mindfulness on goal-setting in the low identity maturity group and in the high identity maturity group (see Table 13). In the low identity maturity group, mindfulness was not significantly associated with goal-setting ( $\beta = .085$ ,  $t(1, 60) = .662$ ,  $p = .511$ ), with an  $R^2$  of .007. In the high identity maturity group, on the contrary, mindfulness accounted for 12% of the variance in goal-setting ratings ( $\beta = .346$ ,  $t(1, 66) = 10.227$ ,  $p = <.001$ ). The results

indicated that participants in the high identity maturity group and with greater mindfulness tended to be more engaged in goal-setting.

### **Associations between Identity Maturity Groups and Narrative Identity**

As aforementioned, continuous scores on identity maturity index were categorized into the high identity maturity group and the low identity maturity group by using a median split as a cutoff point. In addition, continuous scores on identity maturity index were categorized into the extremely high identity maturity group and the extremely low identity maturity group by using a quartile split. The chi-square test of independence was an appropriate statistical procedure to test associations between these categorical variables and compare the frequency of narrative coherence (context, chronology, and theme) and meaning-making in the low identity maturity group and the high identity maturity group as well as in the extremely low identity maturity group and the extremely high identity maturity group.

Table 14

*Chi-Square Test and Frequency of Context, Chronology, Theme, and Meaning-Making in Four Identity Maturity Groups*

Variable	LIMG (n)	HIMG (n)	$\chi^2$	df	p	ELIMG (n)	EHIMG (n)	$\chi^2$	df	p
Context	57	62	3.461	3	.326	28	30	3.906	3	.272
0	3	1				2	1			
1	15	10				9	4			
2	12	17				5	9			
3	27	34				12	16			

Variable	LIMG (n)	HIMG (n)	$\chi^2$	df	p	ELIMG (n)	EHIMG (n)	$\chi^2$	df	p
Chronology	57	62	6.253	3	.100	28	30	5.792	3	.122
0	3	2				2	1			
1	17	8				9	3			
2	20	32				9	17			
3	17	20				8	9			
Theme	57	62	5.046	3	.168	28	30	3.613	3	.306
0	2	1				2	1			
1	12	5				6	2			
2	24	28				12	14			
3	19	28				8	13			
Meaning- Making	57	62	6.737	3	.081	28	30	8.395	3	.039*
No meaning	5	1				4	1			
Lesson	17	18				9	7			
Vague Meaning	16	11				9	5			
Insight	19	32				6	17			

Note.  $\chi^2$  = Pearson Chi-Square; df = degree of freedom; p = significant value; LIMG = Low Identity Maturity Group; HIMG = High Identity Maturity Group; ELIMG = Extremely Low Identity Maturity Group; EHIMG = Extremely High Identity Maturity Group.

\*p < .05.

Null hypothesis was no differences in scores on narrative coherence (context, chronology, and theme) and meaning-making between the low identity maturity group and the high identity maturity group, as well as between the extremely low identity maturity group and the extremely high identity maturity group. The results (see Table 14) showed that since  $p < .05$ , narratives in the extremely high identity maturity group had

significantly higher scores on meaning-making than those in the extremely low identity maturity group ( $\chi^2(3, n = 58) = 8.395, p = .039$ ). Particularly, the frequency of Insight, which was the most sophisticated form of meaning-making, in the extremely high identity maturity group was more than those in the extremely low identity maturity group.

### **Qualitative Results**

Using a quartile split, continuous scores on identity maturity index were categorized into the extremely low identity maturity group and the extremely high identity maturity group. The extremely low identity maturity group represented all narratives scoring below the first quartile ( $-34; n = 32$ ), and the extremely high identity maturity group represented all narratives scoring above the third quartile ( $-15; n = 33$ ). The narratives were analyzed using a grounded-theory qualitative research method. Through a thematic approach, the findings were organized based on multiple themes and sub-categories emerging from participant narratives. The results (see Figure 5 and Figure 6) showed that both extremely low identity maturity group and extremely high identity maturity group had similarities in main themes (e.g., life lessons and insight, exploration and commitment, and emotional experiences) and differences in sub-categories.

#### **Extremely Low Identity Maturity Group**

##### **Life lessons and insight.**

The first emerging theme was Life Lessons and Insight which represented what participants learned from their turning point experiences or significant events in life. The

Life Lesson and Insight theme included three sub-categories – Eye-Opening Experience, Self-Acceptance, and Living in the Present Moment. First of all, three narratives demonstrated eye-opening experiences and consistently used a word, “bubble” to represent their own world. For example, a participant (no. 119)’s narrative showed, *“That sometimes when you’ve been in your “bubble” for too long, you don’t realize a lot of things until you become conscious of it.”*

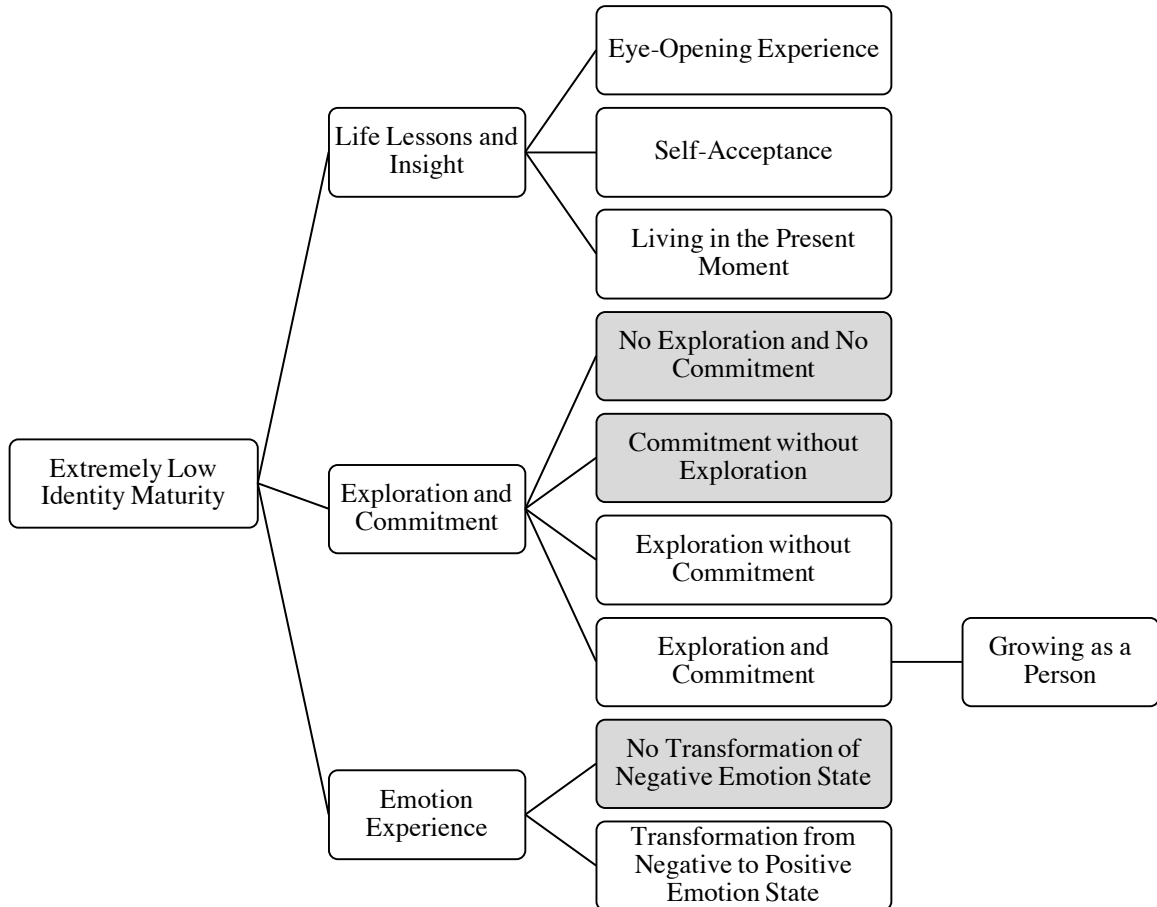


Figure 5. Categories and sub-categories of the extremely low identity maturity group.

Second, Self-Acceptance represented the way participants learned to accept the reality when things did not go their ways. For instance, a narrative (no. 123) showed, “*I guess an important turning point in my life would be when I was rejected from my top choice college. I wanted to be a Musical Theatre major and my first choice was the Boston Conservatory. Being rejected from there set off a lot of events that made me question myself and my family. I accept it, but I think the after effects are still here and continuing to bother me.*” This narrative (no. 123) appeared to accept the situation without taking an effort or action to resolve it. However, another participant (no. 99) showed more active adaptation to a changing situation in the narrative by stating, “*I was initially pretty upset about getting waitlisted, however as soon as I came to terms with going to my second choice I quickly adjusted and was thrilled to know how great of a school it was.*”

The third sub-category was Living in the Present Moment. Three narratives reflected languages around being in the present moment such as a narrative (no. 7) indicating “*growing more aware of my surroundings*” and a narrative (no. 29) indicating “*truly being present in every moment.*” Another participant (no. 114) said, “*I learned the importance of spontaneity, to live in the moment, to take every opportunity, how to fulfill my desires, I learned important interpersonal and communication, I learned new professional skills, and how to truly be independent.*”

### **Exploration and commitment.**

Another common theme emerging from the narratives in the extremely low identity maturity group was Exploration and Commitment which represented to what extent and how participants engaged in exploring options and making a commitment to taking an action to achieve their goals. This main domain consisted of four sub-categories – No Exploration and No Commitment, Commitment without Exploration, Exploration without Commitment, and Exploration and Commitment. First of all, a participant (no. 31) described experiences indicating no exploration and no commitment. The narrative (no. 31) showed languages around having self-doubt and lack of self-directed goals by stating the following:

*“It destroyed me that I would have to go home and see all those science teachers again and have to let them know that I could not do it. I felt weak, like I wasn't strong enough. Now, I feel like I am floundering, not able to find where I truly want to go and no really set path to get there. It feels like there is not enough time to find out what I want to do and where I need to go... Every time someone asks me “oh what are you studying” and I have to tell them I don't know, I hide it with a smile. On the inside, I'm in full panic mode. I do not know if I will ever find a major that combines my interests with a career path... I do not really know what to do with my life.”*

The second sub-category was Commitment without Exploration. Some participants indicated their commitments without evidence in their narratives showing

their engagement in exploration. For example, a participant (no. 8) stated, *“My life usually has been dictated by family. What they want me to be is a doctor. I really never had a problem with that... So I never thought that it would be right for me to waste 60k worth of tuition money to spend a year to figure out what I wanted to be... My life is centered around this one goal, and if I fail to achieve this one goal I will literally not know what to do with my life.”*

The third sub-category of this main theme was Exploration without Commitment which represented participants’ engagement in exploring options and alternatives without making a commitment to a particular goal. For instance, a participant (no. 32) wrote, *“I have realized how young I am and that I need to experience life a little more before I commit myself to a relationship that serious.”* Another participant (no. 64) also said, *“I failed and internship for and was held back a year. I am currently retaking the internship and still struggling with the same things. It made me doubtful that this career choice is the right one. I feel exactly the same.”* This narrative (no. 64) appeared to demonstrate the participant may have self-doubt, get stuck in the exploration stage, and have difficulties making a decision or a commitment to future career.

Finally, the fourth sub-category was Exploration and Commitment. Approximately six narratives showed languages around their engagement in doing exploration and making a commitment to taking an action to reach their goals. For example, a participant (no. 86) stated, *“I finally realized that life wasn’t worth living if I wasn’t going to be able to do what I truly loved so I decided to major in marine science*

*and I couldn't be happier.” Another participant (no. 114) wrote, “It was a time of self-discovery for me in a range of aspects. I learned about myself, gained independence and confidence, discovered more about my own interests, set new goals for myself.” A participant (no. 27) also said, “Though a series of process and research, I learnt something important for my life is that I need to enrich my life and do something that I really interested in to achieve my own life value. It changes me to become a person who will set up the goal early and want to achieve it steps by steps. Having a specific goal in mind will encourage me and remind me of doing something to achieve it.” These narratives appeared to show languages that they engaged in goal-directed actions.*

More importantly, within this Exploration and Commitment sub-category, some narratives demonstrated how they grew as a person. A participant (no. 29) said, *“Now I can see that I was growing as a person... This event has influenced me because now I always try to help others.”* Another participant (no. 101) also wrote, *“I realized I cared way too much about what people or others thought about me or things I could not control. After understanding this I've never have felt so liberated. I figured out how to focus on what matters and not on what doesn't... Because I began to be myself instead of being who I thought people wanted me to be.”*

### **Emotion experience.**

Within the main domain of Emotion Experience, there were two sub-categories including No Transformation of Negative Emotion State and Transformation from Negative to Positive Emotion State. This main theme represented how participants

maintained or changed their emotion state after they experienced a turning point or a significant event in life. First of all, some participants indicated that they did not feel any difference before and after the event, especially they appeared to maintain a negative emotion state. For example, a participant (no. 70) said, *“And all my issues started to seep back into everyday life last semester and it has been incredibly difficult to push forward... I regret not giving myself the time or help I needed to process all the things.”*

On the other hand, some participants demonstrated a transformation from negative to positive emotion state in their narratives. For instance, a participant (no. 128) said, *“It was an emotional time in my life, and I went through some very sad days in which I wished to be anywhere but where I was. However, if we balance the equation, the positive moments outweigh the negative moments. I learned and I grew up a lot during this time, and I am a better person because I know what it’s like to feel out of place.”*

### **Extremely High Identity Maturity Group**

#### **Life lessons and insight.**

Similar to the extremely low identity maturity group, the first emerging theme was Life Lessons and Insight which represented what participants learned after a turning point or a significant event happened in life. This main theme included four sub-categories – Eye-Opening Experience, Self-Acceptance, Living in the Present Moment, and Perspective Changes in Life and the Worldview. The fourth sub-category of Perspective Changes in Life and the Worldview was not emerged in the extremely low identity maturity group.

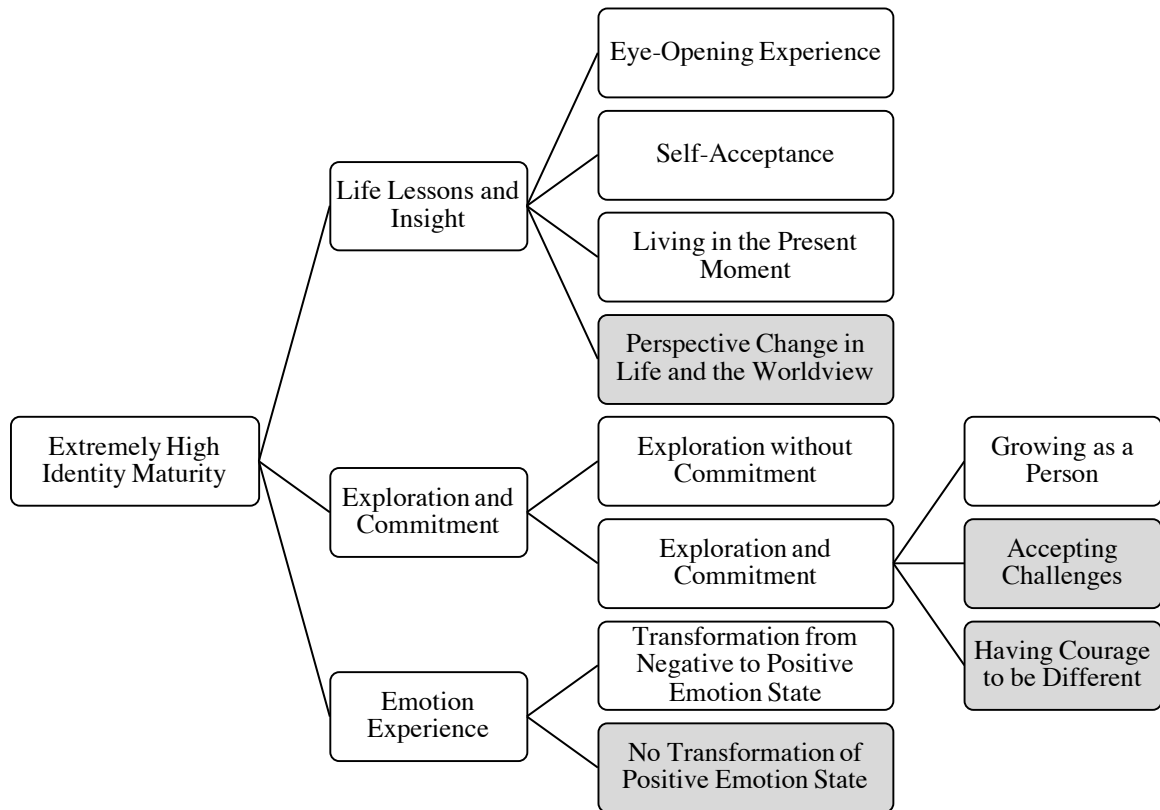


Figure 6. Categories and sub-categories of the extremely high identity maturity group.

In the first sub-category of Eye-Opening Experience, many narratives demonstrated languages around how the event widened their experience in a particular aspect. For example, a narrative (no. 130) mentioned, *“I immediately realized how blind I had been to so many things in my life... I could understand myself and others in a way I had never known. It felt like I had been missing out on an entire layer of life.”* A participant (no. 73) said, *“experiencing this new culture on my own.”* Another participant (no. 48) noted, *“I was really shocked that I could have lived in this bubble.”* The other

participant (no. 6) also said,

*“When I came back from college the first time (winter break of freshman year) and I realized how different and similar my views were with my parents... I hadn't really been aware of this before, but coming back home after being apart for the first time, is when it truly hit me.”*

Second, the Self-Acceptance sub-category represented the way participants accepted unpleasant experience. For instance, a narrative (no. 110) showed, *“I learned that it is not always a bad thing to have experiences in life where you are not in complete control.”* Another participant (no. 69) also said, *“I learned that life is filled with various very painful events, and that it's okay... Essentially, I have accepted a lot of really unpleasant things about my life and life in general, and have come to accept them rather than run away from them.”*

In addition, the third sub-category of Living in the Present Moment represented how participants lived their life in the present moment. For example, a participant (no. 87) said, *“I learned to listen to my body and be more in the moment day to day because anything can happen at any time.”* Another narrative (no. 95) showed, *“It was a wake-up call that at any moment your life could change for the worse or better and that you need to live in the moment and cherish the people you have now.”*

Finally, the fourth sub-category was Perspective Changes in Life and the Worldview which represented how participants changed their perspectives in life or in their worldview after a significant event happened. Examples of narratives included a

narrative (no. 24) showing “*view the event as awesome and life-changing,*” a narrative (no. 48) showing “*It changed my perspective and made me think about society in a different way,*” and a narrative (no. 54) showing “*It is an important event because camp changed my view on religion.*” Another participant (no. 130) also said, “*since then, my entire view of the world has changed. I am more conscious of my desires, interests, feelings, thoughts, and where they stem from. I am able to understand other people in a similar way too.*”

### **Exploration and commitment.**

Within the main domain of Exploration and Commitment in the extremely high identity maturity group, there were two sub-categories including Exploration without Commitment and Exploration and Commitment. The sub-categories of No Exploration and No Commitment as well as Commitment without Exploration were not found and emerged from the narratives in the extremely high identity maturity group. In the sub-category of Exploration without Commitment, a participant (no. 38) wrote, “*This made me consider more about who I am as a person and how I want people to perceive me... I was questioning my place in life and why self-advocating is so important.*”

The second sub-category was Exploration and Commitment. Twelve narratives demonstrated languages around their engagement in exploring options and being committed to taking an action to achieve goals. For example, a participant (no. 49) said, “*Recently I was confused about the career choice I wanted to embark on after college, questioning if education was one of them and since I have begun student teaching I*

*remember why I loved it so much... It gave me clarity on what I wanted to do... It gave me direction and allowed me to see what I really loved.”* Another participant (no. 96) said, *“Choosing that I wanted to pursue a career in medicine was an important event in my life. I think that before that I was very unsure of what my goals were and how I was going to live my life. I think I made some bad choices because I wasn't sure who I was or what I wanted to do with my life. When I chose my career path, it gave me a goal that I could work to achieve. As an athlete, I like to have plans and know what I am doing to achieve the goals I have.”*

Similar to those in the extremely low identity maturity group, eight narratives in the extremely high identity maturity group also demonstrated languages around how they grew as a person and were authentic to the self after experiencing a significant event in life. Particularly in this group, languages around identity development emerged from the narratives such as a narrative (no. 28) showing *“It was the first step in realizing my identity in Christ,”* a narrative (no. 45) showing, *“The transition made me think about my social identity as a teenager, my religious identity, and how I saw myself as a learner,”* and a narrative (no. 54) showing *“It is probably the most important identity in my life because it is the intersection of a second home and my faith.”* A participant (no. 96) also explicitly stated, *“At this time, I was able to figure out who I was as a person and truly think about what I wanted to do with my life. When I found my passion and chose this path, it helped me find my sense of self and who I am.”*

Within this sub-category of Exploration and Commitment, more importantly,

there were two additional codes which were not found and emerged from the narratives in the extremely low identity maturity group; including Accepting Challenges and Having Courage to be Different. To begin with, many participants demonstrated languages around accepting and overcoming challenges after they experienced a turning point or a significant event in life. These narratives demonstrated participants' abilities to accept challenges which appeared to go beyond the event itself and show how they learned and grew from it. For instance, a participant (no. 96) said, *"I am still on the path to pursue medicine. It has given me the strength to endure tough times and get through all the obstacles to being accepted into medical school."* Another participant (no. 2) also stated, *"I was a little bit doubtful that I would get in, and that discouraged me because I knew this university would do great things for me. I am so thankful for all of the opportunities this institution has already instilled for me, all I want to do is keep growing and maturing and not stop until I get to where I want to be."*

Furthermore, seven participants explicitly demonstrated narratives representing how they had courage to be different from other people around them. The following were narrative examples:

*"Even when I was a little kid, I struggled with religion, but it took me until that turning point to realize that just because everyone around me was religious, it didn't mean that I had to be. I allowed myself to become my own person, and I became stronger, and more opinionated than I had ever been in high school."* –

Participant (no. 1)

*“For better or worse, I saw their flaws. I was confused that I had never seen them that way before, despite spending most of my time with them... Now, I think I am more at peace with it. I realize that I don't have to agree with their views... I have learned that differing views, differing actions, and differing mindsets mean very little. It doesn't imply that you don't love and care and respect others if they don't share those with you.” – Participant (no. 6)*

*“Now I feel like I am more open-minded and free of being limited by other peoples' plans for me. My parents didn't want me to move out of state, but even now they recognize that it was the best decision for me... I moved so far away and it allowed me to really consider who I was as an individual. It made me more set in my beliefs and willing to actively pursue them. I realized how different I am from my entire family. Coming to BU also helped me discover what path I really want to pursue in my life, which is entirely different from the path I thought I wanted to pursue when I was in high school.” – Participant (no. 110)*

### **Emotion experience.**

Within the main domain of Emotion Experience, there were two sub-categories including Transformation from Negative to Positive Emotion State and No Transformation of Positive Emotion State. To begin with, participant narratives demonstrated their emotion shifted from negative to positive emotion state after the turning point or significant event happened in life. For instance, a participant (no. 2) said, *“I was a little bit doubtful that I would get in, and that discouraged me... I am so*

*thankful for all of the opportunities this institution has already instilled for me.”* Another participant (no. 45) also said, *“I was feeling overwhelmed and frustrated. Until that point, everything I was a part of was very clear and purposeful... but looking back now, I am very proud of my choice to persevere and learn from my experience.”* In addition, many participants reported having positive emotion states both before and after the event. For instance, a participant (no. 73) said, *“I was filled with energy, excitement, curiosity, and passion. I was constantly amazed by everything new I was learning and how I in turn could pass this interest on to others once I became a teacher... I look back at this event fondly and get excited all over again about my future when I reminisce.”*

### **Types of Event**

Table 15

*Types of Event in Extremely Low and Extremely High Identity Maturity Groups*

Type of Event	Extremely Low Identity Maturity Group (n)	Extremely High Identity Maturity Group (n)	Total (n)
Transition to New Places or Engagement in Doing New Things	8	13	21
Involvement in Educational or Career Paths	12	6	18
Religion	3	3	6
Mortality	2	3	5
Relationship	0	3	3
Failure	2	0	2

Type of Event	Extremely Low Identity Maturity Group ( <i>n</i> )	Extremely High Identity Maturity Group ( <i>n</i> )	Total ( <i>n</i> )
Trauma	0	1	1
No Event or No Narrative	5	4	9
Total	32	33	65

This theme emerged in both extremely low identity maturity group and extremely high identity maturity group and was coded to identify common types of event that participants identified as a significant event in life (see Table 15). The majority of participants in both groups identified the transition to new places or engagement in doing new things as well as involvement in educational or career paths were a significant event or a turning point in life. Some participants in both groups also identified an event related to religion, relationship, and mortality as significant. Some participants in the extremely low identity maturity group considered failure as an important event, whereas a participant in the extremely high identity maturity group mentioned a traumatic event was significant in life.

## **CHAPTER FIVE: DISCUSSION AND CONCLUSION**

The main purpose of this present study was to investigate the role of mindfulness in the process of identity development and goal-setting based on two different identity approaches – the identity status model and narrative identity in emerging adulthood. Through a mixed-methods research approach, this dissertation study provided rigorous findings and meaningful interpretations in better understanding the role of mindfulness in identity development and goal-setting among emerging adults. This chapter presented a discussion of the research findings, followed by implications for theory and practice. Limitations of the study and directions for future research were also offered.

### **Discussion**

The results of this dissertation study supported and extended the literature in several ways. The findings were organized into three main domains based on three research questions. First of all, regarding relationships between mindfulness, goal-setting, and identity-related variables from two different identity approaches, the results showed that the diffusion and moratorium identity statuses were negatively associated with mindfulness and goal-setting, whereas more advanced identity maturity was positively associated with mindfulness and goal-setting. In addition, diffusion and foreclosure were negatively correlated with narrative identity, whereas more advanced identity maturity was positively correlated with narrative identity. Nevertheless, the results showed no associations among narrative identity, mindfulness, and goal-setting.

Furthermore, in response to the second research question, the diffusion and foreclosure identity statuses were negatively associated with narrative coherence, meaning-making and narrative identity, whereas more advanced identity maturity was positively associated with narrative coherence, meaning-making and narrative identity. The qualitative findings also supported the quantitative findings by showing that the narratives in the extremely high identity maturity group were more likely to demonstrate engagement in exploration and commitment, acceptance of challenges, and perspective changes in life and the worldview. Finally, both mindfulness and identity maturity index significantly predicted goal-setting, and the relationship between mindfulness and goal-setting was fully mediated by identity maturity index. Overall, the findings supported and extended the literature on the role of mindfulness in identity development as normative development in emerging adulthood (e.g., Peer & McAuslan, 2016; Robinson, 2012). Detailed discussions based on three research questions were described as follows.

### **Two Identity Models, Mindfulness, and Goal-Setting**

**Q1:** What were relationships between mindfulness, goal-setting, and identity-related variables from two identity approaches – the identity status model and narrative identity?

#### **Identity status model, mindfulness, and goal-setting.**

**H1.1:** There were significantly positive relationships between mindfulness, more advanced identity status, identity maturity index, and goal-setting.

The results showed moderate to strong relationships among variables of interest. To begin with, the findings showed that the diffusion and moratorium identity statuses, both of which had an absence of the commitment dimension in the identity status model, were negatively associated with mindfulness, challenge, and goal-setting. Emerging adults with less advanced identity statuses especially diffusion and moratorium were less likely to be aware of their internal and external experiences, recognize possible challenges, and engage in pursuing their goals. Consistently, the study by Schwartz, Zamboanga, Wang, and Olthuis (2009) found negative associations between diffusion, moratorium, and identity confusion. Adams, Ryan, Hoffman, Dobson, and Neilsen (1984) also found that young adults with the diffusion and moratorium identity statuses tended to report high levels of anxiety and depression. Overall, the results of this present study were consistent with previous research in terms of positive associations between diffusion and maladaptive functioning such as depressive symptoms and poor life satisfaction (Marttinen, Dietrich, & Salmela-Aro, 2016), social and academic maladjustment (Luyckx et al., 2005), lack of meaning and direction (Waterman, 2007), and less involvement in academic autonomy and educational goals (Berzonsky & Kuk, 2000). However, some studies (e.g., Luyckx et al., 2005) showed a positive association between moratorium and openness to experience.

On the other hand, the findings showed that identity maturity index had significantly positive correlations with mindfulness, challenge, and goal-setting. Emerging adults with more advanced identity maturity index were more likely to have high levels of mindfulness, recognize possible obstacles, and engage in taking actions to

pursue their goals. Consistently, prior research studies showed positive associations between the achieved identity status and effective decision making (Marcia, 1993), and between identity development, mindfulness, and other adaptive functioning outcomes (e.g., Galles, 2013; Taber & Blankemeyer, 2015; Zhang, 2011). For example, Galles (2013) found that undergraduate students with higher levels of mindfulness tended to report greater vocational identity and fewer dysfunctional career thoughts, regardless of decision-making styles. With a sample of 166 undergraduate university students, Zhang (2011) also found those with higher levels of mindfulness reported lower levels of career decision-making difficulties and emotional concerns. Furthermore, Taber and Blankemeyer (2015) also indicated that college students with the achieved vocational identity status were more likely to have the capability to be mindful of the present moment, not negatively view the past, and recognize relationships between current behaviors and future outcomes, whereas those with the diffusion vocational identity status reported no associations with present oriented time perspective, more negatively viewed their past experiences, and less oriented toward the future.

Taken together, an interpretation for these findings was that emerging adults with more advanced identity status were more likely to be mindful of their personal needs (e.g., needs, values, interests) and the needs from others and societal contexts in the present moment, recognize possible challenges without ruminating or getting caught up with their cognitive and emotional concerns, and make a commitment to achieving their goals. Consistent with prior work (e.g., Emanuel et al., 2010; Shapiro et al., 2006; Taber & Blankemeyer, 2015; Tsur, Berkovitz, & Ginzburg, 2015), the findings suggested that

mindfulness helps emerging adults develop self-awareness of what is important and what are their internal experiences and external demands in the present moment, which in turn enables them to be authentic with who they are as a person and connect it to future goals and outcomes.

**Narrative identity, mindfulness, and goal-setting.**

**H1.2:** There were significantly positive relationships between mindfulness, narrative coherence, meaning-making, narrative identity, and goal-setting.

It was hypothesized that narrative identity, which consisted of two variables – narrative coherence and meaning-making, was positively associated with mindfulness and goal-setting. Nevertheless, the findings of this present study showed no associations between narrative identity, narrative coherence, meaning-making, mindfulness, and goal-setting. Drawing upon the theoretical framework, it was initially proposed that emerging adults with higher levels of mindfulness were more likely to draw and make meaning of their autobiographical memory and experience, construct their narrative in a coherent way, and use it to guide life directions. As found by Atkins and Styles (2015), mindfulness helped participants shift their narratives from rigid to more flexible perspective taking. Williams et al. (2000) also found that participants with depression were more likely to recall distressing memories and provide more detailed and balanced autobiographical information after receiving the Mindfulness-Based Cognitive Therapy (MBCT) program.

In this regard, the findings of this present study were not consistent with previous studies in terms of positive associations between narrative coherence and other variables related to adaptive functioning such as greater well-being and life satisfaction (Baerger & McAdams, 1999; Water & Fivush, 2015), positive self-perception and a greater sense of purpose and meaning (Water & Fivush, 2015), and lower levels of depression and psychological symptoms (Adler, 2012; Baerger & McAdams, 1999; Hermans, 2006). However, some studies (e.g., Adler, Skalina, & McAdams, 2008; Adler, Wagner, & McAdams, 2007) found positive associations between narrative coherence with ego development, but not with well-being in participants' written narratives after they received psychotherapy treatment. It was possible that inconsistencies among research findings in terms of associations between narrative coherence, narrative identity, and other adaptive outcomes may result from many factors such as operational definitions and measurements of these variables and different coding procedures of narratives.

### **Identity Status Model and Narrative Identity**

**Q2:** What were relationships between the identity status model and narrative identity?

#### **Quantitative findings.**

**H2.1:** There were significantly positive relationships between more advanced identity status, identity maturity index, narrative coherence, meaning-making, and narrative identity.

The findings of the quantitative data showed that the diffusion and foreclosure identity statuses, both of which had an absence of the exploration dimension in the identity status model, were negatively associated with narrative coherence, meaning-making and narrative identity. Emerging adults with less advanced identity statuses especially diffusion and foreclosure were less likely to make meaning of their experience, construct their life story narrative in a coherent way, and develop narrative identity. On the other hand, identity maturity index had significantly positive associations with narrative coherence, meaning-making, and narrative identity. Emerging adults with more advanced identity maturity were more likely to gain insight into their turning point experience, integrate the past, the present and the future to construct their life stories in a coherent way, and develop a clear sense of narrative identity.

The findings of this present study were consistent with prior research (e.g., Dumas et al., 2009; McLean & Pratt, 2006). For example, a longitudinal study by McLean and Pratt (2006) with a sample of adolescents and emerging adults ages 17-23, found significantly positive associations between less sophisticated meaning-making and the diffusion and foreclosure identity statuses, as well as between more sophisticated forms of meaning-making and identity maturity index. Consistently, Dumas and colleagues (2009) found that participants with more advanced identity status were more likely to integrate challenging life situations and develop coherent narratives, whereas those with the diffusion and moratorium statuses showed lower levels of coherent positive resolution in their narratives. These studies also indicated positive associations between more sophisticated forms of meaning-making and dispositional traits of

generativity and optimism (McLean & Pratt, 2006), and between coherent positive resolution and emotional adjustment (e.g., optimistic attitudes, a sense of well-being, and low levels of depressive symptoms; Dumas et al., 2009). Taken together, the findings of this present study suggested that when a significant or turning point event happened in life, emerging adults with more advanced identity maturity were more likely to engage in meaning-making processes especially taking meanings beyond the specific event to their understanding of themselves and the world, construct their narrative identity in a coherent way, and move on from the turning point event with positive views and emotion tones.

### **Qualitative findings.**

**Q2.1:** What were similarities and differences in emerging adults' narratives between the extremely high identity maturity group and the extremely low identity maturity group?

Consistently, the qualitative data supported the quantitative findings, leading to stronger results, better explanations and interpretations of the findings, and greater insight into the theoretical framework as proposed in this present study. The qualitative findings showed three main differences in participant narratives between the extremely high identity maturity group and the extremely low identity maturity group, including changes in perspectives in life and the worldview, exploration and acceptance of challenge, and emotion experience. First of all, the findings showed that narratives in the extremely high identity maturity group demonstrated languages around changes in their perspectives in life and the worldview, which was consistent with prior research studies (Dumas et al.,

2009; McLean & Pratt, 2006) as well as with the quantitative findings of this present study in terms of positive associations between more advanced identity maturity and more sophisticated form of meaning-making (insight). The chi-square test of independence also indicated statistically significant differences in mean scores on meaning-making between the extremely high identity maturity group and the extremely low identity maturity group.

Second, narratives in the extremely low identity maturity group were less likely to demonstrate languages related to exploration and acceptance of challenge, which was consistent with the quantitative findings in terms of negative associations between the diffusion and foreclosure identity statuses, both of which had an absence of the exploration dimension in the identity status model, and narrative coherence, meaning-making, and narrative identity. Consistently, McLean and Pratt (2006) suggested that turning point narratives could be considered as identity exploration. Within the domain of exploration and commitment, moreover, narratives in the extremely high identity maturity group were more likely to demonstrate languages around accepting challenges and having courage to be different. This quality of accepting challenges in the extremely high identity maturity group was consistent with the quantitative findings in terms of positive associations between identity maturity index and challenge.

In addition, the rigorous qualitative findings of this present study replicated and extended the theoretical frameworks and the quantitative findings of many research studies (e.g., Crocetti et al., 2008a, 2008b; Luyckx et al., 2006, 2008) which attempted to

expand Marcia's (1966) identity statuses into more dimensions. In order to capture identity statuses as more fluid than static, for example, Luyckx and colleagues (Luyckx et al., 2006, 2008) proposed more dimensions of identity statuses including *exploration in breadth*, *exploration in depth*, *commitment making*, *identification with commitment*, and *ruminative exploration*. Consistent with the qualitative findings of this study, the narratives demonstrated a range of how participants engaged in the exploration and commitment processes. The narratives in the extremely low identity maturity group were more likely to show languages around having self-doubt and lack of goal-directed actions, consistent with *ruminative exploration* (Luyckx et al., 2008) which indicated that they may maintain stuck with exploring alternatives without feeling satisfied and being able to make a decision or a commitment. For example, a participant (no. 64) said, "*I failed and internship for and was held back a year. I am currently retaking the internship and still struggling with the same things. It made me doubtful that this career choice is the right one. I feel exactly the same.*"

On the contrary, participants in the extremely high identity maturity group were more able to move on from that doubtful exploration stage to the commitment stage together with a positive emotion tone even though their narratives also showed languages around self-doubt. For instance, a participant (no. 2) stated, "*I was a little bit doubtful that I would get in, and that discouraged me because I knew this university would do great things for me. I am so thankful for all of the opportunities this institution has already instilled for me, all I want to do is keep growing and maturing and not stop until I get to where I want to be.*" More importantly, the narratives in the extremely high

identity maturity group tended to demonstrate adaptive functioning and abilities to reflect on their experiences, seek out information, and engage in alternative activities in dealing with or evaluating current commitments, which was consistent with the dimension of *uncommitted moratorium* (Berzonsky & Neimeyer, 1994), as well as *exploration in depth* and *identification with commitment* (Luyckx et al., 2006). The following examples of narratives demonstrated these qualities.

*“Up until that point, I was relatively unsure of what I wanted to do with my life... Then, I taught a lesson on compassion to first graders. I realized the importance of children's voices and ideas, which prompted me to pursue elementary education.”* - A narrative (no. 39).

*“Recently I was confused about the career choice I wanted to embark on after college, questioning if education was one of them and since I have begun student teaching I remember why I loved it so much!... It gave me clarity on what I wanted to do... It gave me direction and allowed me to see what I really loved... That it is ok to have doubts.”* - A narrative (no. 49).

*“The journey also confirmed for me what I had previously thought would be a good career choice for me based on my personality type and interests; a foreign language teacher... It allowed me to develop a sense of independence and freedom, not to say that my home life/family restrained me from doing so before though. It also allowed me to recognize new interests that I had and helped lead me on the path to determining what I want to do in life.... It also allowed me to*

*recognize new interests that I had and helped lead me on the path to determining what I want to do in life. It has shaped my path that I have taken as I plan ahead for my future career.” - A narrative (no. 73).*

Finally, the narratives of both groups demonstrated a transformation from negative to positive emotion states after a significant or turning point event happened in life. However, narratives in the extremely high identity maturity group were more likely to demonstrate languages showing a positive emotion tone throughout their turning point experiences, whereas narratives in the extremely low identity maturity group showed no transformation of negative emotions. These qualitative findings were consistent with previous research studies in terms of positive associations between more sophisticated forms of meaning-making and optimism (McLean & Pratt, 2006), and between coherent positive resolution and emotional adjustment (Dumas et al., 2009). More importantly, prior research work (e.g., McLean & Pratt, 2006) showed that narratives with more sophisticated forms of meaning-making demonstrated a shift by turning a negative life event to a positive experience, which McAdams et al. (2001) referred as a redemptive sequence. A study by Liao et al. (2015) also found that emerging adult female participants with a redemptive sequence, independent of the achieved identity status, reported greater psychological well-being than a contamination sequence which McAdams et al. (2001) referred to turning a positive life event to a negative experience.

McAdams, Reynolds, Lewis, Patten, and Bowman (2001) conducted two studies respectively with 74 adult participants and 125 college student participants, coding for

redemption and contamination sequences in their narratives. In the first study, they found positive associations between redemption sequences and psychological well-being including self-esteem, coherence, positive affect, and life satisfaction. On the contrary, the findings showed negative associations between contamination sequences and these variables. In the second study, McAdams et al. (2001) found positive associations between redemption sequences, emotional tones, and psychological well-being (e.g., a sense of purpose, self-acceptance, and a sense of mastery). Through turning point narratives, individuals who tended to take positivity from a negative event and have a positive resolution demonstrated their abilities to adjust to and recover from adversity, better make sense of their suffering, and work through negative life events (McAdams et al., 2001; McAdams & Mclean, 2013; Pals, 2006). Consistent with the findings of this present study, narratives in the extremely high identity maturity group demonstrated a transformation from negative to positive emotion states after the significant or turning point event happened in life, indicating their greater adaptation to challenges.

Taken together, the findings of this present study suggested that emerging adults with more advanced identity maturity and in the extremely high identity maturity group tended to show narratives involving perspective-changing, engagement in the exploration and commitment processes, and a transformation from negative to positive emotion experiences. As a result, they tended to have a better understanding of different unfolded aspects of the self, develop greater adaptation to challenges and negative events, and make better sense about who they are and what they want to do in the future.

Consistently, many theorists and researchers indicated that emerging adults constructed

and used their autobiographical narratives to understand themselves with a sense of unity and purpose (McAdams, 2011; McAdams & McLean, 2013; McAdams et al., 2001; Singer, 2004) and those with identity achievement tended to live a life consistent with their true selves, values, and goals (McAdams & Adler, 2010). As postulated by many authors (e.g., McAdams, 2011; McLean & Pasupathi, 2012; McAdams et al., 2001; Schwartz et al., 2013b; Syed & Azmitia, 2008), narrative approaches are helpful to support the identity status model in terms of how individuals come to understand themselves and make commitments to their identity and goal pursuits.

### **The Role of Mindfulness in Identity Development and Goal-Setting**

**Q3:** What was the role of mindfulness in identity development and goal-setting?

**H3.1:** Mindfulness and identity-related variables (identity maturity index and narrative identity) together had a significantly positive impact on goal-setting.

The study investigated how three variables including mindfulness, identity maturity index, and narrative identity predicted goal-setting; through utilizing many statistical methods. First of all, the results showed that both mindfulness and identity maturity index significantly predicted goal-setting among emerging adults, and this model explained approximately 18% of the variability in goal-setting. However, narrative identity did not play a role and did not significantly improve this prediction. The results were consistent with previous studies such as the effect of mindfulness as cognitive operation on an integrated sense of self (Robinson, 2012). Consistently,

Markowitz (2014) found the effect of mindfulness and identity development together on college adjustment among emerging adults.

**H3.2:** There was a significantly positive relationship between mindfulness and goal-setting; through a mediating role of identity-related variables (identity maturity index and narrative identity). Mindfulness had a significantly positive impact on identity development, which indirectly had a significantly positive impact on goal-setting.

The findings indicated that mindfulness did not have a direct impact on goal-setting, but had an indirect impact on goal-setting through a mediating role of identity maturity index. In other words, the relationship between mindfulness and goal-setting was fully mediated by identity maturity index. The results suggested that emerging adults with higher levels of mindfulness were likely to develop more advanced identity maturity, which in turn promoted their goal-setting. However, the results showed no effects of narrative identity on these interactions and relationships.

**H3.3:** Mindfulness had a more significantly positive impact on goal-setting in the high identity maturity group than in the low identity maturity group.

When scores on identity maturity index were categorized into the high identity maturity group and the low identity maturity group, the results showed significant differences between two groups in all variables except use of resources. Interestingly in the low identity maturity group, no associations between mindfulness and other variables were found. The results also showed that mindfulness did not significantly affect goal-

setting in the low identity maturity group ( $\beta = .085$ ,  $t(1, 60) = .662$ ,  $p = .511$ ), whereas mindfulness significantly affected goal-setting in the high identity maturity group ( $\beta = .346$ ,  $t(1, 66) = 10.227$ ,  $p < .001$ ). The findings suggested that when having more advanced identity maturity, emerging adults with higher levels of mindfulness were more likely to engage in goal-setting behavior.

Collectively, the findings in this present study were consistent with prior research (e.g., Leroy et al., 2013; Peer & McAuslan, 2016; Shirai, Nakamura, & Katsuma, 2016; Tsur, Berkovitz, & Ginzburg, 2015). For example, a study by Peer and McAuslan (2016) showed that emerging adults with lower levels of a sense of instability and feeling in-between, and higher levels of self-focus tended to have higher levels of mindfulness, subsequently leading to lower levels of self-doubt. Peer and McAuslan (2016) suggested that mindfulness played a protective role buffering emerging adults from self-doubt. Consistently, mindfulness was found to promote bodily signals and clarity of emotions; leading to authenticity (Tsur, Berkovitz, & Ginzburg, 2015). In this regard, mindfulness promotes individuals' direct contact of pleasant and unpleasant experiences (e.g., Bishop et al., 2004; Brown, Ryan, & Creswell, 2007), which in turn enables them to have a clear sense of what they like and what they want to do in the future.

Consistently, Shirai, Nakamura, and Katsuma (2016) suggested that mindfulness involving present orientations also helped individuals become more attentive to exploring options in the present moment and less concerned about the future, leading them to make a commitment to future goals. Leroy et al. (2013) also found that mindfulness enhanced

individuals' authentic functioning, which indirectly promoted their work engagement. Taken together, these related findings suggested that mindfulness promoted emerging adults' engagement in the process of exploration and commitment, which was an indicator of more advance identity status, which in turn enabled them to be more aware of true selves, less question themselves and more commit to identifying goals and life directions.

### **Implications**

This study supports and extends the existing literature on identity development theories, mindfulness, and goal-setting in an emerging adult population. The findings provide significant implications for both theory and practice as follows.

#### **Implications for Theory**

First of all, the present study makes a useful contribution to the current body of literature through a novel focus on the role of mindfulness in the process of identity development and goal-setting in an emerging adult population. Many authors (e.g., Arnett, 2000; Schwartz, Côté, & Arnett, 2005) proposed that emerging adulthood is a challenging developmental period in which many young people explore interests through changing and selecting educational and occupational goals, and then make a commitment to pursuing them. During this stage, it is important for emerging adults to maintain flexible enough and adjust their approaches and goals in response to changing circumstances and emerging new opportunities (Schwartz, Côté, & Arnett, 2005). As postulated by many researchers (e.g., Marcia, 1966), self-awareness is considered as a

way to help young people have a better understanding of themselves especially in the exploration and commitment process. This present study provides potential findings which fit into a conceptual framework that mindfulness, which involves direct, non-judgmental self-observation, openness to experience, self-regulation, and self-understanding, helps emerging adults become attentive to their needs and goals and make choices consistent with their true selves (e.g., Bishop et al., 2004; Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007).

Furthermore, the present study extends the current body of literature and knowledge base in relation to two different identity approaches – the identity status model and narrative identity. The literature conceptually emphasized that Marcia's (1966) identity status model and narrative identity are primarily drawn from Erikson's work on identity crisis in adolescence (Schwartz et al., 2013a, 2013b; Waters & Fivush, 2015), correlate with each other in terms of the exploration-commitment dimension, and involve goal-directed behaviors (McLean & Pasupathi, 2012); however, little empirical research was found. Through the mixed-methods research approach, this present study empirically illuminates how the identity status model and narrative identity are inter-related especially how a turning point event involves the exploration-commitment dimension. Particularly, the qualitative findings provide a comprehensive understanding of how two identity approaches are linked to one another. Through the process of identifying and narrating a turning point event in life, emerging adults are inevitably faced with some information which may be threatening to the self in terms of

inconsistencies between their internal self and the external world, and subsequently may experience pleasant or unpleasant emotions.

The findings suggest that narratives in the extremely high identity maturity group demonstrate processes of accepting and adjusting to challenges and arriving a positive resolution, whereas those in the extremely low identity maturity group displayed processes of getting stuck and persistently experiencing negative emotions. Many researchers (e.g., Crocetti et al., 2008a, 2008b; Luyckx et al., 2006, 2008) used quantitative research methods in an effort to expand Marcia's (1966) four identity statuses to more dimensions; however, the qualitative findings of this present study provide the rigorous data that better capture the process of identity development as changing continuum beyond categorical aspects of the exploration-commitment processes. In addition, the narratives in both groups demonstrate languages around having efforts to make sense and meaning of their experiences in order to resolve such conflicts and integrate a sense of who they are and what they want to do in the future. Therefore, these qualitative findings provide significant implications and empirically support associations between Erikson's (1950, 1968) work on identity confusion and identity synthesis, Marcia's (1966) identity status model, and narrative identity (e.g., McAdams, 1985, 1995; McAdams & Pals, 2006; Singer, 2004).

More importantly, the findings extend and offer new perspectives that mindfulness specifically fosters emerging adults' openness to change and engagement in exploring alternatives especially in the face of new opportunities and inconsistencies

between their own needs and the needs from others and society, which is an important and adaptive process of identity development. Consistent with the literature (e.g., Brown, Ryan, & Creswell, 2007; Langer, 1989; Langer & Moldoveanu, 2000; Santorelli, 1992), mindfulness promotes emerging adults' a sense of flexibility which enables them to let go previous goals that may no longer work, modify their goals, or develop new goals based on present realities as new experiences arise.

This process can further enable emerging adults to seek out more information and possibilities, arrive a positive resolution, and develop an integrated sense of self (Adam & Marshall, 1996; McAdams, 2011, 2013; McAdams & Adler, 2010). As a result, they will be able to come to understand themselves and make a commitment to who they want to be and what they want to do in the future. Therefore, the findings support a theoretical framework proposed in this study in terms of the role of mindfulness in the process of identity development and goal-setting, which includes development of ongoing self-awareness, a resolution to incongruity, and an ability to integrate information about the self and the context in a coherent way. Mindfulness thus plays a protective role as an ongoing psychological process and a therapeutic tool for helping emerging adults develop a clear sense of self and achieve their goals in the future.

### **Implications for Practice**

This present study provides practical implications for educators and mental health professionals working with college and emerging adult populations. Prior research studies (e.g., Bowen & Marlatt, 2009; Lakey et al., 2007; Marchiori & Papies, 2014;

Mermelstein & Garske, 2015) seemed to focus on providing implications in regard to the impact of mindfulness practice on addressing and reducing maladaptive functioning and mental health concerns in emerging adults. Indeed, this study supports previous studies (e.g., Markowitz, 2014; Peer & McAuslan, 2016; Robinson, 2012; Shirai, Nakamura, & Katsuma, 2016) and further suggests that emerging adulthood is a challenging and normative developmental period involving young people in exploring alternatives, adjusting and being flexible, and making a commitment to their goals, and mindfulness can facilitate these normative processes. The findings raise an importance of incorporating mindfulness-based interventions in promoting these specific aspects of identity development and goal-setting in emerging adults and college students so that they will be able to manage these challenges effectively and make transitions to adulthood successfully.

The findings suggest specific strategies. First of all, the study suggests that assessing college students' current stage of exploration and commitment in pursuits of educational and career goals should be incorporated into the process of intake assessment or clinical interview strategies in college counseling center. Generally, an initial assessment in college counseling center is conducted through a brief clinical interview together with an administration of the Counseling Center Assessment of Psychological symptoms-62 (CCAPS-62; Locke et al., 2011) as a way to gather information and assess college students' presenting concerns. A brief questionnaire of identity development such as the Objective Measure of Ego Identity Status (OM-EIS; Adams, Shea, & Fitch, 1979) should be utilized and incorporated as a part of the initial assessment process in

order to normalize college students' experiences as they may try to figure out a sense of self in many aspects in life (e.g., career, religion, and politics). The results of the assessment together with clinical interview may further inform treatment plans and interventions for college student and emerging adult clients.

Second, mindfulness should be incorporated into prevention or early intervention programs targeting college students and emerging adults who are in the process of exploring their interests, values and expertise, as well as changing or making a commitment to their educational or occupational goals. As aforementioned, switching majors is not an indicator of indecisiveness or maladaptive functioning, but rather an opportunity for emerging adults to explore possibilities and make a commitment that most fits their interests and goals (Venit, 2016). However, this process should happen early in college especially during the freshmen or sophomore years in which they have opportunities to engage in self- and career-related exploration and decision-making (Venit, 2016). Otherwise, it could potentially delay their time for graduation or even lead to dropping-out if the exploration and commitment process happens later in their college years (Venit, 2016). In this regard, mindfulness plays a protective role in buffering college students from developing maladjustment, delaying time for graduation, and dropping-out from school. Educators and mental health professionals should design and implement outreach programs and interventions that cultivate mindfulness skills for college students as a majority of the emerging adult population.

Consistent with the conceptual framework of this dissertation study, mindfulness may be a way to facilitate emerging adults developing self-awareness of what they are noticing in terms of physical, emotional, and behavioral reactions (Tsur, Berkovitz, & Ginzburg, 2015), what is meaningful and important (Shapiro et al., 2006), and what are educational or occupational activities they find enjoyable (Taber & Blankemeyer, 2015), which in turn enables them to recognize their interests, values, and beliefs. Mindfulness could be utilized to help college students recognize and reflect on their experiences in terms of what is consistent or inconsistent with their needs, as well as accept and view information about the internal self and the external world in more non-judgmental and objective ways (Bishop et al., 2004; Brown, Ryan, & Creswell, 2007; Hayes et al., 1996; Segal et al., 2002). In addition, mindfulness may be used to promote a sense of curiosity encouraging emerging adults to seek out more information and activities so that they can modify and regulate their responses and make choices consistent with their personal and situational demands (Bishop et al., 2004; Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Galles, 2013; Langer, 1989; Langer & Mooloveanu, 2000; Santorelli, 1992). These are consistent with previous work suggesting that mindfulness can help emerging adults engage in career exploration and information-seeking behavior (Galles, 2013; Shirai, Nakamura, & Katsuma, 2016), develop personal, emotional and social college adjustment (Markowitz, 2014), engage in career problem solving and decision-making processes (Galles, 2013; Zhang, 2011), and evaluate possible options and set future goals (Shirai, Nakamura, & Katsuma, 2016).

As part of common college experiences, furthermore, many undergraduate and graduate students may encounter a turning point or significant event in life such as participating in the study abroad program, summer internships, and civic engagement. This new and different learning experience generally provides emerging adults with the opportunity for self-exploration and self-discovery. Engagement in a new and different learning experience is normatively both rewarding and challenging because emerging adults may develop clarity about their choices, goals and values, and at the same time, may experience stress and worry about uncertainty (Rogers & Maytan, 2012). In this regard, mindfulness practice may be used to facilitate emerging adults' and college students' openness to change and development of new perspectives about the self and the world; leading to an integrated sense of self (e.g., Langer, 1989; Langer & Mooloveanu, 2000; Littman-Ovadia et al., 2013; Robinson, 2012; Zhang, 2011). In other words, during turning point events in life, mindfulness may enable emerging adults to take an active role rather than a passive role through acceptance, curiosity, and willingness to face challenges and recognize them as opportunities to grow rather than as problems. Being present in the moment may help them develop a clear sense of who and where they are, get the most out of their experiences, and notice how things are connected such as their interests, personality, goals, and values. As a result, through openness to new experiences and changes, mindfulness helps emerging adults *emerge* into a sense of self.

Additionally, helping professionals may utilize mindfulness-based interventions involving college students in narrative approaches such as journaling and letter writing which may enable them to express and narrate their autobiographical or turning point

stories. These interventions may allow emerging adults to reflect on and make meaning of their experiences as well as develop a better understanding of the self particularly from a new perspective (McAdams & Adler, 2010). As a result, they may recognize how they come to understand and connect with who they are and what they like to do in the future (McLean & Pasupathi, 2012). When emerging adults engage in mindfulness practice over time, helping professionals should also pay attention to how their narratives shift from self as a content and rigidity to self as a process and flexibility (Atkins & Styles, 2015). Consistent with the conceptual framework proposed in this present study, mindfulness which involves direct, non-judgmental self-observation, openness to experience, self-regulation, and self-understanding facilitates the process of exploration and commitment, which in turn leads to greater engagement in goal-setting behavior.

Finally, the findings and clinical implications of this dissertation study seem to be consistent with psychotherapy approaches and interventions especially Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) and KORU (Rogers & Maytan, 2012). For instance, Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) proposed that mindfulness can promote individuals' psychological flexibility, acceptance, and value-based, committed actions toward who they want to be. This is consistent with the findings of this present study in terms of recognizing a sense of identity, making a commitment to achieving goals, and being open to change based on new experiences. In addition, another widely used mindfulness-based intervention is the KORU curriculum (Rogers & Maytan, 2012), which is a four-week course (a weekly 75-minute session) aimed at helping the emerging adult college student

population cope with anxiety and develop a personal growth such as self-acceptance and self-compassion. Greeson, Juberg, Maytan, James, and Rogers (2014) conducted a randomized controlled trial in the university setting, and found the effectiveness of the KORU program on emerging adults' overall well-being including reductions in perceived stress and sleep problems as well as increases in mindfulness and self-compassion. Taken together, it is promising practice to incorporate and implement mindfulness-based interventions in promoting identity development and college success in the emerging adult college student population.

### **Limitations**

When interpreting the findings and providing implications of the study, many limitations should be considered. First of all, there was no clear consensus about what are conceptual and operational definitions of mindfulness and which approach best captures the mindfulness construct (e.g., Bishop et al., 2004; Brown & Ryan, 2004; Carlson, 2013; Grossman, 2011; Hayes & Shenk, 2004). Several authors (e.g., Bishop et al., 2004; Brown & Ryan, 2003, 2004) concerned that it may not be possible to develop unifying instruments and conduct empirical studies on the mediating role and mechanisms of mindfulness. In addition, mindfulness measures tend to rely on an assumption that conscious awareness can be reported subjectively (Brown, Ryan, & Creswell, 2007; Tsur, Berkovitz, & Ginzburg, 2015). Some studies (e.g., Creswell et al., 2007) have been done to enhance the validity of self-report mindfulness measures by examining its associations with neuro-biological factors. However, the mindfulness

instrument which was used in this present study has been empirically validated in several research studies especially with the emerging adult population (Brown & Ryan, 2003).

Second, the dispositional mindfulness measure and the identity status self-reported instrument used in this study may assume that participants' mindfulness and identity may be stable or static. In the reality, however, these qualities tend to be malleable. It is therefore important to interpret the findings and implications that emerging adults may represent certain characteristics of mindfulness and identity at a particular point of time. The reliability of the identity status measure was also modest, which was consistent with other empirical studies (e.g., McLean & Pratt, 2006). Third, the fact that individuals in general may overestimate or underestimate information about the self such as how much and how accurate information they could subjectively recall in order to describe and narrate their life stories may be another challenge needed for consideration. Open-ended questions in the survey may be also biased to certain extent and they would need to be tested in a pilot study before being used for future studies. Fourth, a sample of this present study was fairly homogeneous; however, cultural and gender differences in participants' narratives were not addressed and coded. These factors may have an influence on how participants narrated their life stories and especially made meaning of their lived experiences (McLean & Pratt, 2006).

Additionally, the study utilized the well-validated, evidence-based coding systems for analyzing participants' narratives. Seven student research assistants got trainings and coded the narratives independently in order to establish the reliability of coding results

and research findings. However, lack of strong correlations between narrative identity and other variables may result partly from this method. Furthermore, the sample size was small. Finally, the generalizability of this study to men or to broader populations with different educational and social-cultural backgrounds may be limited because the sample of participants represented a predominantly White female college student population in a private university in a metropolitan area. Replication of this study from a larger pool sample through using multi-method approaches among diverse groups of the emerging adult population can further provide empirical evidence and advance this area of research.

### **Directions for Future Research**

This dissertation study may serve as a foundational basis and a conceptual framework for future studies in many areas especially in relation to mindfulness, identity development, and goal-setting in emerging adulthood. First of all, future research should further investigate and establish a consensus on the conceptually and operationally defining criteria of mindfulness (Bishop et al., 2004). Holzel et al. (2011) indicated that distinct components of mindfulness have not yet been clearly differentiated. There is a call for a better understanding and agreement of the process and different components of mindfulness so that multi-faceted research questions will be more empirically examined (Holzel et al., 2011). It is also important for future research to better understand mechanisms of action underlying whether state or trait mindfulness affects the functioning of outcome-related variables (Holzel et al., 2011).

In addition, the literature indicated that emerging adults have increased mental capacities to explore a variety of possibilities (e.g., Bosma & Kunnen, 2001) and more complex processes of formal operational thinking to create ongoing autobiographical stories and narrative identity (e.g., McAdams, 2013; McAdams & McLean, 2013; McAdams & Pals, 2006; Mclean, Pasupathi, & Pals, 2007). During college years, emerging adults may be going through the processes of exploration and commitment differently depending on which years they are. It is thus important for future research studies to examine moderating roles of age and college years in the identity development process and differences in identity status, meaning making, narrative coherence, narrative identity, and goal-setting. Through age and group differences, future studies therefore can help better understand how life experiences, situational demands, and lifespan developmental stages have an influence on the development of a sense of self and life directions in the emerging adult college student population. Based on the conceptual framework proposed in the study, relationships among these variables should be further examined and replicated, particularly through the Structural Equation Modeling statistical method, in order to better understand these associations and gain greater insight into what mechanisms of mindfulness are most effective in facilitating the processes of identity development and goal-setting in the emerging adult college student population.

Furthermore, some authors recently expanded Erikson's (1950, 1968) identity confusion and identity synthesis, and Marcia's (1966) identity status model by proposing other dimensions of identity status such as *ruminative exploration* (Luyckx et al., 2008) and *reconsideration of commitment* (Crocetti et al., 2008a, 2008b). Luyckx et al. (2008)

refers *ruminative exploration* to individuals' inability to move from the exploration process because of extreme concerns if they make the right decision or a commitment to the right choice. Crocetti et al. (2008a, 2008b) refers *reconsideration of commitment* to individuals' consideration and effort to change their decision and commitment because they recognize their shifts in interests and dissatisfaction with current options. Both dimensions suggested that openness to new experiences may facilitate the exploration and commitment process (Schwartz et al., 2013a), which was consistent with what was conceptualized and found in this dissertation study. However, future research should further examine how mindfulness facilitates these dimensions of recently-proposed identity statuses.

Additionally, participants may engage in self-reflection on their experiences while narrating their turning point events in response to open-ended questions on the survey, which may engage them in developing metacognition and self-knowledge. According to the existing literature related to mindfulness, however, it has been controversial whether or not mindfulness involves metacognition. Some authors suggested that mindfulness involves self-knowledge (Carlson, 2013; Tsur, Berkovitz, & Ginzburg, 2015), metacognitive skills (Bishop et al., 2004), or cognitive operations (Galles, 2013; Langer 1989; Langer & Mooloveanu, 2000; Robinson, 2012), whereas some authors argued that mindfulness involves self-observation as a process rather than self-knowledge as an outcome (e.g., Bishop et al., 2004; Brown & Ryan, 2003, 2004). Bishop et al. (2004) suggested that it would be helpful to test this mechanism of mindfulness if it involves complexity of cognition in autobiographical recall or narrative identity. However, no

associations between mindfulness and narrative identity have been found in this present study. Future research should further investigate this potential mechanism of mindfulness.

Finally, prior studies primarily focused on examining the impact of mindfulness-based interventions on reducing psychological symptoms and maladaptive functioning such as stress (Gu, Cavanagh, & Strauss, 2017; Ramasubramanian, 2017), drinking behaviors (Mermelstein & Garske, 2015), eating behaviors (Marchiori & Papies, 2014), and smoking behaviors (Bowen & Marlatt, 2009). Future research should further investigate the effectiveness and the impact of short-term mindfulness-based interventions on identity development which is normative development in the emerging adult college student population. Overall, many prior studies showed promising outcomes of brief mindfulness exercises in college students such as the impact of six-session workshop on stress management and self-compassion (Hindman, 2013), and the impact of five-week mindfulness program on perceived stress, mental distress, and self-efficacy (Phang et al., 2015). Demarzo and colleagues (2017) conducted a quasi-experimental pilot study with pre-test, post-test, and six-month follow-up assessments with a non-clinical college student sample. They found no significant differences in the effectiveness of eight-week and shortened four-week mindfulness-based intervention programs on overall well-being among college students. Future interventions should adjust mindfulness practice by shortening the number and the length of sessions, so that it would be more accessible for college students (Demarzo et al., 2017). Therefore, it is very important for future research studies to further examine how short-term

mindfulness-based intervention programs have an impact on identity development and goal-setting in emerging adults and college students.

### **Conclusion**

In summary, this mixed-methods dissertation study investigated the role of mindfulness in the process of identity development and goal-setting in emerging adults from two different identity approaches – the identity status model and narrative identity. The findings generally supported and extended the current body of literature in many ways. Specifically, this study highlighted the importance of incorporating mindfulness-based interventions as promising practice in college mental health to foster emerging adults' openness to new experiences and willingness to face challenges in these rapidly changing occupational structures and social environments so that they will be able to manage these challenges effectively and make transitions to adulthood successfully.

## APPENDIX

### Appendix A: Mindfulness Attention and Awareness Scale (MAAS)

Instruction:

Below is a collection of statements about your everyday experience. Please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

Almost Always	Very Frequently	Somewhat Frequently
Somewhat Infrequently	Very Infrequently	Almost Never

1. I could be experiencing some emotion and not be conscious of it until some time later.
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.
3. I find it difficult to stay focused on what's happening in the present.
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
6. I forget a person's name almost as soon as I've been told it for the first time.
7. It seems I am "running on automatic," without much awareness of what I'm doing.
8. I rush through activities without being really attentive to them.
9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.
10. I do jobs or tasks automatically, without being aware of what I'm doing.
11. I find myself listening to someone with one ear, doing something else at the same time.
12. I drive places on 'automatic pilot' and then wonder why I went there.
13. I find myself preoccupied with the future or the past.
14. I find myself doing things without paying attention.
15. I snack without being aware that I'm eating.

From Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822-848. Copyright © 2003 by American Psychological Association. Reprinted with permission.

### Appendix B: Objective Measure of Ego Identity Status (OM-EIS)

Instruction:

Please indicate your agreement with each of the following statements.

Strongly Disagree  
Agree

Moderately Disagree  
Moderately Agree

Disagree  
Strongly Agree

1. Politics is something that I can never be too sure about because things change so fast. But I don't think it's important to know what I can politically stand for and believe in.
2. I might have thought about a lot of different jobs, but there has never really been any question since my parents said what they wanted of me.
3. When it comes to religion I just haven't found anything that appeals and I don't really feel the need to look.
4. My parents had it decided a long time ago what I should go into and I'm following their plans.
5. There are so many different political parties and ideals. I can't decide which to follow until I figure it out.
6. I don't give religion much thought and it doesn't bother me one way or the other.
7. I guess I'm pretty much like my folks when it comes to politics. I follow what they do in terms of voting and such.
8. I haven't chosen the occupation I really want to get into, and I'm just working at whatever is available until something better comes along.
9. A person's faith is unique to each individual. I've considered and reconsidered it myself and know what I can believe.
10. It took me a long time to decide but now I know for sure what direction to move in for a career.
11. I really have never been involved in politics enough to make a firm stand one way or the other.
12. I'm not so sure what religion means to me. I'd like to make up my mind but I'm not done looking yet.
13. I've thought my political beliefs through and realize I can agree with some and not other aspects of what my parents believe.
14. It took me a while to figure it out, but now I really know what I want for a career.
15. Religion is confusing to me right now. I keep changing my views on what is right and wrong for me.
16. I'm not really interested in finding the right job, any job will do. I just seem to follow with what is available.
17. My folks have always had their own political and moral beliefs about issues like abortion and mercy killing and I've always gone along accepting what they have.
18. I've gone through a period of serious questioning about faith and can now say I understand what I believe in as an individual.

19. I'm not sure about my political beliefs, but I'm trying to figure out what I can truly believe in.
20. I'm still trying to decide how capable I am as a person and what work will be right for me.
21. I attend the same church as my family has always attended. I've never really questioned why.
22. I just can't decide what to do for an occupation. There are so many possibilities.
23. I've never really questioned my religion. If it's right for my parents, it must be right for me.
24. I've thought my political views through. Some ideas agree and others disagree with my parents.

From Adams, G. R., Shea, J., & Fitch, S. A. (1979). Toward the development of an objective assessment of ego-identity status. *Journal of Youth and Adolescence*, 8, 223–237. Copyright © 1979 by Springer Nature: Journal of Youth and Adolescence. Reprinted with permission.

### Appendix C: Goal-Setting Scale

Instruction:

This group of items asks how much you agree or disagree with each statement associated with your college to career views. Remember there are no right or wrong answers. What matters is that you answer according to your actual way of thinking and behaving.

Strongly Disagree  
Agree

Disagree  
Strongly Agree

Don't Know

1. I generally like to have at least three long-term goals (next 5 to 10 years) for my future.
2. I like to identify short-term goals (next 3 to 6 months) that will help me achieve my long-term goals (next 5 to 10 years).
3. I rank my goals in terms of importance.
4. I set timelines to meet my short-term goals.
5. I like to create a step-by-step plan to achieve my goals.
6. I consider the importance of my goals by thinking about positives (Pros) and negatives (Cons).
7. I carefully plan out ways to successfully achieve my goals.
8. I am doing things now that will help me prepare for my next educational and/or career opportunity.
9. I am focusing on what I need to do to be successful in college.
10. I seek out other learning/training opportunities to increase my skills.
11. To reach my goals, I actively seek out support and guidance from others.
12. I try and get the most I can from every learning opportunity.
13. I am worried about the future and whether I will be able to achieve my goals.
14. I am not sure whether I will have the resources needed to achieve my goals.
15. I have trouble deciding what exactly I want to do (for example in my life, college, career).
16. It is hard for me to get motivated to actively pursue my goals.
17. I have a number of plans for after college to fall back on if the one I prefer doesn't work out (for example in my life, college, career).
18. My family plays an important role in helping me plan for my life after college (for example in my life, college, career).
19. My college provides me with support in planning for my life after college (for example in my life, college, career).

### Appendix D: Coding Criteria of Narrative Coherence

Dimension/ Score	Description
<b>Context</b>	Orienting the narrative in time and space.
0	No information about time or location is provided.
1	Partial information is provided; there is mention of time or location at any level of specificity.
2	Both time and place are mentioned, but no more than one dimension is specific.
3	Both time and place are mentioned, and both are specific.
<b>Chronology</b>	Relating components along timeline.
0	Narrative consists of a list of actions with minimal or no information about temporal order.
1	Naïve listener can place some but not most of the events on a timeline. Fewer than half of the temporally relevant actions can be ordered on a timeline with confidence.
2	Naïve listener can place between 50% and 75% of the relevant actions on a timeline but cannot reliably order the entire story from start to finish with confidence.
3	Naïve listener can order almost all (>75%) of the temporally relevant actions. This includes cases in which the speaker marks deviations from temporal order or repairs a violated timeline.
<b>Theme</b>	Maintaining and elaborating on topic.
0	The narrative is substantially off topic and/or characterized by multiple digressions that make the topic difficult to identify. No attempt to repair digressions.
1	A topic is identifiable and most of the statements relate to it. The narrative may include minimal development of the topic through causal linkages, or personal evaluations and reactions, or elaborations of actions.
2	The narrative substantially develops the topic. Several instances of causal linkages, and/or interpretations, and/or elaborations of previously reported actions are included.
3	Narrative includes all the above and a resolution to the story, or links to other autobiographical experiences including future occurrences, or self-concept or identity. Resolution brings closure and provides new information.

Adapted from “Coherence in Personal Narratives: A Multidimensional Model,” by E. Reese, C. H. Haden, L. Baker-Ward, P. J. Bauer, R. Fivush, and P. A. Ornstein, 2011, *Journal of Cognition and Development*, 12(4), p. 436. Copyright © 2011 by Taylor & Francis Ltd: Journal of Cognition and Development. Reprinted with permission.

### Appendix E: Coding Criteria of Meaning-Making

Score	Description
0	Narrative with no meaning reported.
1	Narratives with a lesson reported. Lessons were defined as meaning that were often behavioral and did not extend the meaning beyond the original recalled event.
2	Narratives with vague meaning. Narratives contained meanings that were slightly more sophisticated than lessons but were not as explicit as insights.
3	Narratives with insights, which were defined as meanings that extend beyond the specific event to explicit transformations in one's understanding of oneself, the world, or relationships.

Adapted from "Life's Little (and Big) Lessons: Identity Statuses and Meaning-Making in the Turning Point Narratives of Emerging Adults," by K. C. McLean and M. W. Pratt, 2006, *Developmental Psychology*, 42, p. 717. Copyright © 2006 by American Psychological Association. Reprinted with permission.

## **Appendix F: Information Sheet**

This research is conducted by is Chonlada Jarukitisakul (principal investigator), doctoral student in counseling psychology, School of Education, Boston University, under the guidance of Dr. Scott Solberg (co-investigator and faculty advisor).

Please read this form carefully. The purpose of this form is to provide you with important information about taking part in a research study. If this form has any words or statements that are unclear, please ask research staff for clarifications.

Participation in this study is voluntary. You are free to not participate or to withdraw from the study at any time for any reason. No matter what you decide, there will be no penalty or loss of benefits to which you are entitled. This also will not affect your standing at Boston University.

**Why is this study being done?** The purpose of this study is to investigate the role of mindfulness in identity development and goal setting in emerging adults. We are asking you to take part in this study because you are 18 years of age or older and a student at Boston University. About 150 participants will take part in this research study.

**How long will I take part in this research study?** The survey should take approximately 30-45 minutes.

**What will happen if I take part in this research study?** In this research study, you will be answering questions about your sense of self and your everyday life experiences, as well as providing responses to open-ended questions. The open-ended questions focus on an important life event that has had an influence on your sense of self in terms of personality, interests, beliefs, values, goals, career plans, etc.

**How will you keep my study records confidential?** All surveys will be anonymous, which means that no one will ever be able to connect your responses to you or your name. All records of data will be kept confidential by storing them in password protected files on a password protected computer, and by allowing nobody other than laboratory personnel access to research materials.

The following people or groups may review your study records for purposes such as quality control or safety:

- The Institutional Review Board at Boston University. The Institutional Review Board is a group of people who review human research studies for safety and protection of people who take part in the studies.
- Federal and state agencies that oversee or review research.

**Study Participation and Early Withdrawal** You may choose not to be in the study or to stop being in the study before it is over at any time.

**What are the risks of taking part in this research study?** Some survey questions will ask your thoughts and feelings about your past experiences. You might experience slight discomfort while answering these questions. To protect the confidentiality, your information will remain anonymous as stated above. You may skip any questions you do not want to answer.

**Are there any benefits from being in this research study?** There are no direct benefits to you for taking part in this research study.

**Will I get paid for taking part in this research study?** You will have the option to enter a lottery for a one-in-ten chance of being selected for a \$25 gift card upon your successful completion of the survey.

**If I have any questions or concerns about this research study, who can I talk to?** Please reach Chonlada Jarukitisakul at phone (781-502-5697) or email address (chonlada@bu.edu), and/or Dr. Scott Solberg at phone (414-704-2133) or email address (ssolberg@bu.edu). In addition, if you have any concerns or any questions about your rights or want to speak with someone independent of the research team, please contact the Boston University IRB office directly at 617-358-6115.

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I have read and understand the information in this consent form.

## Appendix G: Recruitment Script

Thank you for having us here today. Your instructor (or staff) has allowed us to introduce our study and invite you to participate in this study. This study focuses on the role of mindfulness in identity development and goal-setting in emerging adults. Nowadays, mindfulness is very popular. This study is important because research has shown that many college students are exploring academic and career options, and searching for a sense of self and who they are as a person. Yet, little is known about how being mindful of what is happening in the present moment can help college students recognize their interests, values, and beliefs, which in turn helps them develop self-understanding and set goals consistent with their true selves.

It is our hope that participating in this study would allow you to reflect on your experience and its influence on your sense of self. Your participation would not only help other college students understand how mindfulness can promote identity development, but also aid research efforts in the area of positive development for college students. Participation is greatly appreciated and will be used to inform mindfulness-based interventions to promote self-knowledge and well-being among college students.

You are eligible to participate in this study if you are 18 years or older. If you agree to participate in this study, you will be routed to an online survey consisting of a 58-item questionnaires and open-ended questions. The open-ended questions will ask you to describe an important life event that has had an influence on your sense of self which could be related to either personality, interests, beliefs, values, goals, career, etc. Total expected completion time is about 30-45 minutes. You will have the option to enter a lottery for a one-in-ten chance of being selected for a \$25 gift card upon your successful completion of the survey!

**[Added instructions if the instructor is allowing student participation during class time:**

If your instructor (or staff) allows us to invite you to participate in the study now during class time, you will have the option whether or not you want to participate. The instructor (or staff) will ask students who choose not to participate, to engage in an alternate activity selected by the instructor.]

You are not asked for identifying information and will remain anonymous in your responses and information provided. This survey is voluntary and can be discontinued at any time with no penalty. This also will not affect your standing at Boston University. Regardless of what you choose, we are delighted to be here. If you are interested in participating in this study, please access the survey at the following web address:

[https://bostonu.qualtrics.com/SE/?SID=SV\\_0TmWE6i0y80B1SI](https://bostonu.qualtrics.com/SE/?SID=SV_0TmWE6i0y80B1SI)

The Boston University IRB approved this study. If you have any questions or concerns about this research study, please reach Chonlada Jarukitisakul at phone (781-502-5697) or email address ([chonlada@bu.edu](mailto:chonlada@bu.edu)), and/or Dr. Scott Solberg at phone (414-704-2133) or email address ([ssolberg@bu.edu](mailto:ssolberg@bu.edu)). In addition, the Boston University IRB office can also be contacted directly at 617-358-6115 with any concerns or questions related to this study. I would like to thank you once again for your time and consideration.

## Appendix H: Email Text and Recruitment Letter

Hello!

I am a doctoral student in the Counseling Psychology program at Boston University, completing my dissertation under the guidance of Dr. Scott Solberg. I would like to invite you in a research study on the role of mindfulness in identity development and goal-setting in emerging adults. This study is important because research has shown that many college students are exploring academic and career options, and searching for a sense of self and who they are as a person. Yet, little is known about how being mindful of what is happening in the present moment can help college students recognize their interests, values, and beliefs, which in turn helps them develop self-understanding and set goals consistent with their true selves.

It is my hope that participating in this study would allow you to reflect on your experience and its influence on your sense of self. Your participation would not only help other college students understand how mindfulness can promote identity development, but also aid research efforts in the area of positive development for college students. Participation is greatly appreciated and will be used to inform mindfulness-based interventions to promote self-knowledge and well-being among college students.

You are eligible to participate in this study if you are 18 years or older and a BU student. If you agree to participate in this study, you will be routed to an online survey consisting of a 58-item questionnaire and open-ended questions. The open-ended questions will ask you to describe an important life event that has had an influence on your sense of self which could be related to either personality, interests, beliefs, values, goals, career, etc. Total expected completion time is about 30-45 minutes. You will have the option to enter a lottery for a one-in-ten chance of being selected for a \$25 gift card upon your successful completion of the survey!

This survey is voluntary and anonymous, and can be discontinued at any time with no penalty. This also will not affect your standing at Boston University. The Boston University IRB approved this study. If you have any questions or concerns about this research study, please reach Chonlada Jarukitisakul at phone (781-502-5697) or email address (chonlada@bu.edu), and/or Dr. Scott Solberg at phone (414-704-2133) or email address (ssolberg@bu.edu). In addition, the Boston University IRB office can also be contacted directly at 617-358-6115 with any concerns or questions related to this study.

If you choose to participate, please access the survey at the following web address: [https://bostonu.qualtrics.com/SE/?SID=SV\\_0TmWE6i0y80B1Sl](https://bostonu.qualtrics.com/SE/?SID=SV_0TmWE6i0y80B1Sl)

I would like to thank you once again for your time and consideration.

## Appendix I: IRB Approved Letter

Boston University Charles River Campus Institutional Review Board

25 Buick Street  
Room 157  
Boston, Massachusetts 02215  
T 617-358-6115  
www.bu.edu/irb



### Notification of IRB Review: Exemption Request

January 31, 2017

Chonlada Jarukitisakul  
School of Education  
Two Silber Way  
Boston, MA 02215

**Protocol Title:** The Role of Mindfulness in Identity Development and Goal-Setting in Emerging Adults  
**Protocol #:** 4412X  
**Funding Agency:** Unfunded  
**IRB Review Type:** Exempt (2)

Dear Ms. Jarukitisakul:

On January 31, 2017, the IRB determined that the above-referenced protocol meets the criteria for exemption in accordance with CFR 46.101(b)(2). Per the protocol, the purpose of this study is to investigate the role of mindfulness in identity development and goal-setting in emerging adults from two different identity approaches – the identity status model and the narrative identity. This study will consist of an online survey. The exempt determination includes the use of: recruitment materials (3), consent language, and survey.

Additional review of this study is not needed unless changes are made to the current version of the study. Any changes to the current protocol must be reported and reviewed by the IRB. If you have any changes, please submit the **Clarification Form** located at <http://www.bu.edu/irb/>. No changes can be implemented until they have been reviewed by the IRB.

In approximately six months, you will receive an inquiry from the IRB to ascertain whether your study still meets the requirements for exempt review

If you have any questions, please contact me at 617-358-6922.

Sincerely,

Mary McCabe  
IRB Analyst  
Charles River Campus IRB

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